

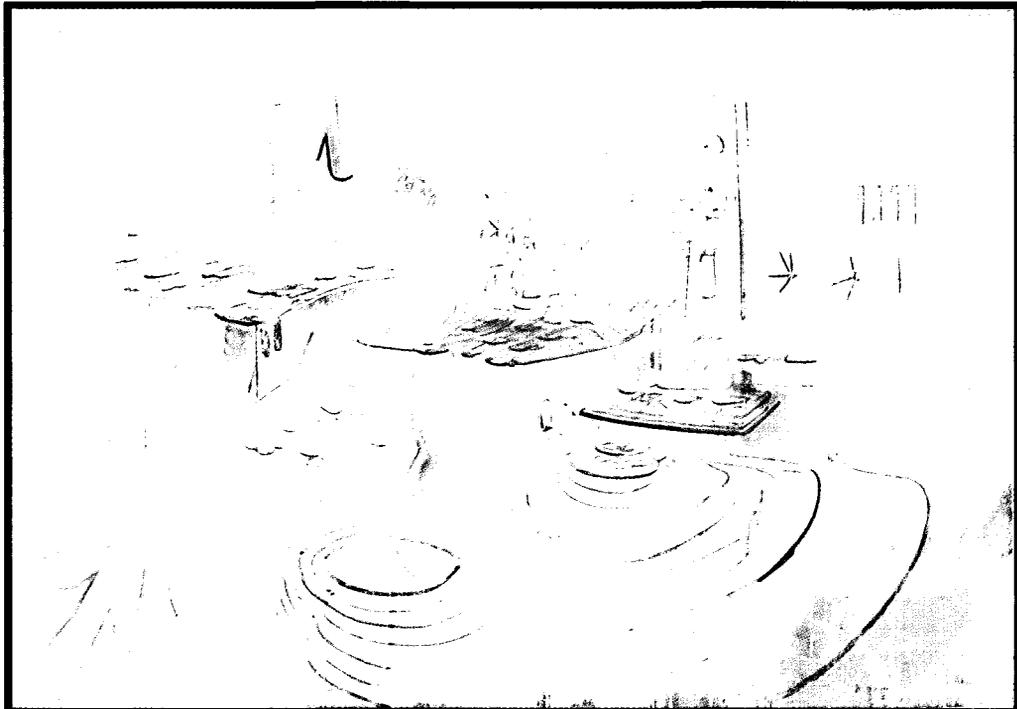


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**WORLD BANK LATIN AMERICAN  
AND CARIBBEAN STUDIES**

*Viewpoints*

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July 1998



*Guillermo F. Perry  
and Daniel Lederman*

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Financial Vulnerability, Spillover  
Effects, and Contagion:  
Lessons from the Asian Crises  
for Latin America

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*Guillermo E. Perry  
and Daniel Lederman*

*The World Bank  
Washington, D.C.*

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# SUMMARY

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This paper defines “financial vulnerability” as a high probability of a successful speculative attack against a country’s currency. In Asia, financial vulnerability was associated with a set of vulnerability symptoms. For example, “traditional” external sector vulnerabilities (appreciating real effective exchange rates, slowdowns in the rate of growth of export revenues, and high or widening current account deficits) signaled the market that a currency adjustment was forthcoming. An accumulation of short-term foreign debt in excess of international reserves invited the herd-like behavior of creditors who closed their credit lines to Asian debtors. At the same time financial authorities were perceived as unable to either implement timely devaluations (due to high unhedged foreign currency exposures in the financial and/or corporate sectors), or to defend the currency with interest-rate hikes (due to high levels of indebtedness of corporations and over-extension of credit by banks, after prolonged credit and asset-price booms).

We believe that the root cause of these “symptoms” of vulnerability was a perverse incentive structure, arising from moral hazards in domestic finance, lack of transparency in corporate governance and financial transactions, lax prudential regulation and supervision, and rigid exchange-rate regimes. This incentive structure does not always lead to excessive risk-taking by the private sector, but it did during a time of rising international capital flows in the context of ill-sequenced financial and capital account liberalization. We compare and contrast indicators of these symptoms and their root causes in Asia and Latin America during 1994–97. We reach the conclusion that financial vulnerability was greater and more generalized in the crisis-Asian economies than in Latin America.

In the second part of the paper we use the concept of financial vulnerability to help explain how the financial crises in Asia affected Latin American economies. Initially spillover effects of the Asian crises on Latin America affected only a few countries and in a modest way. In late-October, financial effects of the Asian crises spread to most countries, but they were severe only in the case of Brazil, whose authorities reacted promptly to successfully prevent contagion. The financial spillovers receded after November. Nevertheless capital flows to Latin America remain affected, and will be probably smaller and more costly in 1998 than in 1997. Furthermore, “real” effects through direct and indirect trade links are still developing. So far the strongest in several countries is a traditional terms-of-trade deterioration. We also point out that policy responses to moderate the effects of the Asian crises on current account balances and exchange rates, such as fiscal measures and increased interest rates, are contributing to a growth slowdown in the region.

The main lesson from the Asian crises is that the quality of institutions that govern private behavior, in the financial and real sectors, is essential for avoiding financial vulnerability in a world of volatile capital flows. Old lessons from earlier Latin crises, such as the importance of prudent macro-economic and debt management, were also reinforced by the Asian experiences of 1997.

# I

## INTRODUCTION

---

THERE IS ALREADY A LARGE and growing literature about the financial crises affecting several former star economic performers in Asia. Some analyses have focused on the mismanagement of the structure of foreign debt (currency composition and length of maturity), and on the mismanagement of macroeconomic policies, especially exchange rates (Dornbusch 1998). Others have focused on weaknesses (mainly of an institutional character) ingrained in the domestic financial and banking sectors of these economies (see IMF 1997b, World Bank 1998, Krugman 1998).

This paper attempts to reconcile these alternative explanations of the crises in a simple framework, where we distinguish between the causes and the symptoms of “financial vulnerability.” We define financial vulnerability as a high likelihood of a *successful* speculative attack against a country’s currency. In the first part of the paper, our contention is that financial vulnerability in Asia was mainly associated with a combination of symptoms, including credit booms and asset-price bubbles, excessive accumulation of short-term debt (especially private debt), high unhedged foreign currency exposures, and high or widening current account deficits. The Asian authorities therefore faced difficulties in permitting timely currency depreciations (because both the financial system and corporations had high,

unhedged foreign currency exposures) and in defending the exchange rate with an interest rate hike (because banks’ loan portfolios were in poor condition and corporations were highly leveraged). This situation provided a “one-sided” bet for currency speculators, who realized that the authorities would not be able to raise interest rates sufficiently to defend the value of their currencies. In some countries, macroeconomic imbalances contributed to financial vulnerability, but they did not play in general such a central a role as in previous crises in other latitudes, as in Latin America in 1982–83 and Mexico in 1994.

As we attempt to distinguish the symptoms of financial vulnerability in Asia from its primary causes, we find that in most of the Asian countries, and very especially in Korea, partial and ill-

sequenced financial liberalization in the late eighties and early nineties (a period of rapidly growing international capital flows) exposed and magnified the effects of an existing perverse incentive structure for the financial and corporate sectors. As a result of the Asian experience, institutional issues (namely, rules and their enforcement mechanisms) related to moral hazards, corporate governance, bankruptcy laws, prudential regulation and supervision, affecting both the financial and the corporate sectors, have been thrown squarely under the spotlight. Previous studies had shown that good institutions were essential for promoting financial development and economic growth.<sup>1</sup> The Asian crises now reveal that sound institutions governing the private sector are also critical for maintaining macroeconomic stability, thus adding a sense of urgency to reforming corporate and financial institutional frameworks around the globe.

Some of the Asian experiences, especially the case of Thailand, also reinforce lessons from previous crises. In particular, we were reminded of the crucial importance of prudent debt (and macroeconomic) management, of avoiding prolonged credit booms, of preventing pronounced real exchange-rate appreciations, and of maintaining some flexibility in exchange-rate management.<sup>2</sup>

In the second part of the paper we emphasize that once a crisis erupts in one country, there are multiple channels of spillover effects and contagion across countries, which may or may not be associated with financial vulnerability in the “contaminated” countries. That is, some countries that may not have been financially vulnerable at the time can suffer spillover effects from foreign financial crises, and they may even become financially vulnerable and suffer a finan-

cial crisis after they are affected by contagion. We differentiate contagion from spillover effects according to the severity of the consequences for the “contaminated” country; contagion leads to financial vulnerability and an eventual crisis, while spillover effects do not necessarily result in crisis. We look at these issues mainly from the perspective of Latin American countries, explaining why they have been in general terms resilient to contagion during the Asian crises.

We also distinguish financial channels of spillovers and contagion from real-side effects; the former operate through the capital account, while the latter operate through trade links. Financial spillover effects on Latin American countries were very modest initially, but they increased after the attack on the Hong Kong dollar (around October 22) and receded since mid-November, while real effects through direct and indirect trade links are still developing. We also discuss how and why some Latin American countries have suffered mainly through trade links, but others experienced more or less severe financial spillovers.

The rest of the paper is organized as follows: Section II provides an analytical framework of the roots of financial vulnerability in Asia. Section III provides some suggestive evidence supporting some of the propositions presented in the previous section, comparing crisis with non-crisis-Asian countries. Section IV distinguishes among several channels of spillover effects and contagion across countries. Section V discusses the effects that the Asian crises have had on Latin American countries, and section VI concludes by pointing out the new lessons that can be learned from the Asian experiences, while reminding us of the lessons of previous crises in Latin America.

PART I:  
SYMPTOMS AND ROOT CAUSES  
OF FINANCIAL VULNERABILITY



# AN INTERPRETATION OF THE ASIAN CRISES

---

WE DEFINE *FINANCIAL VULNERABILITY* as a high likelihood that an economy will suffer a successful speculative attack against its currency. Our interpretation of the financial crises affecting Thailand, Indonesia, Malaysia, the Philippines, and Korea, focuses on four factors that contributed to the emergence of financial vulnerability in these economies.

First, there was a *traditional external sector vulnerability*. Some, though not all, crisis-Asian economies had experienced real exchange-rate appreciations, which were accompanied by slowdowns in export revenues and high or widening current account deficits. Combined with the need to roll-over a large stock of short-term debt (which was high relative to reserves, as mentioned below), the high and widening current account deficits contributed to these economies' high gross borrowing requirements, thus making them highly susceptible to reversals in capital flows. In addition, the slowdown in the rate of growth of export revenues signaled that this external vulnerability would tend to increase in the near future.

Second, there was a "*roll-over*" *risk or vulnerability* in most countries that were struck by crises. High short-term external financial liabilities (plus maturing long-term debt) relative to foreign currency reserves made these Asian economies prone to an all-out speculative attack. Such a situation, where short-term obligations

exceed the level of reserves, invites "herd-like" behavior by foreign lenders, who realize that if some lenders do not roll-over a country's obligations, those who do may be left with non-performing loans.

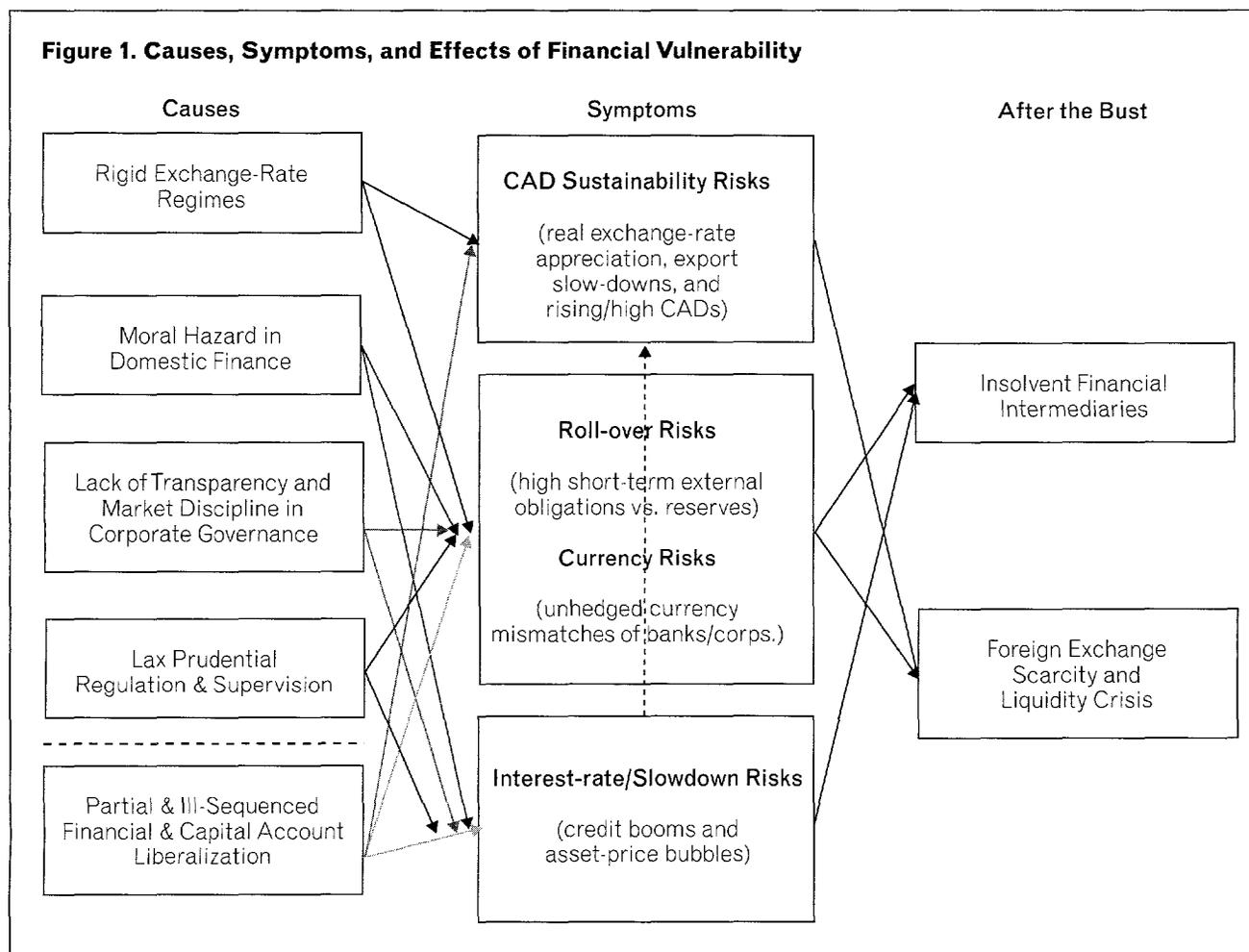
Third, there were high *currency-mismatch risks*. High, unhedged foreign currency exposures

(or mismatches) by banks and corporations reduced the ability of the authorities to devalue the currencies in a timely fashion, without straining their private sector's capacity to pay back debt denominated in foreign currencies. In turn, when the perceived likelihood of a devaluation increased, firms and banks rushed to buy foreign currency (or to hedge their exposures), thus increasing sharply the demand for foreign currency. When the depreciations finally took place, economic agents who still had high foreign currency obligations took a hard hit, thus contributing significantly to the severity of the crises.

Fourth, there was a *vulnerability of banks and corporations to interest-rate hikes and economic slowdowns*. An aspect that probably played a crucial role in exacerbating the severity of the crises, was that banks, other financial intermediaries, and corporations were highly vulnerable to both a

slowdown in activity and to an interest-rate hike, due to characteristically high levels of accumulated debt by corporations, and poor quality of the loan portfolios of banks. This excessive use of leverage by corporations and the poor health of the banks were products of prolonged credit booms—accompanied by asset-price bubbles—that had taken place in previous years. Hence the monetary authorities' ability to respond to a speculative attack against their currencies with interest-rate increases was restricted by the high level of indebtedness and the banking weaknesses. When interest rates finally increased, and the economic slowdown ensued, asset prices collapsed, and there were generalized bankruptcies in the real and financial sectors.

These four vulnerability symptoms appeared in different degrees and forms across the crisis-Asian countries. Below we present suggestive evidence about the existence of these vulnerabil-



ities in these economies, which are compared to other Asian economies that were not severely affected by financial crises, and to major Latin American economies.

