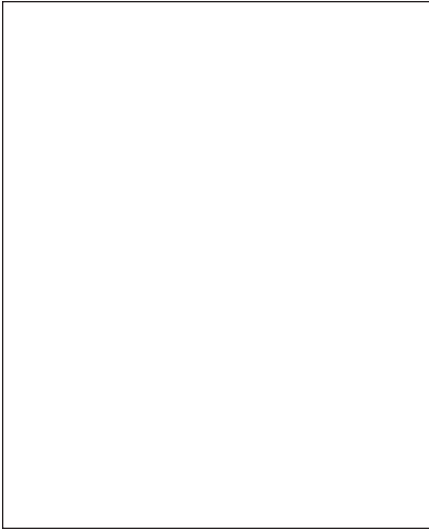




# Understanding Asia's Financial Crisis

Lecture by  
**Dr. Barry Eichengreen**

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Saint John's University



# Barry Eichen- green

Dr. Barry Eichengreen is an accomplished young scholar in international finance and economics. He is both John L. Simpson Professor of Economics and Professor of Political Science at the University of California at Berkeley. He has just completed a term as senior policy advisor for the International Monetary Fund (involving him deeply in the current global financial crisis) and is a research associate at the National Bureau of Economic Research. His books include a history of the international monetary system and an analysis of European monetary unification.

# Understanding Asia's Financial Crisis

by Dr. Barry Eichengreen

It is a mistake to think of Asia's financial collapse as a single event. The causes and consequences differed across countries. New financial crises unfolded upon old ones; by the spring of 1998, the Managing Director of the International Monetary Fund (IMF), Michel Camdessus, routinely referred to "crises within crises." To be sure, these difficulties were related. But attempting to explain them all by a single set of causes or to use them as turf on which to run a horse race between competing economic models is not helpful. Rather, the events in Asia suggest that understanding 21st-century crises will require weaving together strands from different models. Correspondingly, proposals for reform must address the problems highlighted by each of the relevant models.

## Background

One sign that the Asian crisis was both complex and distinctive is that the period leading up to it was characterized not by economic difficulties but by robust rates of economic growth, much higher than in Europe and the United States. Growth rates of Gross Domestic Product (GDP) in 1996 ranged from more than 5 percent in Thailand to 8 percent in Indonesia. This achievement continued a pattern existing since the early 1980s. Rapid growth was fueled by high rates of saving and investment (as high as 40 percent), sound macroeconomic policies, and outstanding rates of export growth. Government budgets were in surplus, and economies were successfully restructured along export-oriented lines. References to the East Asian "miracle" became commonplace.<sup>1</sup>

More than a year after the fact, it is now possible to discern disquieting signs. The growth of export revenues decelerated in 1996, reflecting slower growth of demand in the region's principal export markets, a slowdown in the global electronics industry, and competition from Mainland China.<sup>2</sup> Current account deficits were large in Thailand and Malaysia. Equity prices declined, foreshadowing lower profits in the manufacturing sector. Indonesia, South Korea, Thailand and even Singapore had large amounts of short-term debt relative to their foreign exchange reserves. Legions of financial analysts now justify their livelihood by pointing to these leading indicators of problems that came later. But this is wisdom after the fact.

The one exception is Thailand. Not only had Thailand's current account deficit risen to an alarming 8 percent of GDP, but its export performance was disappointing. To prevent debilitating fluctuations in the value of the Thai currency, the baht,

government authorities adopted a “currency peg,” that is they tied the value of the baht to a “basket” of foreign currencies with a heavy emphasis on the U.S. dollar. Because the dollar was itself gaining strength against other major currencies, this policy caused the baht’s real exchange rate to be pulled up significantly, making it more difficult to export goods. While the currency-pegging policy was not limited to Thailand, only there did leading investment analysts expect a sustained slowdown in exports.<sup>3</sup> Reflecting these problems, Thai equity prices trended downward and the real estate bubble burst. With the country’s finance companies heavily exposed to the property and stock markets, the decline in asset values posed an obvious threat to their solvency and, in turn, to the government’s commitment to maintaining the currency peg.

The Managing Director of the IMF wrote letters of warning to the Thai authorities. IMF officials traveled to Bangkok to convey the message in person. The markets, if not the Thai officials, took heed. One hedge fund manager reported to this author that he was first alerted to problems in Thailand by a presentation at the annual meetings of the Fund and the World Bank in September of 1996.<sup>4</sup> There was pressure against the baht as early as July of that year following the collapse of the Bangkok Bank of Commerce. In the nine months leading up to its July 2nd devaluation, the baht was hit by three more speculative sell-offs. But even in Thailand, there was no indication that the market anticipated the severity of impending problems in the spread on syndicated bank loans, in the spread on bond issues on primary and secondary markets, in the sovereign debt ratings issued by Standard & Poor’s and Moody’s, or in the forecasts of the leading commercial and investment banks.<sup>5</sup>

#### Course of the Crisis

The crisis opened with Thailand’s devaluation on July 2nd, 1997 and deepened with the spread of difficulties to neighboring countries in Southeast Asia. Although the Thai, Indonesian, Malaysian and Philippine currencies all depreciated by 25 to 33 percent in the third quarter of 1997, the crisis could still be seen at this time as limited to these countries. This was no longer true starting in October with the devaluation of the New Taiwan dollar, which led to a speculative attack on Hong Kong (whose economic structure was similar to Taiwan’s and which competed with it in many markets), and with the spread of the crisis to South Korea. The first half of 1998 was dominated by the continued deterioration of economic, financial and political conditions in Indonesia, with strongly negative impacts on investor confidence and hence on the prospects for the other crisis economies. The most recent phase was ignited by the worse-than-expected economic performance of Japan, which came to light in the second quarter of 1998, and by Russia’s default in August and the spread of turmoil to still other emerging markets.