However, these factors are more aptly defined as “symptoms” than as the root causes of financial vulnerability; we must explain how they came about. The key question, thus, is what were the underlying causes of the emergence of these symptoms. We present an explanation in Figure 1, that integrates several elements of the alternative explanations of the crises:

1. *Rigid exchange-rate regimes that in practice* tightly linked domestic currencies to the US dollar, created an environment in which economic agents perceived that the risks of devaluation were extremely low. Domestic economic agents, both banks and corporations, had an incentive to borrow from foreigners in foreign currency at interest rates that were lower than domestic interest rates, without covering themselves against exchange-rate risks. On the other side of the transaction stood foreign lenders that based their decisions on the presumption that governments would rescue troubled banks and corporations in times of distress. Given the precedent of the Mexican bailout of 1995, this domestic moral hazard may have been exacerbated by an expectation that governments, in turn, would be rescued by international financial institutions.  
 In addition, the *use of the US dollar as the anchor currency* led to a progressive real, effective appreciation of these Asian currencies, because the dollar was appreciating vis-à-vis other “hard” currencies, including the Japanese Yen. Consequently, some of these countries experienced slowdowns in their dollar export revenues, and widening current account deficits in the years leading up to the crises. Competitiveness problems were intensified by the depreciation of the Chinese currency on January 5, 1994, and the subsequent devaluation of the Mexican Peso on December 22, 1994. These pressures were then reflected in the deteriora-
- tion of the current account balances for all the crisis-Asian countries (Indonesia, Korea, Malaysia, the Philippines, and Thailand) during 1994–1995—see Table A1. From this point of view, Asian vulnerabilities began to emerge a few years before 1997.<sup>3</sup> Since items 2–4 (below) produced fragile banking and corporate systems, which reduced the capacity of governments to raise interest rates, the rigid exchange-rate systems in effect increased the likelihood of speculative attacks against the Asian currencies by providing a “one-sided bet” for speculators.
2. There were *moral hazards in domestic finance*, arising from implicit or explicit deposit insurance schemes, and from the general perception that the “government stood behind” banks and large corporations, which, according to this view, would not be allowed to go bankrupt. This perception led bankers and investors to over invest in real estate, stocks and other financial assets, without paying sufficient attention to the risks associated with such investments. As a result, credit to the private sector rose rapidly (especially after financial liberalization was undertaken) accompanied by the rise of asset prices. These booms were followed by the closure of financial institutions that revealed that not all financial intermediaries were going to be rescued, which led to a sell-off of assets and asset-price busts, leaving some insolvent financial intermediaries behind (Krugman 1998).
3. There was a *lack of transparency* in financial dealings, combined with *corporate governance structures* based on family-control of conglomerates, with weak minority shareholders rights. These conglomerates did not maintain consolidated balance sheets, but relied on intra-conglomerate guarantees to secure access to credit for their firms, which were also favored by government policies, and were not disciplined by market forces. The media has referred to these systems as “crony capitalism.”<sup>4</sup> This situation contributed to

the booms (and subsequent busts) of credit and asset prices by obscuring the financial situation of the private sector, thus covering up highly leveraged and unprofitable business transactions.

4. In addition, these economies suffered from *lax prudential regulation and supervision* of its banking and corporate systems, which facilitated financial transactions and investments (induced by the perverse incentive structure described above) that were not properly assessed in terms of their potential risks. This situation was aggravated by the fact that some Asian banking systems suffered from a lack of reliable information about the soundness of bank loan portfolios; for example, Table A2 shows that none of the crisis-Asian countries required banks to seek credit ratings (as of March 1997). That is, there were not only strong moral hazards, but also weak market and regulatory/supervisory discipline.
5. Credit and asset-price booms, and currency exposures, were fed by *partial and ill-sequenced financial and capital account liberalization* programs that were implemented in several Asian countries during the late 1980s and early 1990s.<sup>5</sup> In several Asian countries, capital account liberalization took the form of easing restrictions on external borrowing by domestic banks and/or corporations, while at the same time restricting foreign entry and ownership (foreign direct investment, FDI) in the domestic banking sector. Appendix 1 contains an inventory of the controls prevailing in Asia and Latin America prior to crises of 1997, focusing on the policies that imposed restrictions on foreign ownership and direct investments in the financial-banking sectors, and on domestic credit operations in foreign currency. A quick read

reveals that while some Latin countries (Brazil, Chile, Colombia) discouraged short-term capital inflows, some Asian countries, especially Indonesia, Malaysia, Thailand, and Korea discouraged FDI and long-term borrowing. This particular sequencing of financial and capital account liberalization adopted in these Asian countries seems to be a good recipe for problems, especially in the presence of moral hazard and weak prudential regulation and supervision.

The ill-sequenced liberalization of the capital account exposed and magnified the effects of the perverse incentive structure described in points 1 to 4 above. Such perverse incentives had been present for a long time, but had not led to financial crises of the magnitudes of 1997, although they must have created microeconomic inefficiencies and vulnerabilities. Partial financial liberalization happened precisely at the time that international capital flows were blooming. Thus, the ill-sequenced liberalization of the capital account facilitated the credit booms by opening a channel for cheap (short-term) external funds to finance domestic investment (directly or through the protected domestic financial system), which aggravated the tendency to accumulate unhedged foreign liabilities (by both banks and corporations), increased rapidly the accumulation of short-term external liabilities, and contributed to the process of currency appreciation as foreign funds flowed into these economies.

As mentioned, Figure 1 presents a schematic illustration of the dynamics of the aforementioned causes of financial vulnerability, its symptoms, and two characteristic maladies experienced by economies after the economic downturns. As reflected by the intersecting arrows, it may be difficult to assert unequivocally that one of the causes dominated in a given instance, as the symptoms of a gestating crisis may result from different combinations of these factors.

# SUGGESTIVE EVIDENCE OF THE SYMPTOMS OF FINANCIAL VULNERABILITY

REGARDING THE SYMPTOMS leading up to the crises, here we present some suggestive evidence showing the emergence of the symptoms described in Figure 1, for the crisis-Asian countries, compared to other Asian countries. Later, in section V, we assess the extent to which Latin American economies were financially vulnerable by 1997, in terms of the same performance indicators.

- **Real appreciation and its consequences**

Figure A1 shows that the real effective exchange rates (REERs) of Asian economies appreciated, especially between April 1995 and mid-1997.<sup>6</sup> Only Korea seems to have experienced a somewhat stable REER during this period. The Philippines experienced the greatest appreciation among Asian countries, but it also did not experience a slowdown in the growth rate of export revenues, and its current account deficit had remained stable at around 4.5 percent of its GDP since 1994. In contrast, as shown in Figure A2, Malaysia, Thailand, and Korea did experience notable slowdowns of export growth during the first quarter of 1996, a year that ended with a record current account deficit for Korea, and a comparatively high deficit in Thailand—see Table A1. Malaysia did not experience a deterioration of its current account deficit in 1996, which actually declined from 10 percent of its GDP in 1995 to 5 percent

in 1996; nevertheless its current account deficit remained high for international standards.

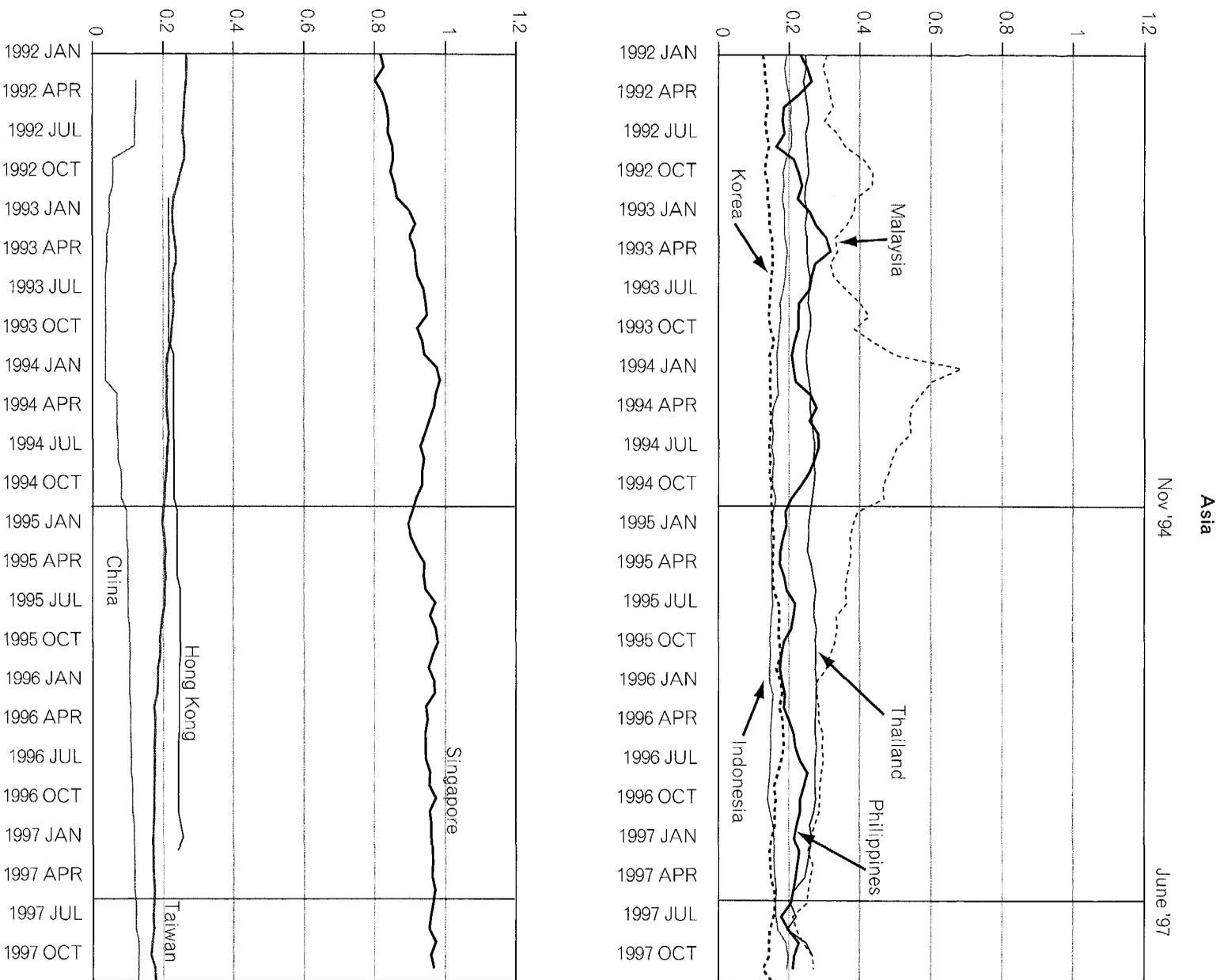
- **Credit booms**

Figure A3 shows the evolution of bank credit to the private sector in real terms, during 1992–1997. By early-1997, the crisis economies (Indonesia, Korea, Malaysia, the Philippines, and Thailand) had experienced increases in bank credit to the private sector in amounts exceeding by 50 percent or more the level observed in late-1993. In contrast, the rise of credit in China, Hong Kong, and Taiwan was clearly more moderate than in the crisis-Asian economies.

- **Asset-price bubbles**

*The Boom:* Figure A4 shows the stock market price indexes in US dollars for the five crisis-Asian economies during the 1990s. Between

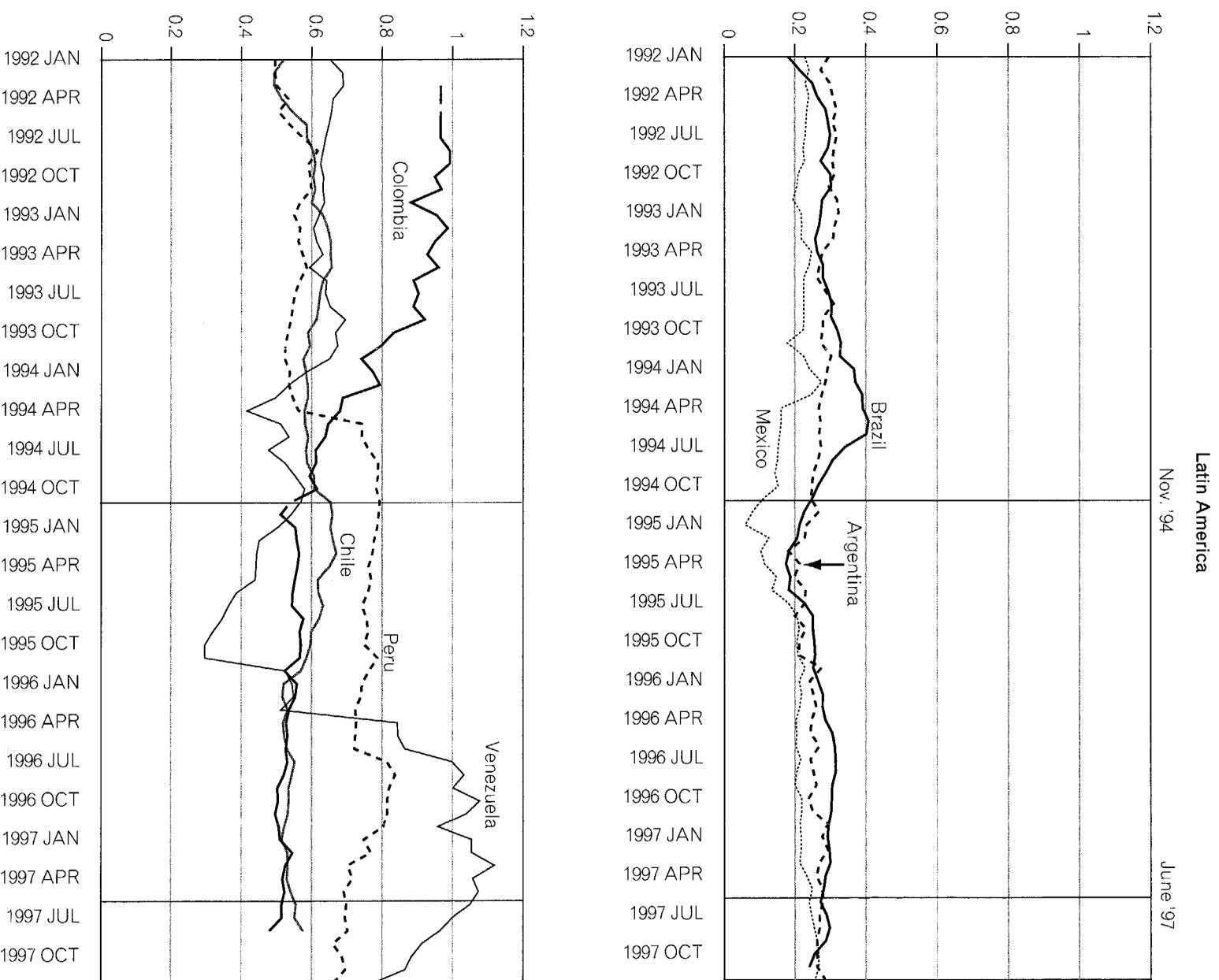
**Figure 2. Total Reserves minus Gold over M2 in Asia and Latin America, 1992-1997**



Source: International Financial Statistics database, International Monetary Fund.

Note: Total reserves minus gold is the sum of the U.S. dollar value of monetary authorities' holdings of SDRs, reserve position in the Fund, and foreign exchange.

**Figure 2. (cont.) Total Reserves minus Gold over M2 in Asia and Latin America, 1992-1997**



Source: International Financial Statistics database, International Monetary Fund.

Note: Total reserves minus gold is the sum of the U.S. dollar value of monetary authorities' holdings of SDRs, reserve position in the Fund, and foreign exchange.

**Table 1. International Bank Loans and Foreign Currency Exposure**  
(End—June 1997)

	<i>Debt over Reserves by Maturity and Sector</i>									
	<i>Maturities</i>					<i>Sectors</i>				
	<i>Total</i>	<i>Up to and including one year</i>	<i>Over one year up to two years</i>	<i>Over two years</i>	<i>Un-allocated</i>	<i>Banks</i>	<i>Public</i>	<i>Non-bank private</i>	<i>Un-allocated</i>	<i>Total</i>
<i>Crisis Asia</i>										
Indonesia	2.9	1.7	0.2	0.8	0.2	0.6	0.3	2.0	0.0	2.9
Malaysia	1.1	0.6	0.0	0.3	0.1	0.4	0.1	0.6	0.0	1.1
Philippines	1.4	0.8	0.0	0.4	0.2	0.6	0.2	0.7	0.0	1.4
South Korea	3.0	2.1	0.1	0.5	0.4	2.0	0.1	0.9	0.0	3.0
Thailand	2.2	1.5	0.1	0.5	0.1	0.8	0.1	1.3	0.0	2.2
<i>Non-Crisis Asia</i>										
China	0.5	0.2	0.0	0.2	0.0	0.2	0.1	0.2	0.0	0.5
Hong Kong	3.3	2.7	0.1	0.4	0.1	2.1	0.0	1.1	0.0	3.3
Singapore	2.6	2.4	0.0	0.1	0.0	2.2	0.0	0.4	0.0	2.6
Taiwan	0.3	0.2	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.3
<i>Latin America</i>										
Argentina	2.3	*1.2	0.1	0.8	0.2	0.4	0.5	1.3	0.0	2.3
Brazil	1.3	0.8	0.0	0.4	0.1	0.4	0.3	0.6	0.0	1.3
Chile	1.0	0.4	0.0	0.5	0.0	0.2	0.1	0.8	0.0	1.0
Colombia	1.7	0.7	0.1	0.9	0.0	0.5	0.3	0.9	0.0	1.7
Mexico	2.6	1.2	0.1	1.0	0.3	0.5	0.9	1.2	0.0	2.6
Peru	0.8	0.5	0.0	0.2	0.0	0.2	0.1	0.5	0.0	0.8
Venezuela	0.8	0.5	0.0	0.2	0.0	0.2	0.1	0.5	0.0	0.8

Source: Bank for International Settlements (1998); Reserves from IMF as of end-June 1997. Data comes from BIS-reporting banks only.

\* The data on reserves does not include dollar deposits held by subsidiaries of BIS-reporting banks.

June 1992, and January 1994, most Asian countries experienced rapid increases in stock prices, which was followed by a downturn in early January, and a subsequent period until 1996, when most stock markets fluctuated within a price range that was still much higher than when the rise began in 1992. During the boom period (June 1992–January 1994), stock prices in Thailand increased by over 130 percent; in Malaysia by over 110 percent; in the Philippines and Indonesia by over 85 percent; and in Korea by over 60 percent. Of the non-crisis-Asian economies, only Hong Kong experienced a rise of stock prices of similar magnitude.

*The Bust:* The decline of the Thai stock market was already underway at the beginning of 1996, and Korea's decline began by April 1996, as shown in Figure A5. The stock markets of Indonesia, Malaysia, and the Philippines muddled through 1996, without apparent drastic down-

turns. However, after July 1, 1997, all of these Asian markets plunged; Hong Kong's decline began after October 20.

#### • Foreign currency exposure and official reserves

Figure A6 shows that the net foreign asset position of Thai banks suffered a continuous deterioration since early-1994. Korea's deterioration began in November 1994, and the Philippines in early 1995. In contrast, Indonesia did not experience a noticeable deterioration of the foreign asset position of its banking system, but some deterioration may have occurred after the Thai devaluation in July 1997. Figure A6 also shows that among the non-crises Asian countries only Singapore experienced a noticeable deterioration of its banks' foreign asset position, beginning after November 1994.

These trends in net foreign asset positions should be juxtaposed against the trends in the levels of international reserves to assess the capacity of the monetary authorities to support the banks in case of a run on their foreign currency liabilities. Figure 2 shows that Indonesia, the Philippines, Korea, and Thailand maintained relatively low and stable ratios of official reserves to M2, despite the seeming deterioration of their banking systems' net foreign asset positions. Malaysia experienced greater volatility of its reserves-to-M2 ratio during 1994, but declined to the level of its Asian partners in the years leading up to 1997. Singapore held very high reserves to M2 ratios that covered well the deterioration of its banking sector's net foreign assets position.

• **Short-term external liabilities**

It should be noted, however, that these data on the foreign asset positions of the banks may underestimate the extent of the foreign currency exposure of the five crisis-Asian economies, where private corporations are known to have been highly exposed in terms of their accumulated foreign liabilities. Table 1 presents data on the level, maturity structure, and allocation of foreign debt across sectors in the five crisis-Asian

economies. This table shows the corresponding ratios of debt to foreign reserves as of end-June 1997. It is remarkable that the bulk of foreign debt accumulated in the crisis economies had maturities of less than one year. In Indonesia, the ratio of short-term debt to reserves was 1.7, in South Korea this debt was more than twice the level of international reserves, and Thailand's was slightly higher than its reserves. Only Malaysia seems to have had an exposure to foreign liabilities with maturities of less than one year significantly below the level of reserves. While all countries had a substantial accumulation of foreign debt in the financial and corporate sectors, there were some differences across countries. South Korea's foreign debt seems to have been due mostly to its banking sector, while Indonesia's was due primarily to its non-banking private sector, as shown in Table 1.

The net foreign asset position of the banks and the high levels of foreign debt in these economies do not necessarily mean that all these exposures were unhedged. Documenting this would require information on the positions taken by the banks and the private sector in derivatives markets, which is not readily available. However, the fact that these economies were driven into severe financial crises may indicate that an important share of these exposures were unhedged.



PART II:  
THE EFFECTS OF THE  
ASIAN CRISES ON LATIN AMERICA



# I V

## THE CHANNELS OF SPILLOVER EFFECTS AND CONTAGION

**SPILLOVER EFFECTS AND CONTAGION** are different issues from vulnerability. A vulnerable country can experience a crisis, but some countries that are not vulnerable can suffer the consequences of another's misfortunes, and can even become vulnerable once other dominoes have fallen. Figure 3 shows the complex relationships among various channels and consequences of spillover effects and contagion, and the policy responses that they may provoke. The following discussion explains the various items in Figure 3.

### A. FINANCIAL EFFECTS

1. **Informational shocks.** News about an erupting crisis in one country may change the perception of international investors about the profitability of investing in other emerging markets. As elaborated in Calvo (1995), when investors do not have sufficient information to distinguish among the fundamentals of different emerging markets, a currency crisis in one country can lead to speculation against other emerging market currencies, even when the financial conditions are different. When investors have sufficient information, an informational shock associated with a financial crisis in one country may lead investors to reassess their perceived risks of countries with similar vulnerabilities. Below we discuss two types

of effects of informational shocks—flight to safety and demonstration effects—that differ according to their impact on economies that are not similarly vulnerable to those suffering a financial crisis.

- **Flight to safety under uncertainty.** Domestic and foreign investors may prefer to move their funds into financial safe-havens during periods of high market uncertainty or volatility. Figure A7 provides a measure of the volatility or uncertainty associated with several emerging stock markets in Asia and Latin America; it shows a 20-day moving variation coefficient of the stock price indexes denominated in US dollars. It is noteworthy that the volatility of these markets increased markedly in

Asia during 1997, especially after July. Similarly, the volatility of major Latin emerging markets increased in the aftermath of the tequila crisis at end-1994, and again in the second half of 1997. The corresponding flight to safety is reflected in Figure A8, which shows the evolution of the yield of the 10-year US Treasury bond in the 1990s. It is evident that the yield fell after major shocks, including the invasion of Kuwait, the onset of the tequila crisis, the beginning of the Thai crisis, and the crash of the Hong Kong stock market in October 1997, which reflects increasing US treasury bond prices during periods of uncertainty. In this case, all “emerging markets” suffered from the investors inclination to move funds into US treasury bonds.

- **Demonstration effects.** This effect implies that economies that are similarly vulnerable will suffer from attacks against their currencies. Below we discuss the stock market reactions in Asia and Latin America after the Thai devaluation of July 2, 1997. Figure A5 clearly shows that there was an intra-Asia contagion effect, that could be denominated the “Thai drag effect,” a tribute to the fall of Asian stock market prices in July 1997, which was led by the Thai devaluation.
2. **Institutional investors and the cash-in effect.** When clients withdraw their investments in diversified portfolio funds, the fund managers must then liquidate portions of their portfolios. In doing so, managers may prefer to liquidate fund investments in assets that have not yet been affected by the financial crises, especially from those that seem more vulnerable—partly a demonstration effect—but that have not yet fallen, thus offering opportunities to reduce portfolio risk while enhancing the funds’ liquidity position. The cash-in effect would be

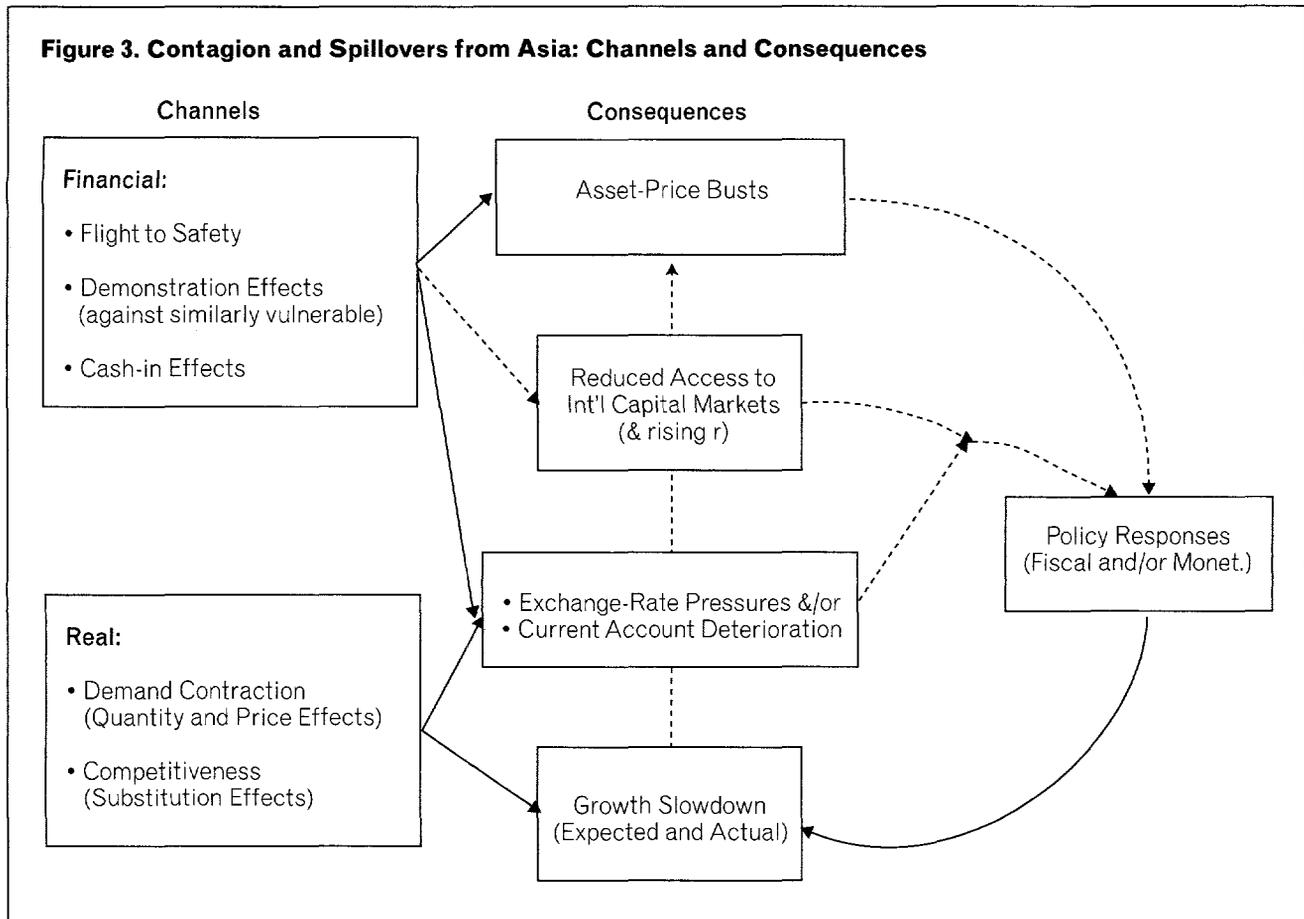
particularly important in relation to the investment of so-called “dedicated” funds, that specialize in emerging markets, perhaps even regional emerging market funds.

Notice that these financial effects would cause both a fall in asset prices and capital outflows from emerging markets, leading to upward pressures on exchange rates, declines in stock market prices, and reduced access to international capital markets for affected economies. Table A3 shows the evolution of the monthly average of gross capital flows to developing countries during 1997. Developing countries, including Latin American countries experienced a sharp reduction in gross private capital flows during the last few months of 1997. Whether these financial effects, especially the reduced access to international capital, will continue to be felt through 1998, and beyond, remains an open question. However, some reduction in capital inflows to developing countries compared to the levels of 1996 can be expected in the near future (World Bank 1998b).

## B. INTERNATIONAL “REAL” EFFECTS

We can distinguish between the following two types of real-side effects:

1. **Demand contraction** in the economies suffering from the financial crises may lead to declines in the quantities of imports in the crisis countries, and to declines in world prices of some commodities. In other words, Asia may be economically large enough to affect world prices, especially for commodities that they import or export heavily. However, it should be noted that the corresponding declines in commodity prices, such as oil, copper, wheat, iron ore, and others, may produce an increase in the financial vulnerability of countries already running relatively high current account deficits, even if they are not expected to have a significant direct impact on the rate of (real) economic

**Figure 3. Contagion and Spillovers from Asia: Channels and Consequences**

growth. In addition, the Asian crises may affect indirectly overall exports of Latin American countries due to its effect on the growth rates of advanced economies—an expected slowdown of approximately 0.4 percentage points in the growth of GDP, according to the IMF (1997).

2. **A competitiveness or substitution effect** due to real depreciation of the currencies of suffering economies. This effect will be felt strongly by countries that: (i) export goods to Asian markets with domestic competitors; (ii) countries that import goods from Asian producers, that compete with domestic industries; (iii) countries that export goods that compete with Asian exports in third country markets.

The combination of financial and real contagion channels led to an Asian domino effect. After the crisis erupted in Thailand, financial contagion

effects were very strong as there were similar symptoms of financial vulnerability in the other regional economies. The Thai devaluation of July 1997, created strong competitiveness pressures on its Asian neighbors and increased their vulnerability. The currencies of Malaysia, Indonesia, and the Philippines then came under attack. As the crises deepened in each country, both the financial contagion and the real-side spillover effects led to a vicious circle of currency depreciations, economic contraction, and declines in other asset prices throughout Asia. The symptoms of financial vulnerability in Korea were evident since at least 1996, and were subsequently strongly affected by the events surrounding its neighbors, which precipitated Korea's crisis. In turn, the fall of Korea affected the other Asian economies. All this happened against the backdrop of the Japanese economic slowdown in 1996–97, and the weaknesses of its own financial system.

The degree to which economies were and will be affected by the Asian financial crises

depends, of course, on their policy responses. For example, authorities may wish to avoid widening current account deficits, in the context of uncertainties about access to international capital markets, through different combinations of currency depreciation (leading to some increases in infla-

tion rates) and monetary and fiscal contraction (leading to lower growth rates). Some countries that have suffered strong speculative attacks have avoided a crisis (though at the cost of reduced growth) through swift policy responses, as witnessed by Hong Kong and Brazil.

# V

## LATIN AMERICA

## BEFORE AND DURING

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## THE ASIAN CRISES

# V

IN THIS SECTION, we first examine the degree of financial vulnerability in Latin American countries in the period prior to the 1997 crises. We then examine the spillover effects of the Asian crises on these economies during 1997 and beyond.

### FINANCIAL VULNERABILITY IN LATIN AMERICA COMPARED AND CONTRASTED WITH ASIAN COUNTRIES

In order to analyze the effects of the Asian crises on the Latin American economies, it will be useful to assess whether Latin American countries showed similar symptoms of financial vulnerability in the period preceding the Asian debacle of 1997. As explained below, the main differences between Latin America and crisis-Asian countries appear in the degree of foreign-currency exposures and the health of the financial systems.

#### • **Real appreciation and its consequences**

Brazil's REER appreciation actually took place mostly between mid-1994 and early-1995, but its merchandise export revenues remained virtually stable between January 1996 and January 1997—see Figures A1 and A2. There was much REER appreciation in Chile, Colombia, and Venezuela between 1996 and 1997. The growth of Chile's export revenues slowed between October 1995

and October 1996, perhaps due to a fall of the price of copper. Venezuela's export revenues did not experience a significant slowdown until early 1997, when the price of crude oil began to fall.<sup>7</sup> Colombia's export revenues did not show an apparent slowdown during 1994–1997. In contrast to some of the crisis-Asian economies (Malaysia, Thailand, Korea), the apparent lack of a systematic slowdown in export revenues in Latin America in the face of some REER appreciation, might be explained partially by a variety of factors: (i) the performance of their main export markets in previous years (i.e., the US economy has been booming while Japan has been in recession); (ii) by a higher elasticity of export and import volumes in Asia with respect to exchange-rate variations (which may be explained by the fact that Latin American countries depend more heavily on the export of commodities rather than manufactures); and, maybe, (iii) by higher productivity growth in Latin America during the last few years. Also, Latin American countries did not experience as high current account deficits as Thailand or Malaysia after 1994 (with the exception of Peru in 1995). However, it is clear that

there has been a trend towards deterioration of current account deficits in Latin American countries during 1995–96, except for the cases of Mexico, Peru, and Venezuela.

#### • Credit booms and asset prices

In contrast to the crisis-Asian countries, the major Latin American countries, except Peru, had not experienced strong credit booms in recent years. In particular, Argentina, Brazil, Mexico, and Venezuela actually experienced slowdowns in credit growth after the Mexican crisis of 1994, as seen in Figure A3. Also, asset prices (proxied by stock market prices in US dollars) had increased by less than in Asian countries in most Latin American countries, with the exceptions of Brazil and Peru. These two countries actually experienced more rapid increases in their stock prices than the crisis-Asian economies between 1992 and 1994, and their rise resumed in mid-1995 (after the Mexican crisis) and continued until mid-1997. It should be pointed out, however, that both of these economies were coming out of periods of high inflation, which may have led to a fast re-monetization of these economies, and to a fast growth of their financial sectors.