The Trigger. As we have seen, given the palpable nature of Thailand’s difficulties and the subtler problems of its neighbors, it was possible at first to see the devaluation of the baht as an isolated event. The fact that the large international investors (hedge funds, commercial banks, investment banks) with short positions against the baht did not at the same time have large short positions against other Southeast Asian currencies is a clear sign that this is how they perceived the situation.<sup>6</sup> And the fact

that the Thai authorities responded to mounting speculative pressure by intervening in the forward market rather than by attempting to correct the fundamentals made the devaluation seem unavoidable and fully justified.

Following its devaluation, the baht continued to depreciate at an alarming rate. On July 29, 1997 the Chavalit Government approached the IMF for help. Within two weeks Japan convened a meeting of supporting countries who agreed to supplement the resources provided by the Fund. But Thailand's weak government was unprepared to take bold measures either to reassure investors or to halt debt-servicing payments and reflate the economy. Increases in gasoline taxes designed to raise revenue for use in recapitalizing the banking system were reversed in response to public protests, heightening uncertainty about the orientation of policy. The finance minister resigned on October 19th. The baht continued to decline, losing nearly 50 percent of its value against the U.S. dollar by the end of the year despite the installation of a Chuan Government committed to the terms of the IMF agreement. Only in early 1998, after the new government demonstrated its resolve by moving on the issue of bank restructuring, did the baht begin to recover some of the ground lost previously and did the equity market stabilize.

The Spread of the Crisis. While the fact of Thailand's difficulties hardly came as a surprise to informed observers, the same cannot be said of their extent and, especially, their repercussions in other countries. The stock market fell and pressure against the currency was felt almost immediately in Indonesia, Malaysia, the Philippines, Singapore and Taiwan. The Philippines responded on July 11, 1997 by abolishing its fluctuation band for the peso, and Indonesia widened its "fluctuation band" for the rupiah later that same day, officially allowing the currency to fall in value, but within limits. Along with Thailand, Indonesia was most strongly affected. Its stock prices, currency values and international reserves fell sharply, and the Suharto government was forced to abandon its defense of even the new lower limits on the value of the rupiah after little more than four weeks.

The spread of the crisis to Indonesia was unexpected because that country's growth had been unusually rapid and its macroeconomic fundamentals were strong. More generally, it was hard to see what the countries infected by the contagion had in common other than physical proximity. Levels of income and economic development were disparate. Some like Malaysia and Singapore did modest amounts of business with Thailand, but others like Indonesia and Hong Kong sold virtually nothing there. Some countries depended heavily on exports of primary commodities, while others produced and sold high-tech goods. Their industrial structures ranged from large industrial groups of Indonesia to the small export-oriented firms of Taiwan. Except with benefit of hindsight, the virulence and scope of the contagion was, in truth, very much a surprise.<sup>7</sup>

With the crash of the Hong Kong stock market in October 1997 and the spread of instability to South Korea, the crisis went global. The world's 11th largest economy, Korea was far larger than those stricken previously. Its banks had extensive investments around the world. Market participants being cognizant of these facts, fears mounted for the stability of currencies as far away as Russia and Brazil.

Just as the spread of the crisis to Indonesia had been a surprise, so too was the virulence with which it infected South Korea. Korea had been recovering from a

slowdown in 1996, when the prices of semiconductors (its single biggest export item) had declined sharply. The government had brought down the nation's current account deficit from 5 percent of GDP to more manageable levels of 2.2 percent. But slower growth and depreciated currencies elsewhere now raised questions about whether this progress could be sustained. Fears arose about the financial difficulties of the country's industrial conglomerates, the "chaebol." The Hanbo Group (the 14th largest chaebol) had collapsed in January 1997, taking \$6 billion of domestic bank loans with it. Sammi Steel (the lead firm of the Sammi Group, the 26th largest chaebol) failed in March, the Kia Group (the 8th largest chaebol) in July. As business failures mounted, concern spread for the viability of the banks to which the chaebol were linked. Korean banks thus found it increasingly expensive to fund themselves abroad. Meanwhile, foreign investors suffering losses elsewhere in Asia liquidated their investments in Korea in order to rebalance their portfolios and raise cash, intensifying the pressure on the Korean financial system.

Korea's negotiation of an IMF package, an exceptional step for a member country of the club of industrialized nations, the OECD (the Organization for Economic Cooperation and Development), brought only temporary respite. Revelations through the publication of leaked IMF documents indicated that the country's short-term debt was significantly higher than previously thought. Combined with the government's reluctance to close troubled banks, this undermined confidence among international investors.<sup>8</sup> Commercial banks refused to renew short-term loans and took their money out of the country even faster than the IMF and G-7 governments pumped it in. With short-term foreign debt maturing at the rate of \$1 billion a day, it seemed inevitable that Korea's reserves would be exhausted by the end of December.

The week between Christmas and the New Year saw emergency negotiations between the foreign commercial banks with credits to Korea and the newly-elected government of Kim Dae Jung, under the stewardship of G-7 central banks. Forced to acknowledge their collective action problem, U.S., Japanese and European banks agreed to roll over their short-term loans, giving the government time to negotiate a more comprehensive financial restructuring package. On January 28, 1998, Korea and the banks reached an agreement on the rescheduling of \$24 billion of debt and on a plan to replace the bank loans with long-term bonds. Inducing investors to take up those bonds required the country to maintain high interest rates, with adverse implications for the economy. The consequences became known in May, when it was announced that the Korean economy had shrunk by nearly 4 percent in the first quarter of 1998.

The Crisis Within the Crisis. Yet the dominant events of the first months of 1998 were not those in Korea but rather those affecting Indonesia and Japan. The IMF had unveiled a \$23 billion rescue package for Indonesia in October 1997. With the situation there continuing to deteriorate, the Suharto Government and the Fund signed a second agreement on economic reform in January. Against the backdrop of the government's continued indecision regarding the fate of major public investment projects and insolvent banks, investor doubts rendered IMF loans and conditions less than effective.<sup>9</sup> The rupiah fell to Rp17,000 to the dollar on January 22nd (down more than 80 percent compared to a pre-crisis level of Rp2,434), before recovering. Indonesian banks and corporations were left unable to service their foreign-currency

debts, the country was forced to suspend debt service payments. Banks stopped lending, and trade credits evaporated. The economy ground to a halt.

Against this backdrop, evidence of the severity of Japan's economic difficulties had a devastating impact on confidence. At the beginning of April Japanese corporate leaders warned of the gravity of the economic situation. Moody's downgraded Japan's sovereign debt on the 3rd of the month. Asia's "locomotive" having stalled, investor confidence in the other crisis countries suffered. Indonesia was hit hardest. A third agreement on economic reform with the IMF had little effect. In early May the continued deterioration of economic and financial conditions spilled over into street demonstrations, leading President Suharto to resign two weeks later. Hopes that this might set the stage for stabilization and recovery were then dashed by more bad news from Japan. On June 8th the yen fell below 140 to the U.S. dollar. On June 12th the Japanese government reported that first-quarter GDP had fallen by more than 5 percent at an annual rate. Fears that further weakening of the yen might lead Japan's Asian neighbors (including China) to another round of competitive devaluations prompted U.S. and Japanese intervention in the foreign exchange market to prop up the Japanese currency.

Thus, when the first anniversary of the Asian crisis was "celebrated" on July 2nd, 1998, there were still few signs of the kind of recovery that had developed in Mexico within six months of the 1994-95 peso crisis. While most Asian currencies had recovered from their early 1998 troughs, there were still few signs of economic growth. The IMF now forecast renewed growth in Korea and Thailand starting by the beginning of 1999, but this was far from assured. And it seemed highly unlikely that Indonesia, mired in debt and political problems, would glimpse the light at the end of the tunnel even then. Anti-government riots continued to flare up in July, raising questions about the sustainability and direction of future policy. The only certainty was that recovery from this crisis would take longer and be even more difficult than in Mexico three years before.

### Causes of the Crisis

The Asian financial crisis is best understood as a financial crisis with self-fulfilling features afflicting countries whose governments lacked the economic and political wherewithal to defend their currencies. And the weakness of governments, in turn, reflected three sources of vulnerability.

**Macroeconomic Imbalances.** Macroeconomic factors contributed to this vulnerability, even though this might seem strange for countries where economic growth was proceeding at 5 to 8 percent a year. The region's rapid growth was sustained in part by capital inflows which caused increasingly overvalued real exchange rates, accompanied in some cases by ballooning current account deficits. The appreciation of real exchange rates was not large by the standards of, say, Argentina and Brazil, and the current account deficit reached truly alarming levels only in Thailand and Malaysia, but both higher exchange rates and the current account deficit were sources of vulnerability. They could be transformed into serious problems if foreigners suddenly stopped investing because they decided one morning that the deficit would no longer be financed. Eliminating a large current account deficit requires the

large-scale redeployment of resources from production for domestic consumption to production for export, something that can occur smoothly, without a recession, only if it is allowed to take place gradually over time. Eliminating that deficit quickly, in contrast, requires radically reducing demand, disrupting production, and almost certainly inducing a recession. If capital suddenly stops flowing in, bridge financing is required to avoid this outcome, and if the nation's foreign reserves are not sufficient to provide it, attracting it requires high interest rates.

**Financial-Sector Weaknesses.** The second source of Asia's vulnerability was the weakness of the financial systems in the crisis countries. High interest rates only served to compound their problems. In particular, the now higher interest rates (which were needed to attract foreign capital and stabilize the balance of payments) threatened to destabilize the banking system. Banks are in the business of borrowing money from some people to lend it to others, and higher interest rates raised their funding costs. And passing on those higher funding costs to their customers precipitated loan defaults which further damaged their balance sheets. Put another way, sustaining capital inflows required higher interest rates, which reduced the easy availability of credit in domestic financial markets, but this process would threaten havoc by knocking out the props from under the banking system. International investors were understandably skeptical that governments were prepared to stay the course. Rudiger Dornbusch put the point colorfully, as usual:

"To keep the money coming in to finance the Ponzi game and hold the exchange rate, interest rates had to go up to reward foreign lenders for the risk, but that made real estate and banks even worse. To keep banks alive, interest rates had to go down. The government could not have it both ways. They cut rates, made it free to speculate against the currency and that is what happened."<sup>10</sup>

After Samprasong Land missed a payment on its foreign debt in February 1997, the Bank of Thailand lent more than \$8 billion to distressed financial institutions through its Financial Institutions Development Fund, despite already mounting pressure on the baht, which it supported by intervening in the foreign exchange market. Speculators drew the obvious conclusion.

**Short Maturity of Debt.** This leads to the third element of the story, the short-term nature of the foreign funding of Asian banks and corporations. Between 1990 and 1996 roughly 50 percent of net private portfolio capital inflows into Thailand took the form of short-term borrowing.<sup>11</sup> 62 percent of net capital inflows in Korea consisted of short-term borrowing in the three years 1994-1996, compared with 37 percent in 1990-1993.<sup>12</sup> Net interbank lending rose from \$14 billion in the five years ending in 1994 to more than \$43 billion in the next two years. 40 percent was denominated in yen, the rest in dollars. More than two-thirds of these loans matured in less than a year.<sup>13</sup>