#### • Foreign currency exposure and official reserves

There is also evidence that some Latin American economies had improved the net foreign asset position of their banking sectors after facing the “tequila” crisis in late 1994 and 1995, especially Chile, Argentina, and Mexico, as shown in Figure A6. By June 1997, only Brazil had a level of net foreign assets in its banking sector comparable to the Asian economies that suffered financial crises. Colombia and Peru had shown a trend towards deterioration of the net foreign asset position of banks before the onset of the Thai crisis, but these figures are still better than they were in some of the crisis-Asian countries.

Another important difference is that Latin American economies had higher reserves-to-M2 ratios. For example, Peru had a ratio of over 0.7

in June of 1997. Only Argentina, Brazil, and Mexico had reserves-to-M2 ratios below the 0.5 mark, but still their ratios were slightly higher than those of Indonesia, Malaysia, Thailand, and the Philippines—see Figure 2. In the case of Argentina, these figures do not include the repo agreement between its Central Bank and foreign private banks that was negotiated after the 1995 crisis (see below), and thus underestimate the foreign currency reserve coverage this country had in 1997.

In addition, bank restructuring, including significant foreign entry, and significant improvements in prudential regulation and supervision were implemented after the 1982–83 in Chile and Colombia, and in the early nineties in Peru. Upgrades of the supervisory frameworks were undertaken in all countries after the 1994–95 financial crises in Argentina and Mexico, which led to healthier financial sectors than what existed in the crisis-Asian countries in 1997.

The fact that most Latin American countries (except Argentina and Brazil) have had flexible exchange-rate systems during recent years suggests that the prevalence of unhedged currency mismatches in the corporate sector may not be as pronounced in Latin America as it was in Asia. In some highly dollarized economies, however, a high share of lending through their domestic financial sectors takes place in foreign currency, suggesting the need for closer surveillance.<sup>8</sup> Other countries, such as Chile, Colombia, and Brazil, have been actively discouraging short-term foreign indebtedness of their corporate sectors through taxes and reserve requirements.<sup>9</sup>

#### • Short-term external liabilities

Although the data on the debt structure of developing countries reported by the Bank for International Settlements (BIS) is not as accurate as would be desirable, available evidence indicates that most Latin American countries did not have high ratios of short-term debt to reserves when contrasted with their Asian counterparts. Table 1 indicates that by end-June 1997, only Mexico

and Argentina had short-term debt (with maturity of less than one year) to reserves ratios above one, but still lower than Thailand, Indonesia, and especially Korea.<sup>10</sup> Also, most Latin American countries (especially Argentina, Mexico, and Brazil) had improved significantly the maturity structure of their external public debt through very active debt management policies during the nineties.

In synthesis, Latin American economies did not show strong symptoms of rising financial vulnerability between 1994 and 1997, when contrasted to the crisis-Asian countries. In particular, their financial sectors were in much better shape, due to the avoidance of credit booms, to past and recent improvements in prudential regulation and supervision, and to recent bank restructuring in some countries. Though some other indicators of vulnerability were apparent in some Latin American countries, they were not, in general, as severe as those of their Asian counterparts, and therefore, they did not experience severe contagion (demonstration) effects, as shown below. However, Latin markets suffered spillovers from the Asian financial crises, and may continue to feel the consequences in the near future. Overall, such effects may reduce Latin America's growth rate in 1998 by over one percentage point, as discussed below.

## THE DYNAMICS OF SPILLOVERS FROM THE ASIAN CRISES

### • Dynamics during July 1–October 21

Figure 4 shows that the stock markets in Brazil, Chile, and Peru immediately felt the effects of the Thai crisis, which was punctuated by the *baht* devaluation of July 2, though in a very modest way when contrasted to the crisis-Asian countries. Other Latin stock markets experienced declines only in the very short-run. Our interpretation of these events is that Chile and Peru were immediately affected by the turmoil in Asia, because they are the Latin American economies that have the most significant trade links with that region, and thus were expected to suffer from

the demand contraction and substitution effects to a greater extent than other regional economies—Table 2 shows the share of total exports that go to the developing countries of Asia. Moreover, both economies had relatively high current account deficits—see Table A2—and therefore the expected loss of export revenues may have been expected to be accompanied by higher borrowing requirements from abroad, if no policy responses were to be implemented. Brazil was also immediately affected by the *baht* devaluation and the ensuing exchange-rate depreciations in Asia, because of its similar level of the current account deficit, which is symptomatic of its real exchange-rate appreciation that has been built-up since mid-1994, its well-known problems of fiscal sustainability, and its considerable trade links with Asia.

### • Dynamics during October 21–November 14

As shown in Figure A9, the fall of Hong Kong's stock market during October 22–24 was accompanied by stock market declines in the US, Japan and the UK, thus reflecting a worldwide reassessment of future growth prospects for the world economy. Figure 4 shows that most Latin American stock markets were severely affected during this period, though there were significant differences among them.

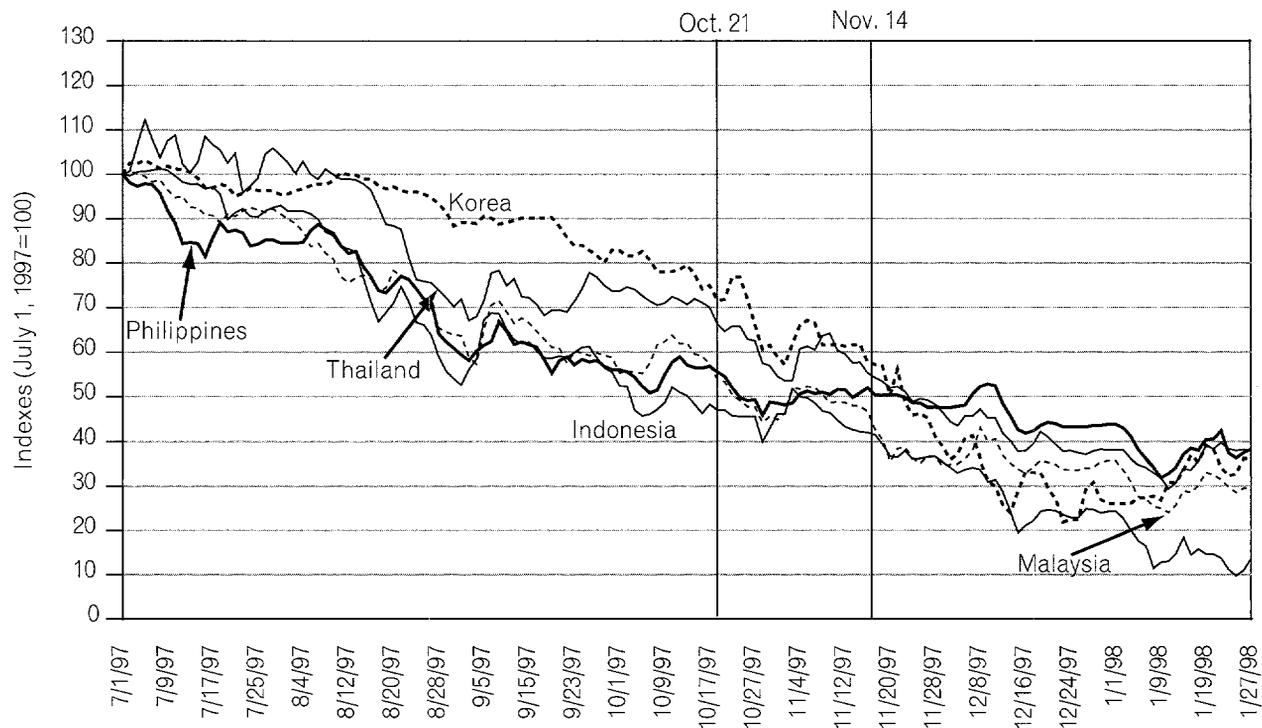
The deepest falls took place in Brazil and Argentina. Brazil's currency, the *real*, came under strong attack and gross international reserves declined by about US \$9 billion in a few days. The Brazilian authorities responded swiftly to these developments, initially by doubling overnight nominal interest rates to over 40 percent per annum. On November 7, the government complemented its interest-rate defense with an announcement of an emergency fiscal adjustment program, which, as a whole, was projected to improve the primary surplus by about 2.5 percentage points of GDP. This package was approved by the Congress (with some amendments which did not alter the aggregate fiscal effect) by mid-December. Moreover, the legislature also responded positively to President

**Figure 4. Stock Price Indexes in Latin America and Crisis Asia, July 1997–January 1998**



Source: Datastream, Banker's Trust Economics and Strategy Group.

**Figure 4. (cont.) Stock Price Indexes in Latin America and Crisis Asia, July 1997–January 1998**



Source: Datastream, Banker's Trust Economics and Strategy Group.  
 Note: The scale is different from the Latin American markets' scale.

**Table 2. Regional Export Structure in Latin America and Asia**

(percentages of exports to developing Asia)

	1994	1995	1996
Argentina	8.4	11.0	10.9
Brazil	10.4	10.8	12.7
Chile	15.7	16.4	17.0
Colombia	1.6	2.3	1.0
Mexico	0.7	1.2	1.3
Peru	16.7	16.9	19.1
Venezuela	0.5	0.5	0.6
China	40.3	40.0	37.3
Hong Kong	45.6	46.6	47.2
Indonesia	29.4	32.2	26.8
Korea	32.2	35.1	37.8
Malaysia	44.2	43.8	44.4
Philippines	22.7	25.8	25.0
Singapore	50.4	51.4	51.3
Taiwan	38.2	40.9	40.8
Thailand	34.3	36.0	36.4

Source: Direction of Trade Statistics database, International Monetary Fund.

Note: Developing Asia includes China and India.

Cardoso's call to accelerate the consideration of constitutional reforms to modernize public administration and the social security system, which would be crucial in strengthening the public finances on a lasting basis.

Argentina was also attacked after the fall of Hong Kong, presumably because of its currency board exchange-rate system, and its close commercial ties with Brazil (Argentine stock market prices followed closely the movement of their Brazilian counterparts). Initially, interest rates increased markedly, but, in contrast to the developments after the tequila crisis, there was no significant deterioration of its international reserve position. Moreover, Argentine bank deposits continued to grow, albeit with increased dollarization. Interest rates subsequently declined somewhat, and by early December, Argentina was the first developing country to have regained access to the dollar bond market.

Latin American countries with more flexible exchange-rate arrangements, such as Mexico, Chile, Colombia and Peru, absorbed the external shocks by some depreciation of their currencies and some increases in interest rates—Figure 5 shows the evolution of Latin American nominal exchange rates during July 1997–January 1998. Mexican stock prices experienced initially a drop as severe as those in Brazil and Argentina, but they showed afterwards the fastest recovery, after the exchange rate depreciated by about 7 percent in October 27, 1997. Venezuela also experienced a sharp drop in stock prices, but its currency remained relatively stable during this period, at the expense of a significant loss of reserves. The declining trend of Chile and Peru stock market price indexes accelerated somewhat. The smallest decline in stock prices during this period took place in Colombia, where the authorities had facilitated a nominal devaluation of the currency of 16 percent between July 1 and October 21, 1997.

#### • Dynamics after November 14

The immediate financial spillovers discussed above receded somewhat since mid-November, but international real effects have been increasingly felt and recognized by the capital markets. Interest rates in Argentina and Brazil have fallen a bit since November, and their stock prices showed some recoveries since that time. In contrast, Chile, Peru, and Venezuela experienced additional significant falls in their stock prices between mid-December and January—see Figure 4. These countries are perhaps the most severely affected by falls in the prices of copper (Chile and Peru), oil (Venezuela) and other commodities. More recently, Mexico and Colombia, also oil-producing countries though not as dependent on this commodity for their export revenues, have also experienced downward pressures on their stock markets. Chile, Colombia, and Mexico experienced further depreciations of their currencies during January, as shown in Figure 5. The Chilean monetary authorities reacted to these exchange-rate pressures in January 7, by raising sharply interest rates, which led to some appreciation of the Chilean peso in late-January.

Hence, it seems that Latin American countries that were expected to suffer the most from real-side spillovers, also suffered deteriorations in asset prices (exchange rates and stock prices) during the first month of 1998.

### SUMMARY OF THE EFFECTS OF THE ASIAN CRISES ON LATIN AMERICA

Although the impact of the Asian crises on Latin American countries has been relatively limited so far, prospects for growth in the region have been revised downwards. Our projections for economic growth in Latin America before and after the Asian crises are shown in Table 3. These projections assume that there will be no further shocks in the international markets during 1998.

As shown, we now expect that the region will grow by 3.1–3.5 percent in 1998, compared to 5.2 percent in 1997. Some of the slowdown between 1997 and 1998 was to be expected even without the crises in Asia (as reflected in our pre-crisis projection of 4.4 percent growth for the region), given the fact that the region (excluding Brazil) recorded in 1997 its fastest rate of economic growth in more than a decade. The rest of the slowdown (the difference between 4.4 and 3.1–3.5 percent) would be due to the Asian crises, plus other unanticipated and unrelated factors, such as the weather phenomenon known as *el Niño* and exogenous developments in the international oil market (additional to the crisis itself), and also to the authorities' response to the new situation.

The impact of Asian crises will be partly due to real effects, especially through reduced commodity prices and lower demand for exports by Latin America's trading partners, plus some lingering financial effects in the form of reduced access to international capital markets (and higher spreads). In addition, Latin American authorities have responded and are responding to the changed international economic environment with policies that further reduce the rate of economic activity in the short-run, as they are combating both the pressures towards increased cur-

**Table 3. Macroeconomic Projections before and after the Asian Crises**

	<i>Before</i>			<i>After</i>	
	1997	1998	1999	1998	1999
<b>GDP Growth Rate (percent)</b>					
Argentina	8.4	5.5	5.5	5.0	5.5
Brazil	3.0	3.0	4.5	0.5-1.5	3.0
Chile <sup>1</sup>	7.1	6.5	6.0	5.0	6.0
Colombia	3.2	4.5	4.0	4.0	3.5
Mexico	7.0	5.5	5.2	4.8	4.6
Peru	7.5	6.0 <sup>2</sup>	6.0	4.9	5.5
Venezuela	5.1	4.5	5.0	3.5	4.0
Mean	4.4	4.1	4.5	3.7-3.8	4.3
GDP-weighted mean	5.2	4.4	4.9	3.1-3.5	4.2
<b>Inflation (Dec.-Dec. change in CPI)</b>					
Argentina	0.5	2.5	2.6	2.0	2.5
Brazil	7.9	8.0	8.0	5.8	4.7
Chile	5.5	5.0	5.0	5.5	5.0
Colombia	17.6	17.0	15.5	18.0	17.0
Mexico	15.7	13.0	11.0	14.0	12.0
Peru	8.2	7.5	6.0	7.5	5.0
Venezuela	37.6	25.0	15.0	35.0	30.0
Mean	10.0	8.7	6.9	9.2	7.5
GDP-weighted mean	10.8	9.7	8.1	9.7	8.1
<b>Current Account Balances (as percentages of GDP)</b>					
Argentina	-3.7	-3.3	-3.0	-3.9	-3.7
Brazil	-4.1	-4.9	-4.2	-3.7	-3.9
Chile	-4.0	-4.3	-3.5	-5.9	-5.0
Colombia	-5.9	-4.3	-4.2	-5.2	-4.4
Mexico	-1.8	-2.8	-3.3	-2.6	-2.9
Peru	-5.1	-5.2	-4.9	-5.5	-5.1
Venezuela	6.9	3.0	2.7	1.5	1.0
Mean	-5.1	-4.9	-4.5	-5.1	-4.6
GDP-weighted mean	-3.1	-3.6	-3.4	-3.5	-3.5
<b>Non-Financial Public Sector Balances (as percentages of GDP)</b>					
Argentina	-1.6	-1.0	-0.7	-1.2	-1.0
Brazil <sup>3</sup>	-5.9	-5.2	-4.4	-5.5	-4.1
Chile	1.8	2.0	2.0	1.0	0.9
Colombia	-3.3	-3.4	-2.4	-3.6	-3.2
Mexico	-0.5	-1.6	-1.8	-1.6	-1.1
Peru	-0.3	-0.6	0.0	0.1	0.0
Venezuela	1.8	1.0	1.7	-3.0	-2.5
Mean	-1.3	-1.5	-1.0	-1.9	-1.5
GDP-weighted mean	-2.7	-2.6	-2.2	-3.1	-2.3

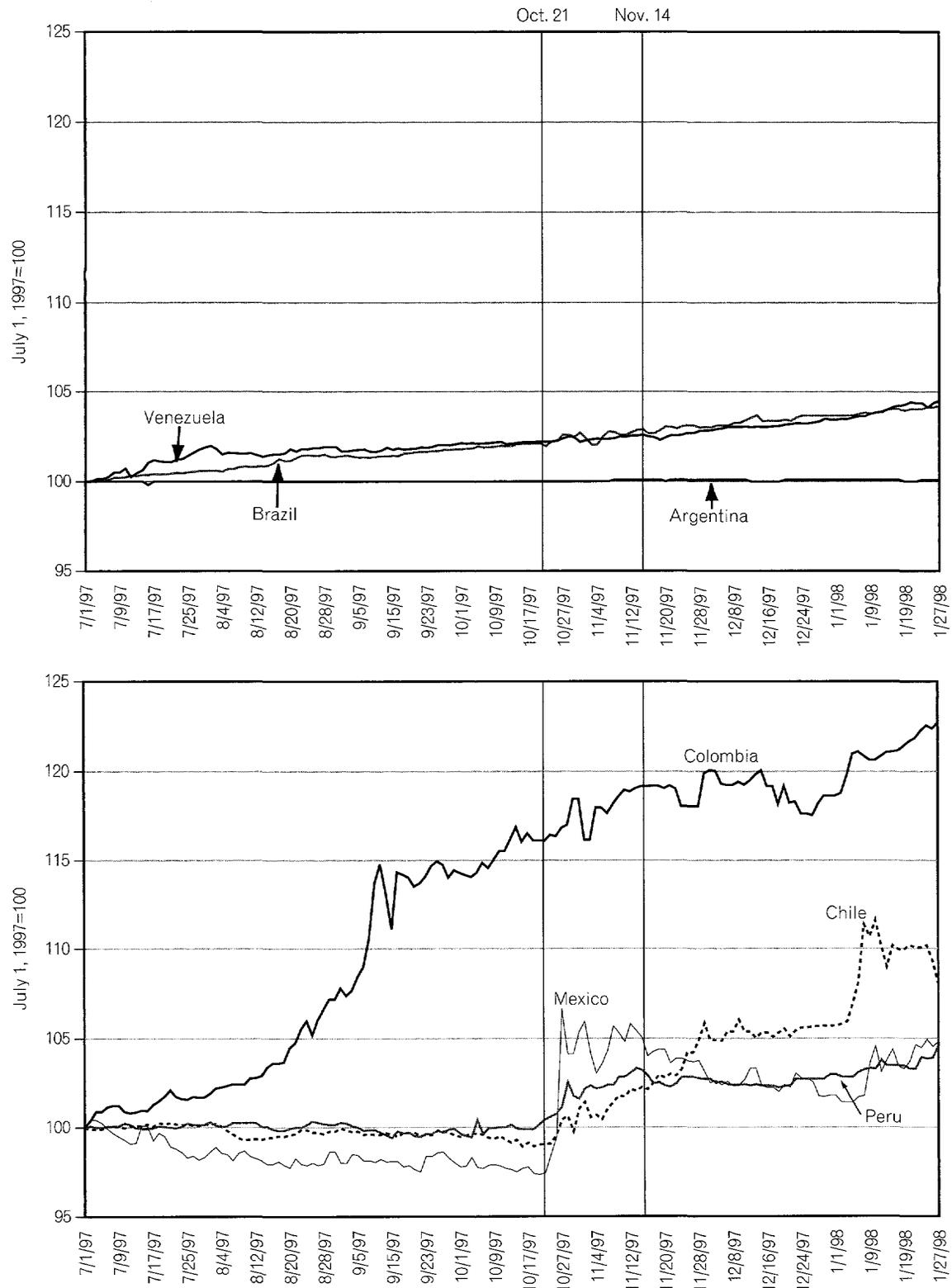
Source: World Bank staff projections.

<sup>1</sup> Before changes to the national accounts.

<sup>2</sup> Without the effect of El Niño.

<sup>3</sup> The numbers are for the Public Sector Borrowing Requirements (PSBR).

**Figure 5. Evolution of Nominal Exchange Rates in Latin America, July 1, 1997–January 28, 1998**



Source: Datastream, Banker's Trust Economics and Strategy Group.  
 Note: A rise in the index reflects a nominal depreciation.

rent account deficits (anticipating reduced capital inflows) and, some of them, towards depreciation of exchange rates (to avoid or mitigate the inflationary consequences of devaluations), through different combinations of fiscal and monetary tightening. Such policy responses, designed to reduce vulnerability and/or inflationary pressures, amplify significantly the growth slowdown effects of the spillovers from the Asian crises.

The ultimate effects of the Asian crises on Latin America in 1998, and from 1999 onwards, will depend also on the relative importance of increased Asian competitiveness. It is too early to assess fully such effects, because there is considerable uncertainty on the level at which Asian currencies will stabilize in real terms, and how soon their export sectors (now affected by reduced access to foreign finance) will react to their depreciated exchange rates.

At this point, it is self evident that the effects of the Asian crises on Latin America has been quite different across countries. In terms of the typology of channels of spillover effects presented in Figure 3, some Latin American economies suffered financial spillovers, while others will suffer primarily from the real-side effects.

In the case of Brazil, we expect that financial spillovers and the policy responses of the authorities will dominate over real-side effects. As mentioned earlier, Brazil responded decisively to the attack on the *real* through a combination of a doubling of interest rates and fiscal adjustment, which is currently being implemented. Consequently, Table 3 shows that we now expect Brazil to experience a lower rate of economic growth, lower inflation, and a lower current account deficit than what we had projected before the Asian crises. Despite the significant fiscal measures, public sector borrowing requirements will increase slightly in comparison to previous forecasts, due to the increase in interest payments, and the effect of the slowdown on fiscal revenues. It should be noted, however, that this set of projections is highly sensitive to the evolution of interest rates, hence we provide a range of possible growth outcomes. In contrast, real-side effects are not expected to affect Brazil significantly, because it is not a very open economy, and therefore suf-

fers less than other countries from reduced demand for its exports and reduced competitiveness. Also, Brazil may actually benefit from improvements in its terms of trade, because it imports oil and other commodities.

The downward revision in Brazil's projected inflation rate for 1998 reflects the assumption that the current exchange-rate regime (which pre-set the rate of annual nominal depreciation of the currency at 7 percent) will hold, thus the rate of inflation of tradeable goods will remain low. In addition, the domestic prices of some Asian and commodity imports will (and have) decline(d). Moreover, the monetary and fiscal contractions will contribute a further decline in the rate of inflation of non-tradeable prices.

On the other extreme, Chile, Peru, and Venezuela, are the countries that may be the most affected through real channels. All three of these countries are major exporters of commodities, such as copper, fishmeal, and oil, that are heavily imported by the affected Asian economies. Consequently, our projections for the current account balances of these economies have been revised downward. In the case of Chile, the authorities have responded to the changed international environment, and to the realization of very fast growth in aggregate demand during the last quarter of 1997, by raising interest rates. They will also probably reduce public spending, though not as by much as the drop in fiscal revenues, as they have in place a copper-price stabilization fund. Hence Chile's growth rate has also been revised downward. In addition, both Chile and Peru are expected to suffer contractions in the foreign demand for some of their non-traditional exports to Asia, also leading to lower growth rates than what had been projected before the Asian crises. Peru is also suffering the dramatic consequences of *el Niño*, which has dampened investment, destroyed infrastructure, and lowered the rate of economic growth. Both countries will mitigate growth effects by allowing some depreciation of their currencies, which may increase inflationary pressures by more than the beneficial effect of falling import prices. Venezuela will have to reduce its

non-oil fiscal deficit, just when oil revenues are falling sharply, and oil-related investments are also diminishing, thus reducing its rate of growth. In the end, Venezuela's economic performance will depend on the authorities policy responses.

Mexico and Colombia have an intermediate situation. They are affected by the drop in oil prices, though not as severely as Venezuela, as they are both increasing their oil exports (a fact that was not considered in our previous projections for Mexico) and they represent a much lower share of export and fiscal revenues. Mexico has already responded by tightening fiscal expenditures and increasing oil taxes. Colombia will probably also reduce expenditures, though not by as much as the fall in oil revenues (from previous projection) as it has an oil-price stabilization fund. Both countries have allowed some depreciation of their currencies and have increased moderately interest rates. Also, Mexico will probably suffer the strongest competitive impact of Asian devaluations (estimated in around one percent of GDP), but will probably react to it by allowing further depreciations. All in all, we expect in both countries slight increases in inflation rates, slight deterioration of current account deficits (in Mexico with respect to 1997 levels, in Colombia just with respect to previous projections, as the sharp increase in the volume of oil exports was already considered in previous projections). The effect on growth in both countries will be slight compared to previous projections. Colombia will continue its recovery from the slowdown in 1996, though at a more moderate pace (4 percent instead of 4.5 percent, compared to 3.2 percent in 1997) and Mexico will probably experience a sharper slowdown than previously expected (from 7 percent in 1997 to 4.8 percent in 1998).

Argentina is a unique case. Direct effects have been and will be small. However, the effect of the slowdown in Brazil will imply a higher than expected current account deficit and lower growth, as the currency board arrangement precludes changes in the nominal exchange rate, and the rise of interest rates between October and December will contribute to lower growth. If

the economy does not slowdown, perhaps due to a renewed inflow of capital since December, the current account deficit may even surpass our projection of 4 percent of GDP in 1998. As of now, we expect that growth will be reduced from 8.4 percent in 1997, and a previous projection of 5.5 percent, to around 5 percent in 1998. At the same time, inflation will be less than previously expected, due to falling import prices.

In summary, financial spillovers were stronger in countries with higher relative financial vulnerability (especially in Brazil), as expected. Brazilian authorities responded vigorously and timely, avoiding serious contagion at the expense of a significant slowdown in activity. In most other countries financial spillovers were short-lived and less intense, except for a generalized expected reduced access to international capital and higher spreads.

Trade-price effects were quite significant in countries dependent on commodities for which Asian countries were large and dynamic importers (Chile, Venezuela, and Peru being the most affected; Mexico and Colombia more moderately affected). Trade-volume effects appear significant—though not large—in countries with higher Asian export-shares (Chile and Peru) or with high export-shares in countries that suffer slowdowns (Argentina vis-à-vis Brazil). All countries will suffer some effects from the expected global economic slowdown, depending on their degree of openness. Competitive effects will probably be more severe for Mexico (up to 1 percent of GDP in 1999) than for other major Latin American countries, due to similarities in Mexico's export structure with those of the crisis-Asian economies.

However, the net effects of the Asian crises depend critically on policy responses. The pressures towards increased current account deficits in most countries, coupled with reduced access to capital markets, have led authorities to monetary and fiscal tightening, thus amplifying the growth slowdown. Such effect is more severe in countries with rigid exchange-rate systems (Brazil and Argentina), which, on the other hand, will benefit from reduced inflationary pressures. Countries with more flexible exchange-rate

regimes have allowed and will continue to allow some depreciation of their currencies, thus

reducing the net growth slowdown, but at the expense of a slight increase in inflation rates.



# VI CONCLUDING REMARKS

THE EXPERIENCE OF THE CRISIS-ASIAN economies highlights the importance of institutions (rules and their enforcement) in preventing the emergence of financial vulnerability, especially in the areas of financial and banking regulation, and corporate governance. Indeed, the main difference between past crises in Latin America and the events of 1997 is that in the latter financial vulnerability emerged primarily as a consequence of private behavior, rather than public macroeconomic policies. Regarding specific elements of the legal and regulatory frameworks, Latin America still has much to do in the areas of shareholders rights, bankruptcy laws, accounting standards (including consolidated balance sheets), information disclosure, and the like. Enforcement of prudential regulations also needs to improve, especially with regard to consolidated supervision, offshore on-site inspections, and supervision of off-balance sheet liabilities, particularly regarding the use of derivatives. In

addition, countries should avoid offering excessive deposit insurance, either explicitly or implicitly. Most countries thus need to continue the institutional reforms in the financial sector that were initiated in recent years; they should also pay attention to issues related to corporate governance, including accounting and disclosure standards for corporations, which will have the added benefit of permit-

ting the development of deeper and more liquid capital markets.

In addition, the region must not forget old policy lessons, which were painfully learned as a consequence of past currency crises experienced by Latin American countries. Prudent fiscal and monetary policies are important for maintaining a stable macroeconomic environment. Policies should aim in particular to prevent prolonged

credit booms, sharp currency appreciations, high current account deficits, and large build ups of short-term debt, public or private. Discouraging short-term capital inflows, as Chile and Colombia have done, or at least not encouraging them, as some Asian countries did, may be part of the repertoire of prudential policies. Finally, an additional lesson that has been reinforced by the events of 1997, is that some flexibility in

exchange-rate management may help to prevent excessive foreign currency exposure by the private sector and facilitate the response to market pressures. Countries that wish to fight inflation with an exchange-rate anchor may need to establish very strong institutional commitments to this policy, such as a currency board, in order to enhance its credibility.

# APPENDIXES

## APPENDIX 1: STATISTICAL APPENDIX

**Table A1. Banks and Credit Ratings**

	<i>Banks required to seek credit rating</i>	<i>Does a local credit- rating agency exist?</i>	<i>Number out of the ten largest domestically owned banks receiving ratings in February 1997 from</i>	
			<i>local agency<sup>1</sup></i>	<i>international agency<sup>2</sup></i>
Hong Kong	No	No	—	3 <sup>3</sup>
Korea	No	Yes	0	10
Singapore	No	No	—	All 6
Taiwan	No	Since May 1997	—	6
Indonesia	No	No	—	10
Malaysia	No	Yes	7 <sup>4</sup>	2
Thailand	No	Yes	3 <sup>5</sup>	9
Argentina	Yes	Yes	10 <sup>6</sup>	10
Brazil	No	Yes	n.a.	9
Chile	Yes <sup>7</sup>	Yes	10	10
Colombia	No <sup>8</sup>	No	—	5 <sup>9</sup>
Mexico	No	Yes	5	10
Peru	Yes	Yes	10	(6)
Venezuela	No	Yes	All	7

Source: Bank for international Settlements (1997, p.116).

<sup>1</sup> For local currency deposits.

<sup>2</sup> For long-term foreign currency debt. If only available for local currency deposits, this is shown in brackets.

<sup>3</sup> Domestically owned banks only. Five banks have received ratings for their long-term foreign currency debt.

<sup>4</sup> Banks receive ratings based on overall banking operations.

<sup>5</sup> Rated for their long-term local currency bonds; none rated for local currency deposits.

<sup>6</sup> One bank whose liabilities are guaranteed by the Federal Government is not required to seek a credit rating.

<sup>7</sup> At least two agencies must rate bank securities.

<sup>8</sup> However, a rating is required if certain operations are undertaken (e.g. securitisation and bond issuance).

<sup>9</sup> For issuance of ADRs and GDRs.

**Table A2. Current Account Balances in Latin America and Asia, 1991–1997**  
(as percentages of GDP)

	1991	1992	1993	1994	1995	1996	1997
Argentina	-1.5	-3.7	-2.9	-3.7	-0.9	-1.4	-3.7
Brazil	-0.4	1.6	-0.1	-0.3	-2.5	-3.3	-4.1
Chile	0.3	-1.6	-4.6	-1.2	0.2	-4.1	-4.0
Colombia	5.6	2.0	-4.4	-4.8	-5.4	-5.6	-5.9
Mexico	-5.1	-6.7	-5.8	-7.0	-0.6	-0.6	-1.8
Peru	-3.0	-4.5	-5.2	-5.3	-7.3	-5.8	-5.1
Venezuela	3.2	-6.2	-3.3	4.4	3.0	12.2	-6.9
China	3.5	1.5	-2.7	1.4	0.2	0.9	2.5
Hong Kong	7.1	5.7	7.4	1.6	-3.9	-1.3	-1.5
Indonesia	-3.4	-2.2	-1.5	-1.7	-3.3	-3.3	-2.9
Korea	-3.0	-1.5	0.1	-1.2	-2.0	-4.9	-2.9
Malaysia	-8.8	-3.8	-4.8	-7.8	-10.0	-4.9	-5.8
Philippines	-2.3	-1.6	-5.5	-4.6	-4.4	-4.7	-4.5
Singapore	11.2	11.3	7.4	17.1	16.9	15.0	14.0
Taiwan	6.7	3.8	3.0	2.6	1.9	5.2	4.2
Thailand	-7.7	-5.6	-5.0	-5.6	-8.0	-7.9	-3.9

Source: Latin American countries: World Bank, World Development Indicators database and staff estimates; East Asian countries: World Economic Outlook database, IMF's International Financial Statistics, and IMF staff estimates.