Hence, the Asian economies had not just a flow problem — a continued need to attract ongoing capital inflows to finance their current account deficits — but a stock problem as well. They had accumulated large stocks of short-term debt, denominated in foreign currencies, that needed to be regularly rolled over (i.e., refinanced). If confidence was disturbed, it would be necessary to pay higher interest rates to induce foreign investors to renew their maturing loans. And given the threat this would be to already weak domestic banks, there were obvious questions about the willingness



and ability of governments to do so. To the contrary, government authorities might feel compelled to guarantee the foreign liabilities of the banks, creating additional claims against their thinly-stretched foreign exchange reserves and ensuring that the banking crisis also provoked a currency crisis.<sup>14</sup>

These three elements — modest macroeconomic imbalances, serious banking-sector problems, and mismanagement of the maturity structure of the debt — placed governments in an untenable position. Painful policies were required to sustain confidence if it was disturbed, but financial systems could not bear the pain. There was nothing inevitable about the crisis, except in Thailand perhaps; better luck (and better policies) might have enabled countries to grow out of their current account deficits, lengthen the maturity structure of their debts, and strengthen their banking systems before a shock to confidence occurred. As things happened, however, Thailand's devaluation disturbed investor confidence before its neighbors succeeded in escaping the zone of vulnerability, and the rest, as they say, is history.

### Delving Deeper

This interpretation suggests that the turmoil in Asia in 1997 was a self-fulfilling crisis in which countries had entered a zone of vulnerability where governments were unable to sustain a credible defense of their currencies. In particular, the combination of modest macroeconomic imbalances, banking-system weaknesses, and the short maturity of foreign debts resembled problems in Mexico and in other countries that had felt the "Tequila effect" in the Mexican peso crisis three years before.<sup>15</sup>

A deeper question is how the Asian crisis countries allowed themselves to get into this bind in the first place. The superficial answer is that their crucial blunder was failing to upgrade bank supervision and regulation (for example, to prevent high-risk borrowing and lending) when liberalizing their financial systems, a failure which left them unable to raise interest rates (for fear of bank defaults) and to mount a sustained defense of the currency.<sup>16</sup> Specifically, the inadequacy of supervision and regulation allowed the banks to rely excessively on high-cost foreign funding, to over-commit to risky investments in the property market and industry, and to saddle themselves with nonperforming loans. Banks took on excessive short-term debt denominated in foreign currencies because they were allowed to continue operating despite a weakened financial condition and the perverse risk-taking incentives this implied.

What remains to be explained is why the authorities were prone to these policy mistakes. Why did they fail to strengthen financial supervision and regulation? Why did bank owners, with their own capital at stake, fail to manage risks to avert such disastrous outcomes? And why were the markets so inclined to provide the short-term foreign funding that ultimately proved so disastrous?

Banks as Instruments of Industrial Policy. The answer to these questions is that banks enjoyed government guarantees that promised to bail them out of any and all difficulties, which in turn encouraged them to take on excessive risk. Such guarantees were part and parcel of a long-standing economic development strategy in which the banks were the instruments of industrial policy. The banks were given franchises — competition was suppressed — in return for their acceptance of government instructions regarding the allocation of credit.<sup>17</sup> Guarantees were the banks' quid

pro quo for allowing themselves to be used as the instrumentality for public policy — as governments' quasi-fiscal agents. In this bank-led financial system, banks were too big and too important to fail. Knowing that they would not be allowed to fail, owners and managers had an incentive to take on excessive risk.

One can see how this provided opportunities for crony capitalism. It was devilishly hard to determine whether the decision to extend credit to a particular industry or enterprise reflected the priorities of the economics ministry or the self-interests of political leaders' extended families. So long as there was an abundance of high-return projects waiting to be financed, the distinction was of little moment. But once high-return investments had been exhausted and the period of extraordinarily rapid growth drew to a close, making the right investment became critically important, for now the extension of preferential credits in disregard of market signals placed the solvency of the banks at risk. This may not have been exactly what the Malaysian Prime Minister Mahathir Mohammad meant when he said that rapid growth, like high water, submerges rocks that can otherwise punch holes in the sturdiest boats, but the comment could not have been more apposite.

And when the waters of economic prosperity began to recede, revealing the rocks below, the banks navigated the shoals by borrowing abroad at higher risk and only ending up in whiter water. Governments consorted in this decision to roll the dice. The Thai and Korean governments liberalized the capital account exactly backwards. Korea maintained stringent controls on "direct foreign investment," e.g., capital inflows (by foreign investors to build and own factories in Korea) and limited opportunities for foreigners to purchase bonds and equities issued by Korean corporations. It restricted the ability of those corporations to borrow on international markets.<sup>18</sup> The banks, meanwhile, were freed to borrow abroad, rendering the chaebol dependent on bank debt. This policy was not one of incompetence, as sometimes suggested; it was a logical outgrowth of the government's cultivation of a bank-centered financial system. Similarly, this is the only way to understand the decision of the Thai Government to promote the growth of the Bangkok International Banking Facility (BIBF), which permitted Thai banks to borrow offshore and pass on this money to domestic customers in the form of foreign-currency-denominated loans.<sup>19</sup> Thus, the foreign liabilities of the Korean banking system more than doubled between 1993 and mid-1997, reaching nearly 10 percent of GDP. In Thailand, following the establishment of the BIBF, this ratio reached a remarkable 28 percent of GDP in 1995.<sup>20</sup>

Accommodating Global Credit Conditions. It takes two to tango. These Asian policies would not have had such powerful effects had they not coincided with global conditions encouraging U.S., European and Japanese banks to lend. The consequences of Asian financial weaknesses could be contained so long as borrowers there had limited access to foreign funding. What changed in the mid-1990s was not just the relaxation of regulatory limits on their borrowing abroad but also structural and macroeconomic changes in the rest of the world which allowed Asian banks to freely indulge their appetites for foreign funding.