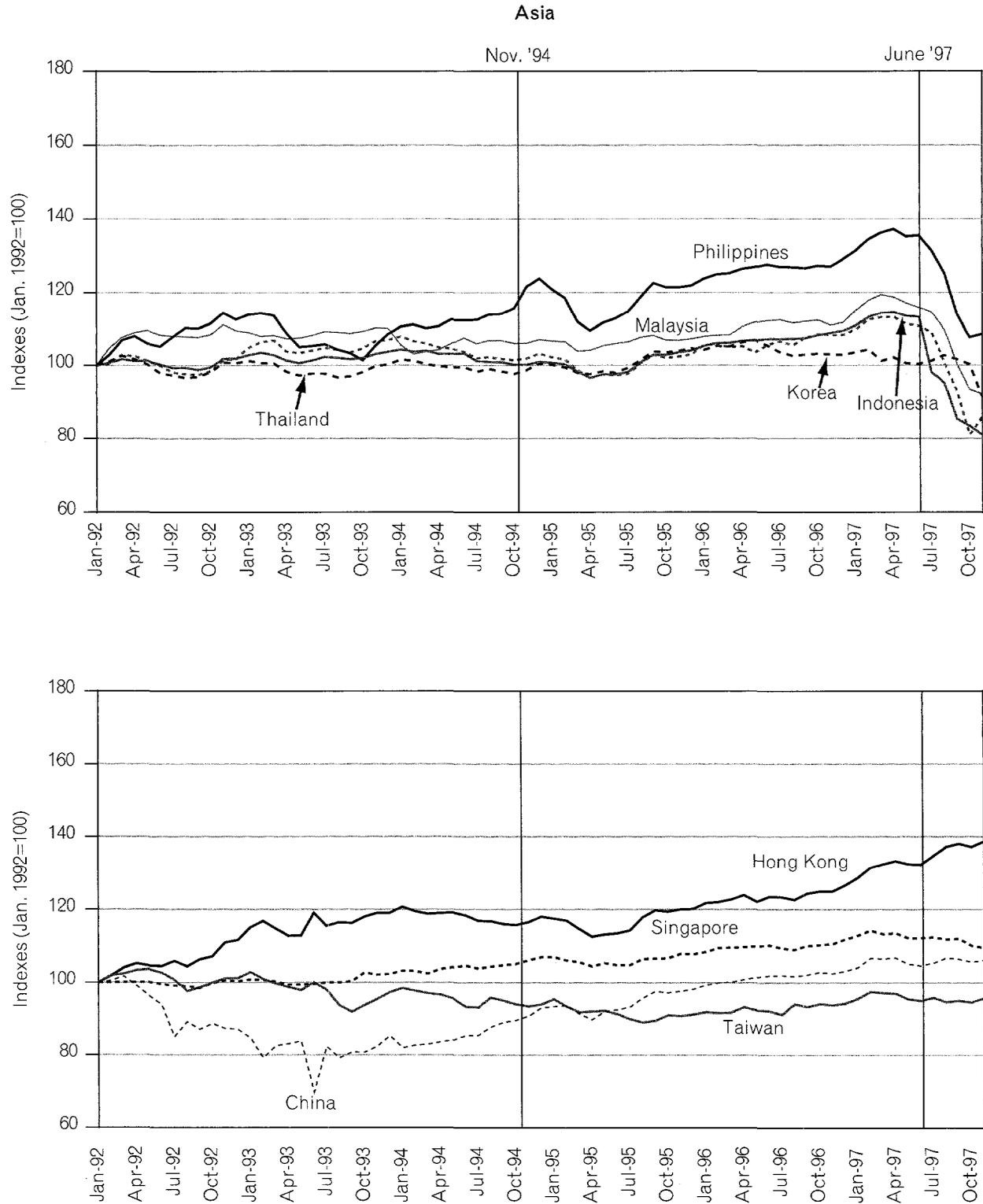
Note: 1997 figures are preliminary.

**Table A3. Gross Private Capital Flows to Developing Countries in 1997**  
(US\$ billions, monthly averages)

Region	Jan.–July	Aug.–Oct.	Jan.–Oct.	Nov.–Dec.
All developing countries	17.5	18.1	17.7	12.0
East Asia	6.3	5.1	5.9	2.5
East Asia 5	6.7	5.6	6.3	2.2
East Asia 5 excl. Korea	4.2	2.9	3.8	1.5
Latin America	7.3	8.9	7.8	4.2
Europe & Central Asia	2.2	2.5	2.3	3.0

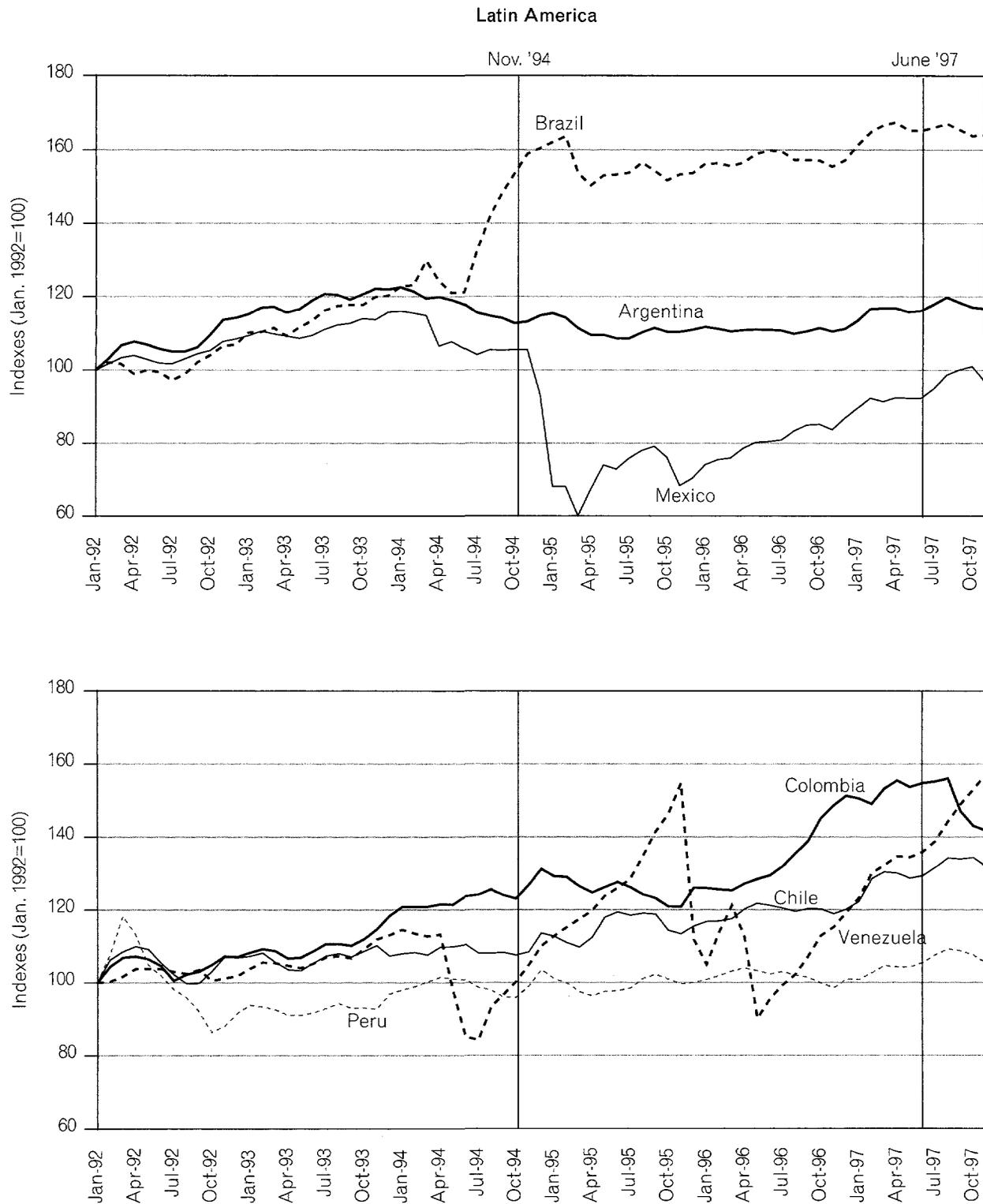
Source: World Bank, GEP 1998 (forthcoming).

**Figure A1. Real Effective Exchange Rates, 1992-1997**  
(Jan. 1992=100)



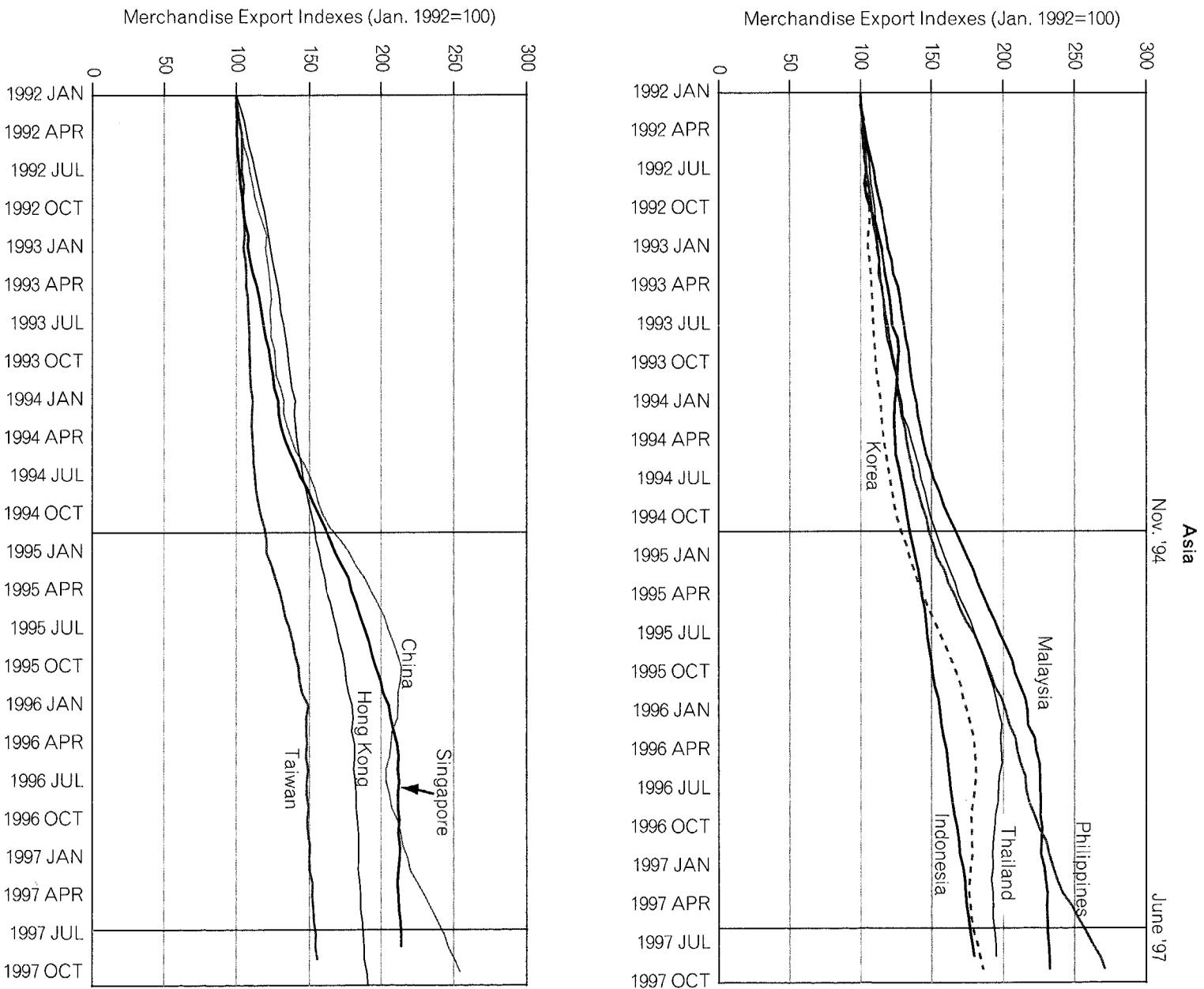
Source: International Financial Statistics database, International Monetary Fund.  
Note: An increase in the index reflects a real appreciation of the currency.

**Figure A1. (cont.) Real Effective Exchange Rates, 1992–1997**  
(Jan. 1992=100)



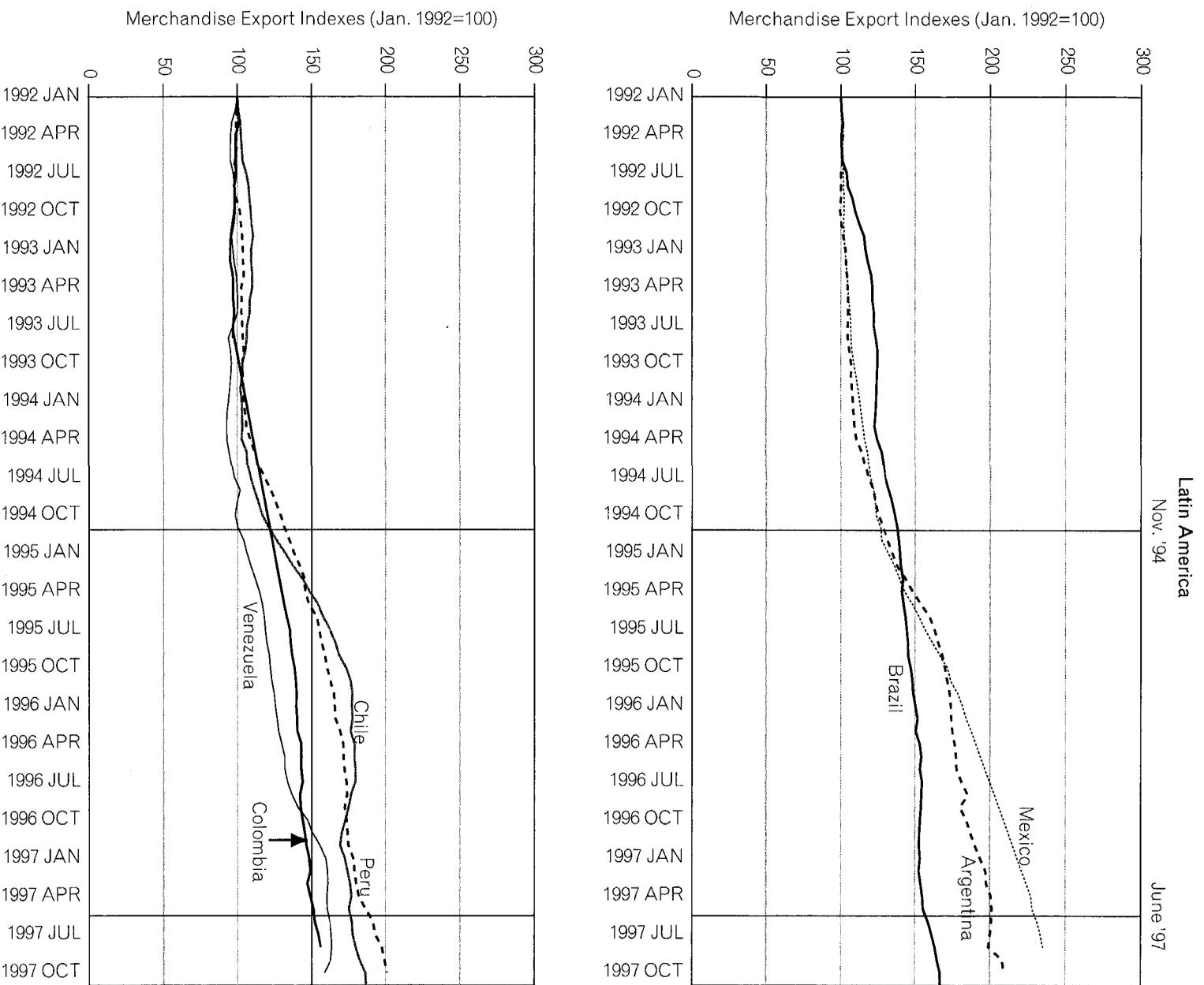
Source: International Financial Statistics database, International Monetary Fund.  
Note: An increase in the index reflects a real appreciation of the currency.