Financial deregulation in Europe was one of these changes: it had the effect of reducing the profit margins of domestic banks, it encouraged European banks to seek higher yields in Asia. It also removed regulatory limits on the ability of European commercial and investment banks to branch into new lines of business, notably in

emerging markets. More importantly, low interest rates and low yields in the major money centers encouraged institutional investors to borrow money in the U.S. or Japan in order to lend it in middle-income Asia – by purchasing higher-yielding bank deposits or fixed-income securities.<sup>21</sup> The appearance of this “carry trade” in Malaysia in 1991-92 coincided with the Federal Reserve’s policy of low interest rates to stimulate the recovery of the U.S. economy from its early-1990s recession and to strengthen the American banking system.<sup>22</sup> It was fueled by the decline of money market rates to unprecedentedly low levels in Japan as that country descended into its mid-1990s economic funk.<sup>23</sup>

The key here is that there was an incentive to borrow where interest rates were low and invest where they were high so long as the exchange rate was pegged. Capital flows reflected the tendency toward interest parity, a condition that should hold in an environment of high capital mobility. An implication of this high capital mobility was that the authorities in capital importing countries of Asia had little ability to restrain the growth of domestic credit once the Fed opted for a more expansionary monetary policy to revive the U.S. banking system. Because exchange rates were linked, monetary policies were linked. As David Hale has put it, “As a result of the exchange rate link which east Asia had to the U.S. dollar, America’s expansionary monetary policy helped to encourage rapid credit growth in countries such as Thailand, Malaysia, Indonesia and the Philippines.”<sup>24</sup>

Thus, the exchange rate is a key part of the story. The operation of exchange rate bands and governments’ stated commitment to their maintenance meant that there was little perceived exchange risk to deter capital inflows. Larger capital inflows meant larger current account deficits, given the difficulty of offsetting those inflows, and more real exchange rate appreciation. Both the deficits and the large real appreciation were sources of vulnerability when financial market conditions were disturbed. Moreover, the absence of exchange rate variability left nothing to insulate money and credit conditions from those prevailing abroad. The loose monetary policies appropriate for a U.S. economy recovering from a banking crisis and a Japanese economy still mired in one were not appropriate for Asian economies in which the problem was instead the risk of overheating. In these crisis countries, higher real interest rates were needed because there existed a large number of attractive investment projects which could not all be undertaken at once. High interest rates were the rationing mechanism to force the market to choose among them. But the pegged exchange rate made it all but impossible keep interest rates at a sufficient premium over foreign levels. Excessive credit expansion and an unsustainable real estate boom were the inevitable results.

To be sure, pegging the currency was not the only option for Thailand, Malaysia, Indonesia, the Philippines, and South Korea. By the time the crisis struck, Korea had already moved cautiously in the direction of greater flexibility, and Indonesia, Malaysia and the Philippines, as we have seen, did so soon after Thailand’s devaluation. But limiting the flexibility of the exchange rate vis-à-vis the country’s principal export markets was a logical policy for governments whose economic development strategies had been predicated on the promotion of exports. It was part of the implicit bargain with export-oriented industries. Pegging to the dollar was also seen as a way of facilitating external financing of domestic investment projects.<sup>25</sup> It was another

legacy of Asia's development strategy that outlived its usefulness.

Long-Term Historical Forces and Short-Term Financial Policies. Thus, Asia's crisis can only be understood in terms of a conjuncture of long-standing historical forces and short-term financial policies. Ultimately, the explanation for the crisis lies in the region's history and economic development trajectory, which relied on bank-centered financial systems, the use of the banks as instruments of industrial policy, and close connections between banks and politicians, all of which were designed to sustain high rates of investment and rapid economic growth. This was not a formula that could work forever: by the second half of the 1990s it had been in place for several decades and was showing growing signs of strain.

At another level, the explanation lies in financial errors committed in the mid-1990s. Growth may have been slowing, but the day of reckoning was delayed by the selective liberalization of capital accounts to facilitate short-term financial flows, aided and abetted by the low level of interest rates in the major money centers and by the migration of American and European investment banks to middle-income Asia. These developments on the borrowing and lending sides enabled the Newly Industrializing Countries to borrow their way out of their difficulties for a time. In the end, however, this only set them up for a harder fall.

#### Why was the Crisis So Severe?

While these insights help one understand the speculative attacks, they do not explain the full-blown economic and financial meltdown that followed. Something more is needed to account for the exceptional severity and scope of the crisis.

Unhedged Foreign Exposure. One factor, surely, was the extent of the foreign-currency exposure of the banking and corporate sectors. Mexico had foreign exposure as well, in the form of the notorious tesobonos, but these were liabilities of the Mexican government, not of manufacturing firms and banks. When the peso began to decline, this created financial problems first and foremost for the Mexican government. In Asia, in contrast, the gravest problems were those created for the private sector. With so many banks and firms involved, the absence of an effective mechanism for coordinating debtor-creditor negotiations was a more serious problem than when there had been only the government on the debtor's side of the table. In comparison with Mexico, investors could look forward to a much longer period during which the debt overhang would continue to discourage potential lenders.

Critically, the foreign debts of Asian banks and firms were unhedged. The exchange rate having been pegged for so long, borrowers saw little reason to insure themselves against its depreciation by purchasing relatively expensive currency futures and forwards. Ironically, Asian governments' very success at pegging their exchange rates for so long was one factor behind the severity of the crisis, for it lulled domestic banks and corporates into a false sense of security. And when the exchange rate began to move, it threw into bankruptcy the banks and firms with the heaviest foreign exposures.

One of the classic preconditions for a contractionary devaluation is the existence of a stock of foreign-currency denominated debt, the service on which grows heavier as the exchange rate declines.<sup>26</sup> The operation of this mechanism is clearly evident

in Asia. As the exchange rate fell, the same monthly loan payment denominated in a foreign-currency became more expensive in domestic currency terms, leaving domestic residents poorer. Firms faced a heavier burden, and they invested less. Banks faced a heavier burden, and they lent less. And as demand fell, there was downward pressure on output. Meanwhile, more domestic output had to be devoted to servicing the same external debt. This meant freeing up a larger share of domestic resources for debt-servicing purposes, which required using policy to restrict demand still further. But this only depressed output still more, in turn putting further downward pressure on the exchange rate and further elevating debt servicing costs in a vicious spiral.<sup>27</sup>

**The Scramble for Cover.** In addition, banks and firms which had previously left their foreign exposures unhedged scrambled for cover when the exchange rate began to fall. Not only did they find it more costly to purchase the foreign exchange needed to meet their current obligations, but in addition they scrambled after additional foreign exchange to protect themselves against the possibility of future exchange rate depreciation, pushing the exchange rate down in a self-fulfilling prophecy. Once it became clear that governments could not follow through on their optimistic commitments to stabilize exchange rates, banks and firms with foreign-currency-denominated debts sought cover at any price.<sup>28</sup>

**Other Sources of Positive Market Feedback.** The scramble for cover was not the only reason why the initial decline in Asian exchange rates and asset prices fed on itself. The collapse of East Asian asset values and the fall of the Nikkei (the Japanese stock market) tightened the screws on already-distressed Japanese banks, which responded by calling in their loans. And once asset prices began to fall, hedge funds and other investors who had purchased emerging-market securities on margin were forced to raise cash to pay back their borrowed funds. The dynamics of margin calls forced them to sell into a falling market, and the further the market fell the more frequent the margin calls became.

In addition, when Moody's downgraded Thailand, Korea and Indonesia's sovereign debts in December 1997 to below-investment-grade status, many portfolio managers were required to liquidate their holdings of those securities. The assumption that the debts of corporate and financial issuers cannot have a better credit rating than the sovereign (the "sovereign ceiling") meant that these other securities became junk bonds as well. Finally, a number of bond contracts contained acceleration options allowing creditors to call for immediate repayment in the event that the issue was downgraded.<sup>29</sup> The existence of these options was not well known to other investors or, for that matter, to officials.

**Cascading Defaults.** Another factor contributing to the severity of the crisis was the absence in most Asian countries of adequate bankruptcy and insolvency procedures and a lack of independent judiciaries. Anticipating that the firms to which they had lent would experience serious financial problems and lacking confidence that they would be treated fairly under Asian countries' insolvency codes, creditors scrambled to liquidate their claims in an asset grab race. Even where forbearance was in their collective interest, creditors had an incentive to scramble for the enterprise's remaining assets before these were stripped by insiders and other more politically influential claimants. And when borrowers began to default, the inability of lenders to repossess

collateral produced a cascade effect where the debtor's nonperformance threatened to force its creditors into default. Where those creditors included banks, banking panics were the result. Specialists suggest that the dangers posed by inadequate bankruptcy procedures may not be apparent in periods of rapid growth when few firms experience financial distress, but that they will surface with a vengeance if and when growth slows.<sup>30</sup> Asia's experience is consistent with this view.<sup>31</sup>

The Contagion. Yet another factor contributing to the severity of the crisis was the speed and extent of the contagion. Exporting its way out of the crisis may have been possible for one stricken country, but it was not possible for an entire group of crisis economies, all of which could not significantly boost their exports to one another and to the same markets in other regions. This suggests that one channel for contagion was competitive devaluation operating through bilateral and third-country trade linkages.<sup>32</sup> Thailand may have exported little to Indonesia and Malaysia, but these countries all sold into the same markets in other parts of the world. Thailand's devaluation therefore worsened the balance-of-payments prospects of all its neighbors and competitors.

That said, trade links seem insufficient to explain the speed and virulence with which the crisis spread. And the contagion seems to have infected countries that exported primary commodities and high-tech products equally, without discriminating between them.

This points to the operation of other channels, notably the generalized revision of expectations prompted by the devaluation of the baht and reinforced by the spread of financial upheavals to Indonesia and Malaysia.<sup>33</sup> Not only did the Thai devaluation reveal that promises regarding Asian exchange rate pegs could not be taken at face value, it also alerted investors to the existence of deeper problems. Morris Goldstein refers to this as the "wake-up-call" hypothesis.<sup>34</sup> The term is both evocative and revealing of the limits of the interpretation. Rarely is an effort made to explain why this particular wake-up call was so loud and startling. As commonly invoked, this explanation for the contagion simply begs the question.

Guillermo Calvo suggests that globalization itself explains why investors were sleeping so soundly.<sup>35</sup> Globalization makes it possible to diversify investment portfolios internationally. But diversification reduces the incentive for each investor to pay the costs of learning about conditions in each national economy, since investments there now account for only a small fraction of his or her portfolio. Lacking information, investors are more likely to draw inferences from the actions of other investors — that is, to run with the herd.<sup>36</sup> Unfortunately, it is not clear why investors would not solve this problem by turning to mutual funds and other collective investment vehicles that are in the business of acting as delegated monitors because of the existence of information costs. Nor is it clear why the Thai devaluation should have been regarded by investors with stakes in other Asian countries as having such important information content.

A more compelling potential explanation goes back to the bank-based nature of Asia's financial system.<sup>37</sup> The region had developed few financial markets on which information was impounded into the prices of exchange-traded financial assets. Rather, this business was done by banks possessing relatively favorable access to information on their customers' financial position. Those banks were understandably

reluctant to share their proprietary knowledge with their competitors. They were entrusted, for better or for worse, to act as delegated monitors and generated few price signals like those provided in other economies by bond and equity markets. Because there was little independent information on the quality of loans, bad news served to discredit them as a group.

Moreover, the lack of transparency of bank balance sheets, reflecting the failure of government supervisors to require banks to follow rigorous auditing and accounting practices, heightened the difficulty of distinguishing good credit risks from bad ones, most obviously in Thailand but in Korea as well. Lengthy delays were allowed to occur before banks revealed information about their nonperforming loans.<sup>38</sup> Information on individual banks and loans being lacking, the erosion of confidence was general. And in this information-impacted environment, bank runs could lead to systemic banking crises and spill contagiously into other countries.