**Figure A2. Merchandise Export Revenues in US\$**  
 (twelve month moving averages, Jan. 1992=100)



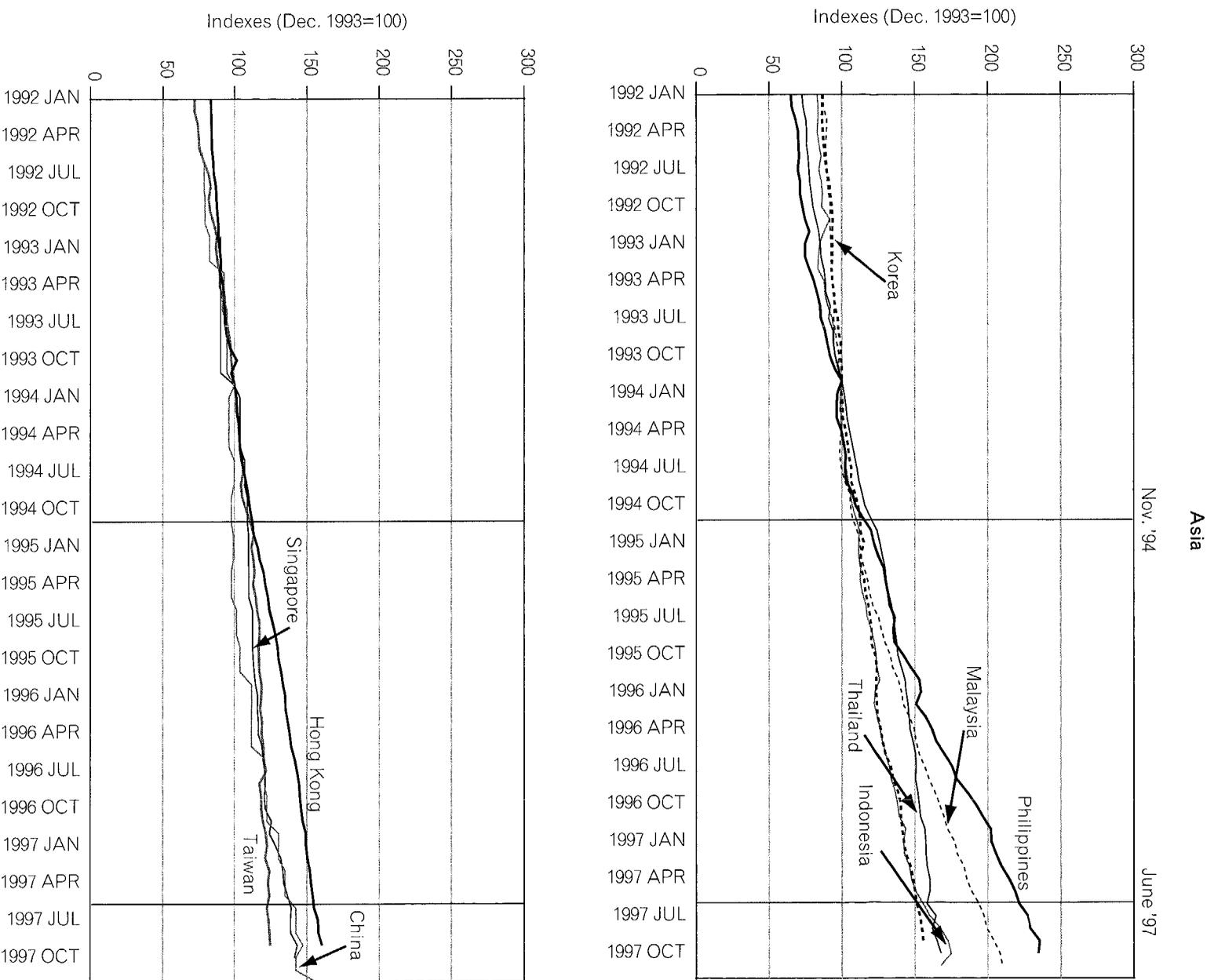
Source: International Financial Statistics database, International Monetary Fund.

**Figure A2. (cont.) Merchandise Export Revenues in US\$**  
 (twelve month moving averages, Jan. 1992=100)



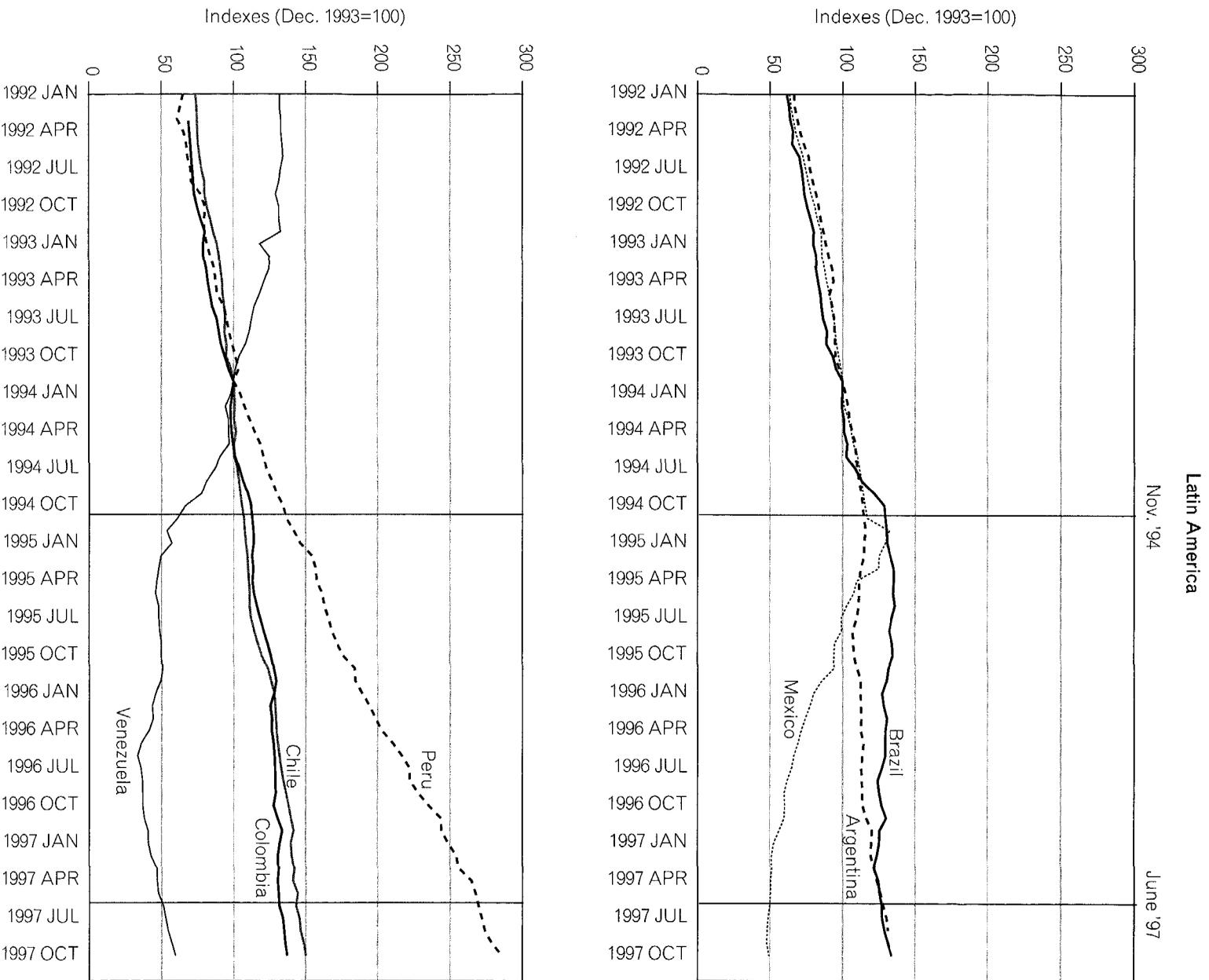
Source: International Financial Statistics database, International Monetary Fund.

**Figure A3. Claims on the Private Sector, 1992-1997**  
(in real terms)



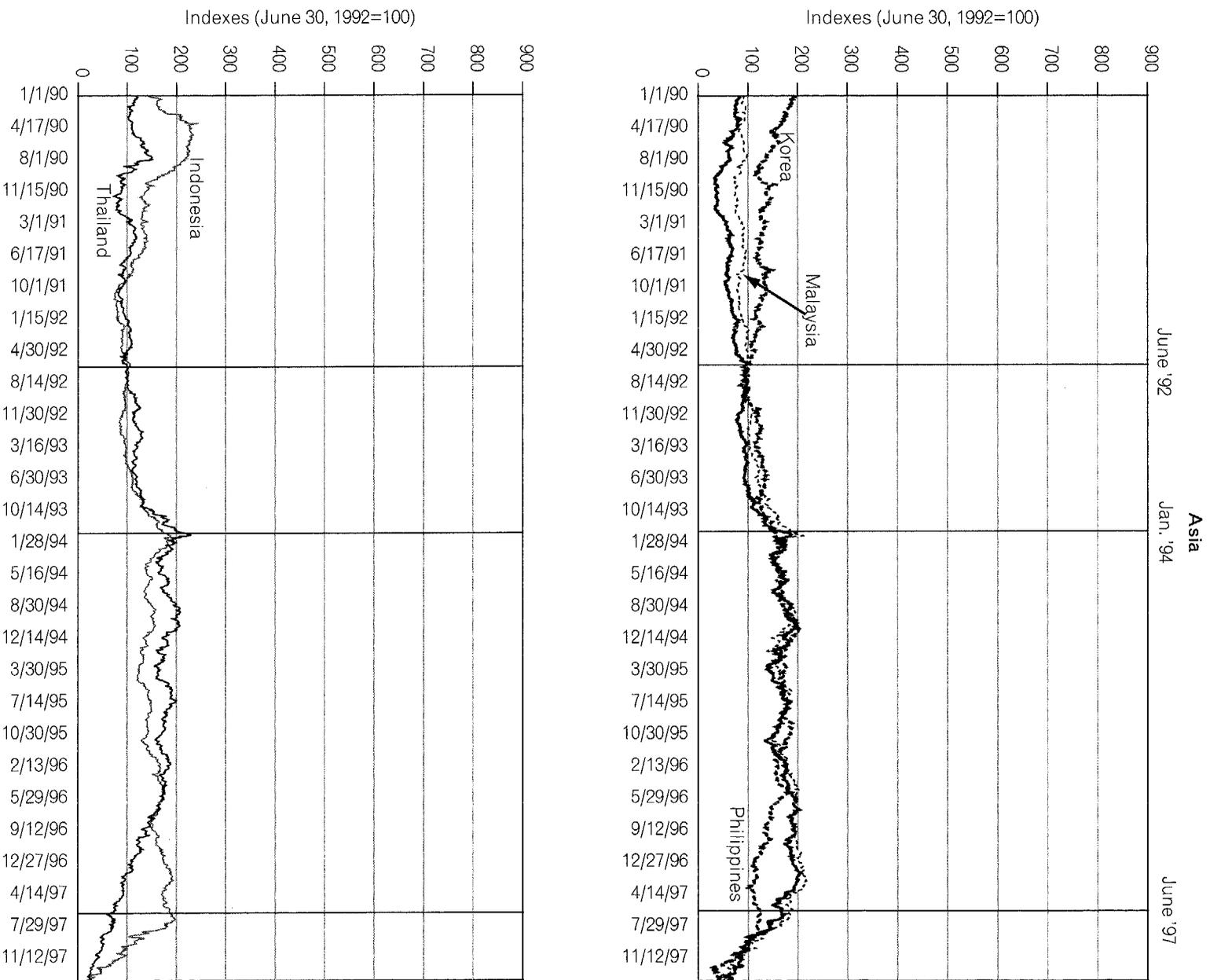
Source: International Financial Statistics database, International Monetary Fund.  
Note: Claims on the private sector of deposit money banks and other banking institutions.

**Figure A3. (cont.) Claims on the Private Sector, 1992-1997**  
(in real terms)



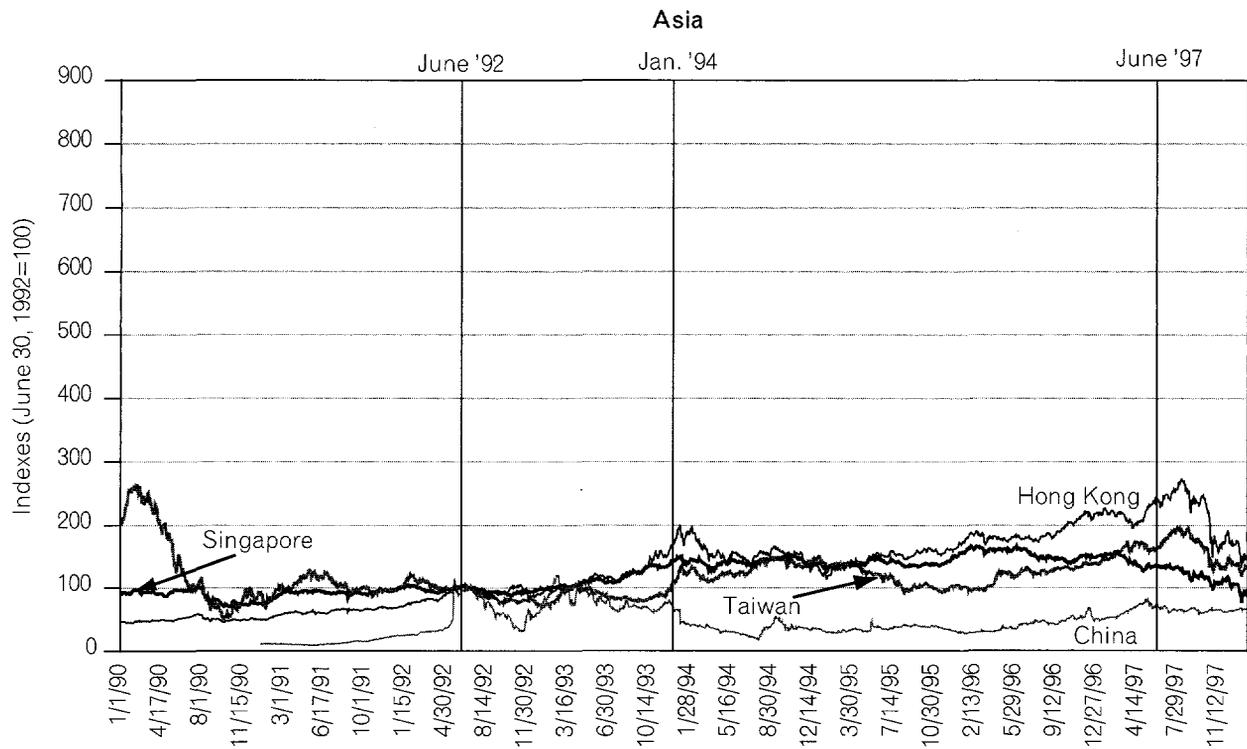
Source: International Financial Statistics database, International Monetary Fund.  
Note: Claims on the private sector of deposit money banks and other banking institutions.

**Figure A4. Stock Market Prices in US\$, 1990-1998**



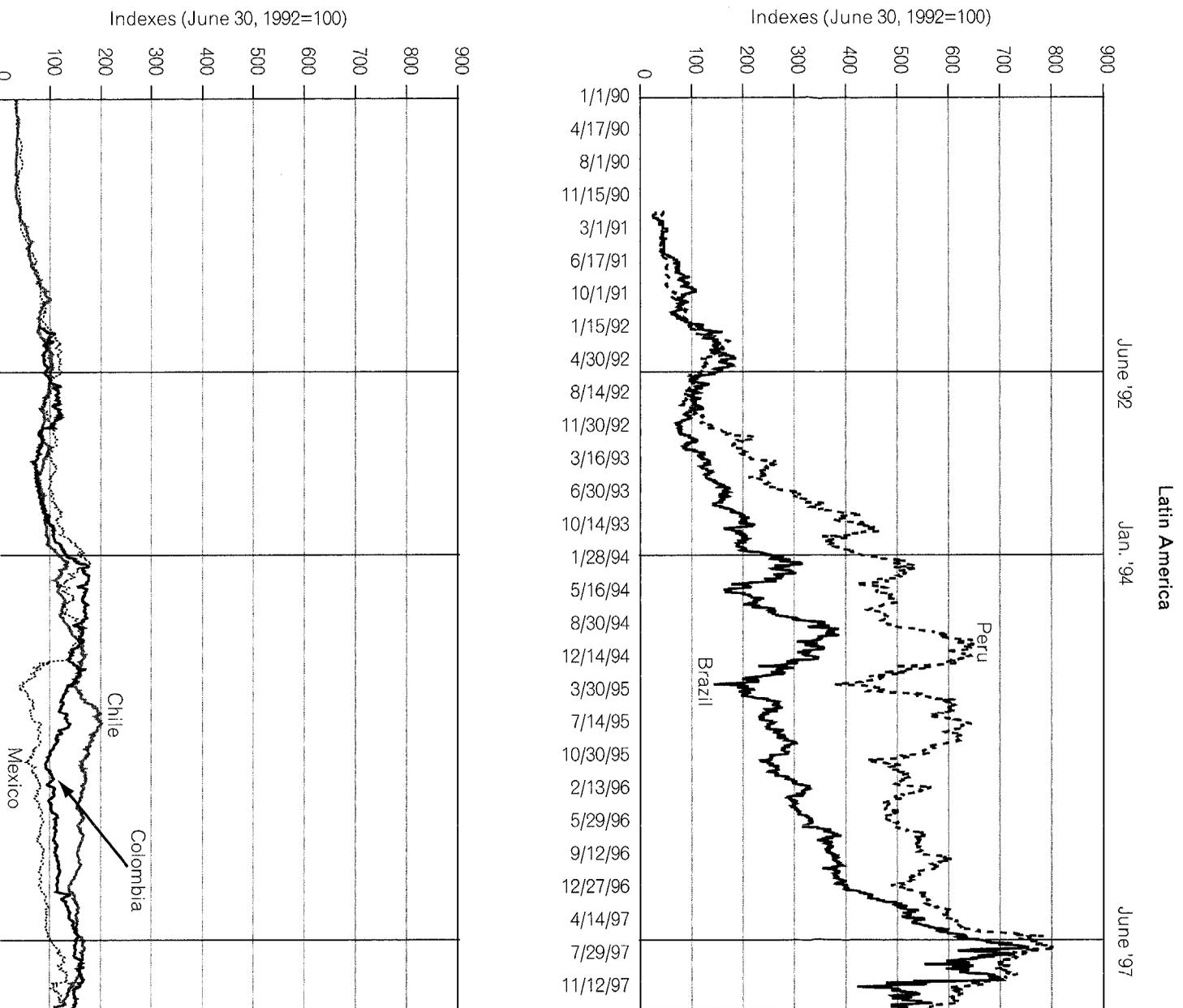
Source: Datastream, Banker's Trust Economics and Strategy Group.