Japan's Deepening Slump. As if these are not enough explanations for the singular severity and scope of the crisis, finally there was the role of Japan. In 1994-95, when Mexico experienced its crisis, its principal trading partner, the United States, was growing strongly. In 1992-93, when much of Europe was in crisis, demand in Germany was strong, reflecting the effects of German unification. But in 1997-98, the opposite was true the relevant regional power, Japan, which traded more than any other G-7 member with the crisis countries and which was growing, as it had for the whole of the 1990s, slower than any other G-7 economy. This further limited the ability of the crisis countries to export their way out of their difficulties and had obvious adverse impacts on investor confidence.

Similarly, the weakness of Japanese financial institutions left them little margin for error when their East Asian investments stopped performing. Japanese banks, short of capital and required to meet the Basle Standards, responded to problems in Thailand and Indonesia by selling off their assets in other Asian countries, opening another channel for contagion.

### Implications

This interpretation of the crisis has five lessons, all closely related to one another. First, large current account deficits are not benign. Deficits have to be financed, placing a country at the mercy of its creditors. However admirable the uses to which foreign funds are put, the benefits must be balanced against the risk of a sudden curtailment of foreign lending and the need to eliminate that deficit overnight. Those of us who live in California appreciate the advantages of earthquake insurance. Policymakers need to similarly appreciate the importance of insuring themselves against financial tremors by avoiding excessive deficits.

Second, how the current account is financed is important. Dependence on short-term funding — especially short-term foreign-currency-denominated funding — is risky business.<sup>39</sup> If investors lose confidence for any reason and hesitate to roll over their short-term loans, the borrower's solvency can be cast into doubt. If those short-term foreign debts are owned by the financial system, macroeconomic stability will be threatened. And if those debts are denominated in foreign currency (or if the exchange rate is pegged), there will be little that the government and the central

bank can do about it.

Third, banks are a special source of vulnerability. Banks are particularly important in developing countries as a source of financial-intermediation services. Markets for securities (the modern alternative) have more demanding information requirements and, historically, are later to develop. This dependence means that banks will be regarded as too big and too important to fail. The knowledge that the government stands ready to run to their rescue is in turn a source of moral hazard that encourages excessive foreign borrowing by domestic banks. This provides a rationale on classic second-best grounds for policies to offset this distortion — for relating bank capital requirements to the source of their funding as well as the riskiness of their loans, and more generally for regulating the flow of short-term foreign funds into the banking system. Regrettably, this is the precisely opposite of what Asian governments, seeking to use the banks as instruments of industrial policy and conduits for the transfer of foreign funds, did in the years leading up to their crisis.

Fourth, developing countries, with few exceptions, should move toward greater exchange rate flexibility.<sup>40</sup> A more flexible exchange gives banks and corporates an incentive to hedge their foreign exposures, which positions them better to cope with financial turbulence if and when it occurs. In Asia, currency depreciation was painful because it came all at once and banks and corporates were unprepared. Had governments allowed the exchange rate to exhibit more flexibility in the period while capital was still flowing in, banks and corporates would have hedged more of their exposure, and the subsequent sharp depreciation would not have been so disruptive. Asia is not evidence that greater exchange rate flexibility is undesirable, but it provides a graphic example of the importance of initiating that transition before problems arise.

Finally, it will not always be possible to prevent or predict financial crises. While investments in crisis prevention have a high payoff, there will always be financial surprises, implying the need for better mechanisms for containing them. Unfortunately,



the two options currently available for responding to crises — extending ever-bigger bailouts, and standing aside and letting nature run its course — are equally unacceptable. This is why it is essential to create a third, more adequate alternative.

1. The classic reference, of course, is World Bank (1993).
2. While some have gone so far as to cite Beijing's devaluation of the yuan in 1994 as setting the stage for the crisis, most observers agree that not too much weight should be attached to this event: Chinese competition was but one of a number of factors intensifying the pressure on the crisis countries, and devaluation of the yuan was but one of a number of factors contributing to the intensification of Chinese competition. The depreciation of the yuan was largely offset by (and was itself designed to offset) the relatively rapid rise in yuan-denominated export prices. Analysis of these issues is provided by Fernald, Edison and Loungani (1998). Radelet and Sachs (1998b) emphasize also surging Mexican exports of electronics, apparel and automotive components to the United States following the NAFTA agreement and the depreciation of the peso in 1995.
3. Radelet and Sachs (1998a); Park and Rhee (1998).
4. The other obvious indicator of Thailand's mounting problems, namely, the steady decline of the central bank's foreign reserves, is another example of wisdom after the fact, if only because the country did not release timely information about changes in the extent of its spot and forward market positions.
5. Radelet and Sachs (1998a) present and discuss these data. For example, spreads on emerging market bonds only began to widen following the Thai devaluation. Cline and Barnes (1997).
6. This is documented in Eichengreen and Mathieson et al. (1998) and Brown, Goetzmann and Park (1998).
7. A representative opinion is Chase Manhattan Bank's research circular dated October 1st, 1997 (Chase Manhattan Bank, 1997), whose analysts concluded that it was unlikely that any of the other countries in the region "faces an imminent financial crisis" (p. 9), and who forecast growth rates for 1998 of 7 percent for Indonesia, 7 percent for Malaysia, and 6 percent for Thailand (p. 8). Statistical studies support this distinction between Thailand and the other crisis countries: the leading econometric studies of crisis incidence have some success in predicting the Thai crisis, but not so the crisis in other Asian countries. See Berg and Pattillo (1998).
8. In addition, there was the rumor, later shown to be true, that the Bank of Korea had deposited a portion of its reserves with foreign branches of domestic banks, rendering those reserves unusable. Japanese banks were first to call in their short-term debts due to mounting problems in the Japanese financial system, such as the failure of Yamaichi Securities, the fourth largest securities firm in the country, and the bankruptcy of several regional and city banks. Kim and Rhee (1998) suggest that because Japanese banks were thought to be particularly well informed of the Korean financial situation, their refusal to roll over their short-term credits precipitated similar actions on the part of other banks.
9. These problems were then compounded by a serious drought and by rumors of President Suharto's ill health.
10. Dornbusch (1998), p. 16. This is the theoretical dilemma modeled by Chang and Velasco (1998), as noted above in Chapter 2.

11. See Bhattacharya, Claessens and Hernandez (1997).
12. Park (1998), p. 14.
13. Bank for International Settlements (1998), pp. 122-123.
14. Here, then, is where the factors emphasized in "third-generation" models of currency crises, such as Dooley (1997) and Krugman (1998a), came into play.
15. These parallels are emphasized by Tornell (1998).
16. See for example Goldstein (1998).
17. Other means of enhancing franchise values included interest rate ceilings on deposits and restraints in interbank competition in the loan market. In return, banks were subject to regulations requiring them to allocate certain parts of their loan portfolios to particular industrial sectors. Reisen (1998), p. 24.
18. With the exception of certain short-term trade-related credits.
19. The original intention had been to promote the development of Bangkok as an international financial center by financing "out-out" transactions in which Thai banks borrowed offshore and lent only to offshore customers. Soon, however, the binding restrictions on domestic lending were relaxed. Foreign banks were encouraged to abet this process by official intimations that the enthusiasm with which they helped to fund Thai banks' loans would affect their chances of eventually receiving a license permitting them to set up shop domestically.
20. Radelet and Sachs (1998b), p. 25. Malaysia is a revealing comparison. In contrast to these other countries, its central bank sought to limit short-term foreign inflows through the banking system starting in 1994 by limiting banks' holdings of foreign funds, raising the cost of holding foreign deposits, and imposing ceilings on the net external liabilities of domestic banks. For details, see Glick and Moreno (1995). The foreign liabilities of deposit money banks thus fell from a high of nearly 20 percent of GDP in 1993 to less than half that in 1996. While Malaysia hardly escaped the crisis unscathed, the fact that the initial impact was milder than in Thailand is plausibly ascribed to these policies. Indonesia provides another case where the authorities imposed quantitative controls on offshore borrowing by banks in 1991 as well as tightening limits on their open foreign exchange positions and limiting their foreign exchange swap positions as a percentage of capital. In this case, however, these restrictions merely caused offshore borrowing to be re-routed from the banking system to the corporate sector. I discuss what should be done about this problem in Chapter 5 below.
21. In addition, some critics suggest that the U.S.- and IMF-led rescue of Mexico in 1995 was an important source of moral hazard which, by allowing foreign investors to get out whole, encouraged them to rush back to emerging markets, including those of Asia. It is hard to know how much weight to attach to this explanation given the number of other forces also at work.
22. The carry trade is described in International Monetary Fund (1998a).
23. In addition, the strength of the yen over much of this period stimulated investment both by making East Asian exports more competitive relative to those of Japan and by encouraging Japanese investment in the region (Park, 1998, p.6; Bank for International Settlements, 1998, p.118). The rapid rise of stock markets in the United States and many European countries, itself a concomitant of the low level of interest rates, further encouraged investors in the advanced industrial countries to search for higher-yielding assets in middle-income Asia. Given their limited access to domestic securities markets, they funneled their cash through Asian banks.

24. Hale (1997), p. 1.
25. As argued by Corsetti, Pesenti and Roubini (1998).
26. See Krugman and Taylor (1978) for a theoretical exposition.
27. Those who emphasize the depressing effects of the high interest rates applied by Asian central banks (and required by the IMF as a condition for its assistance) and argue that these may have depressed rather than strengthening currencies presumably have in mind something along these lines. See for example Radelet and Sachs (1998a) and Furman and Stiglitz (1998).
28. As Alan Greenspan (1998, p.4) put it, "The belief that local currencies could, virtually without risk of loss, be converted into dollars at any time was shattered. Investors, both domestic and foreign, endeavored en masse to convert dollars, as confidence in the ability of the local economy to earn dollars to meet their fixed obligations diminished. Local exchange rates fell against the dollar, inducing still further declines."
29. Radelet and Sachs (1998a), p. 13.
30. See for example LaPorta and Lopez-de-Silanes (1998).
31. Thus, authors like Sachs (1994b) argue the need for an international bankruptcy court, or equivalent, with the power to impose an automatic stay or standstill to halt the creditor grab race. Asia's experience suggests that the institutional lacuna giving rise to this socially counterproductive behavior was as much at the national as the international level. I return to this point in Chapter 5.
32. For evidence, see Eichengreen and Rose (1998) and Glick and Rose (1998).
33. An additional factor was the rebalancing of portfolios by commercial and investment banks and other institutional investors when the crisis struck. Losses on Thai investments encouraged them to sell off holdings in other Asian countries in order to rebalance their portfolios and to raise cash. The loan clauses described above provided one mechanism for doing so.
34. Goldstein (1998), p. 18.
35. See Calvo (1997).
36. Bacchetta and van Wincoop (1998) show how herding behavior that amplifies market volatility can result from incomplete information.
37. This is the explanation suggested by Yellen (1998).
38. And before regulators reclassified those assets as nonperforming.
39. A corollary is that the absence of an external deficit does not mean the absence of a crisis; past deficits, if financed recklessly, continue to confer that danger long after they have been eliminated.
40. Those few exceptions are smaller, more open economies with strong reasons for wishing to put money policy on autopilot. A currency board may be attractive to these exceptional few. But the number of countries for which this alternative is viable is

likely to be small.

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