**Figure A4. (cont.) Stock Market Prices in US\$, 1990-1998**



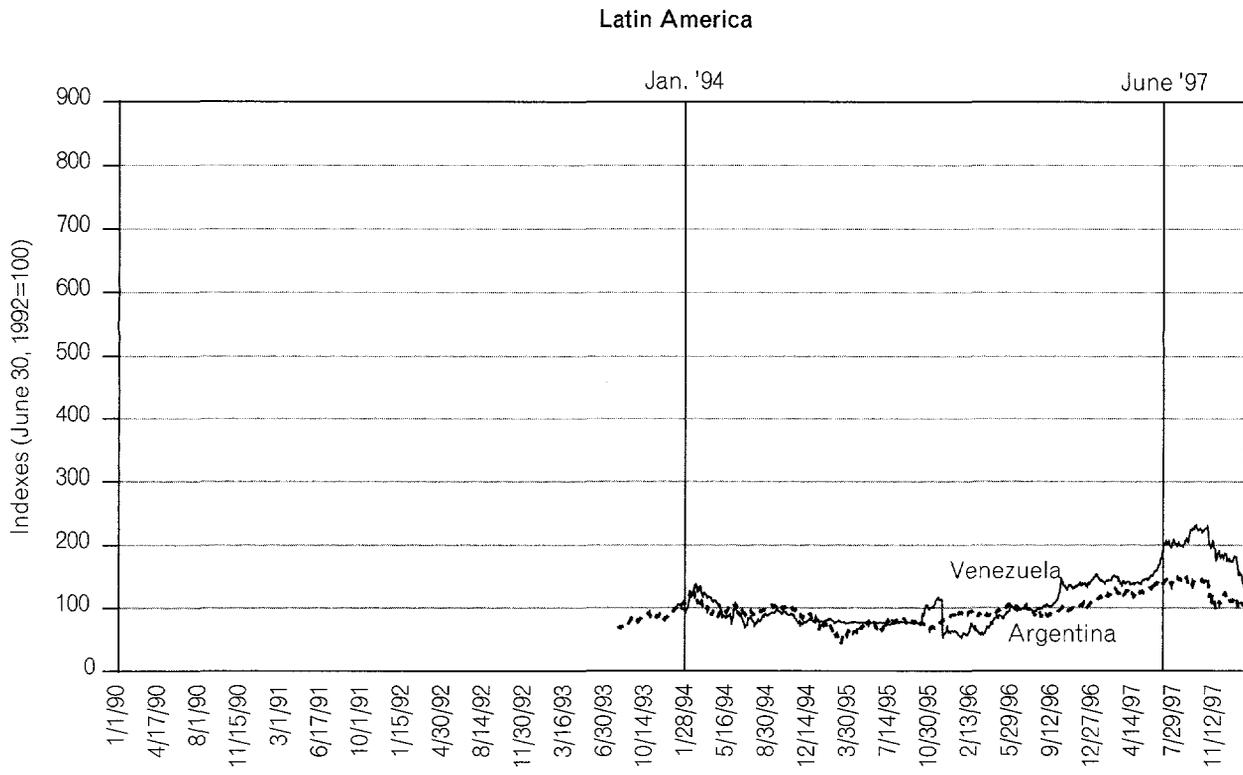
Source: Datastream, Banker's Trust Economics and Strategy Group.

**Figure A4. (cont.) Stock Market Prices in US\$, 1990-1998**



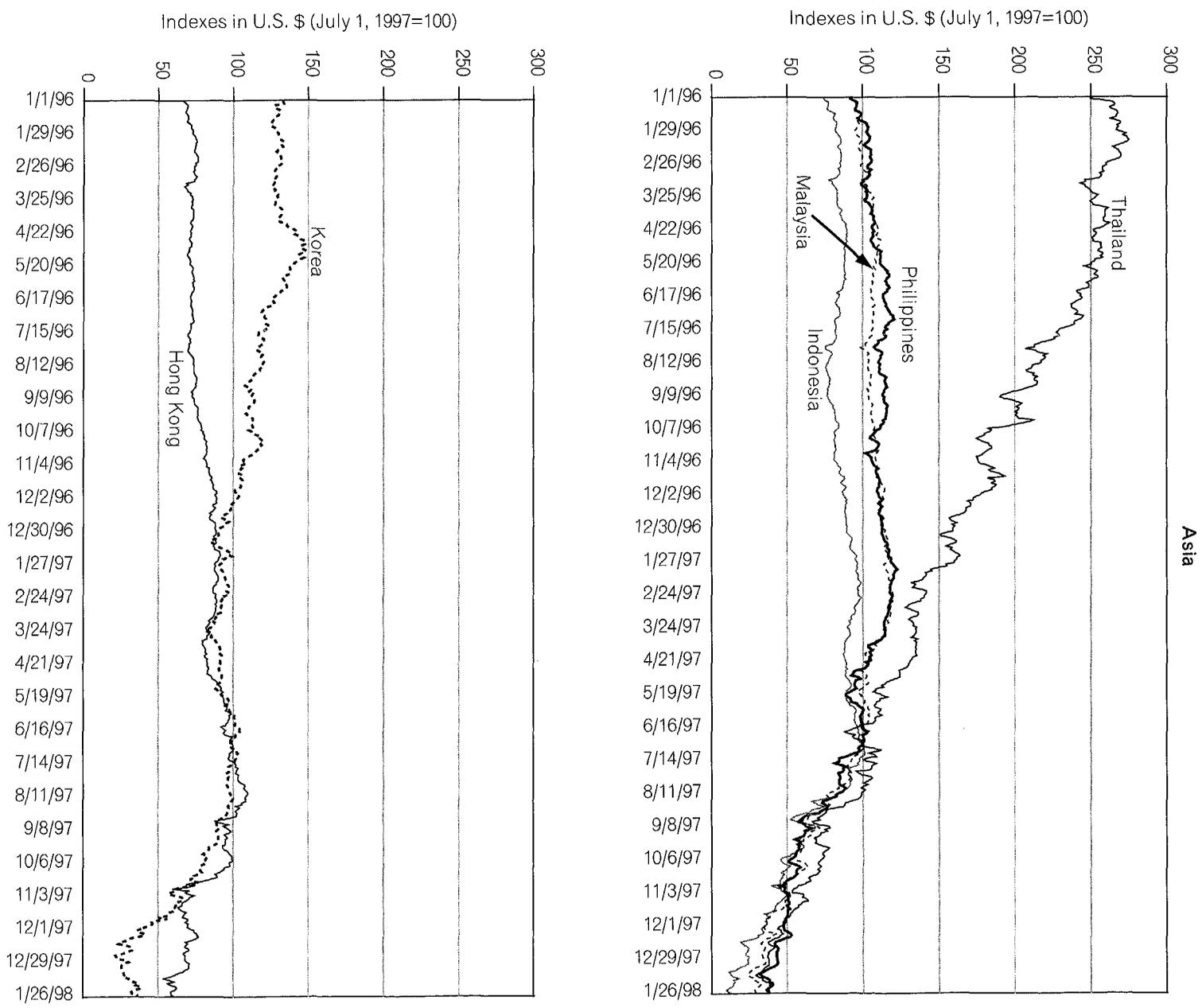
Source: Datastream, Banker's Trust Economics and Strategy Group.

**Figure A4. (cont.) Stock Market Prices in US\$, 1990-1998**



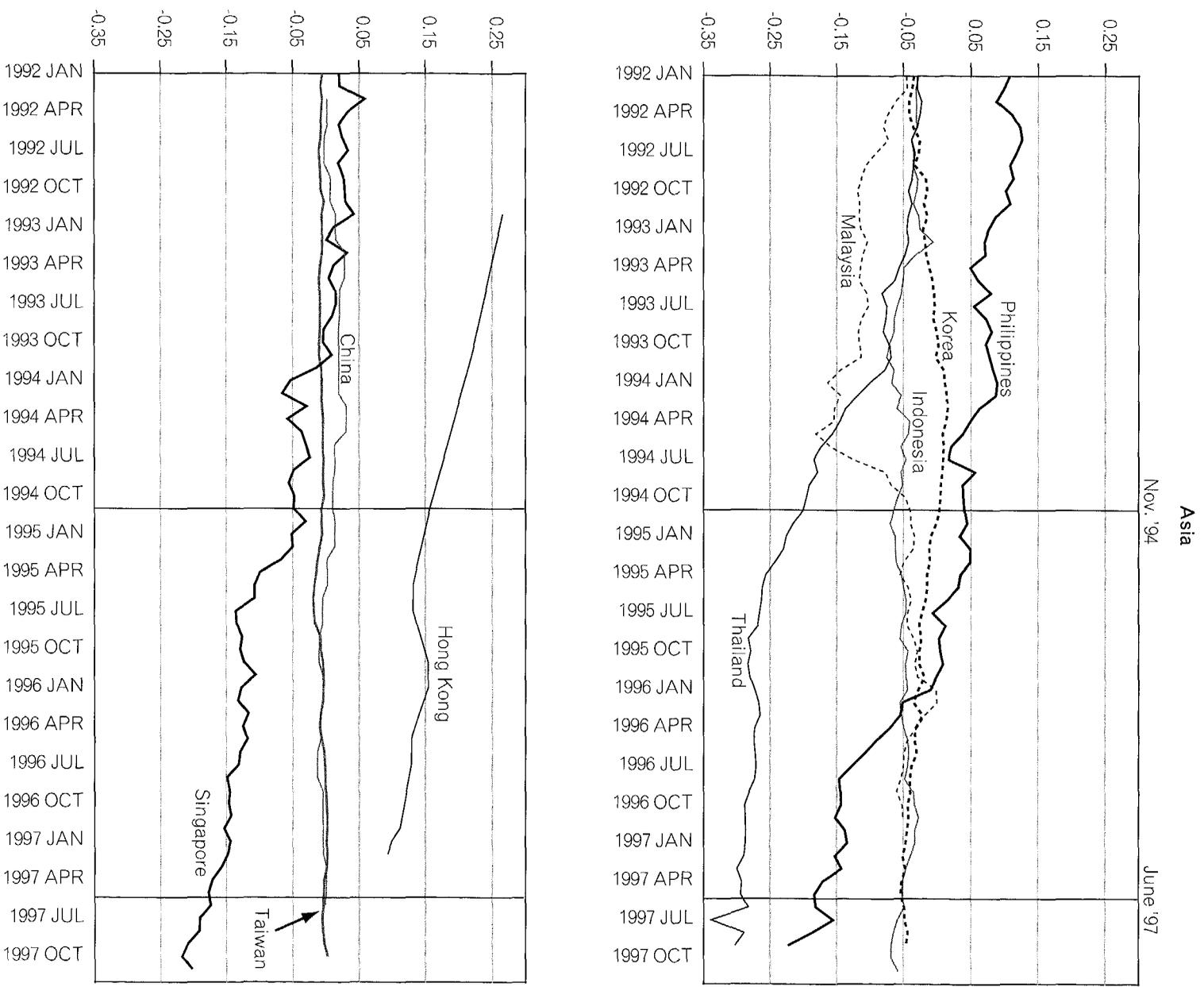
Source: Datastream, Banker's Trust Economics and Strategy Group.

**Figure A5. Stock Market Prices in US\$, 1996-1998**



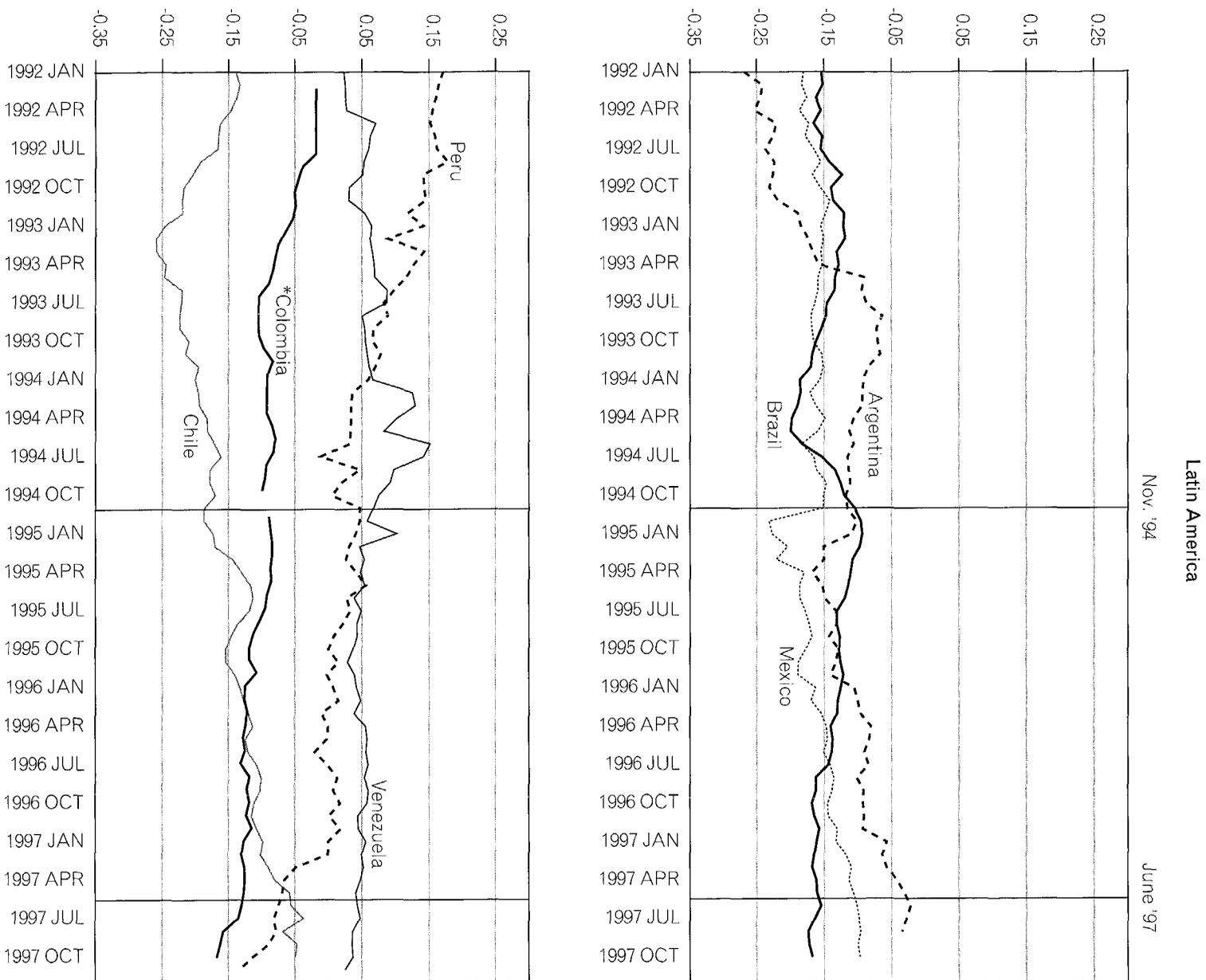
Source: Datastream, Banker's Trust Economics and Strategy Group.

**Figure A6. Net Foreign Assets over M2**  
(banking system)



Source: International Financial Statistics database, International Monetary Fund.

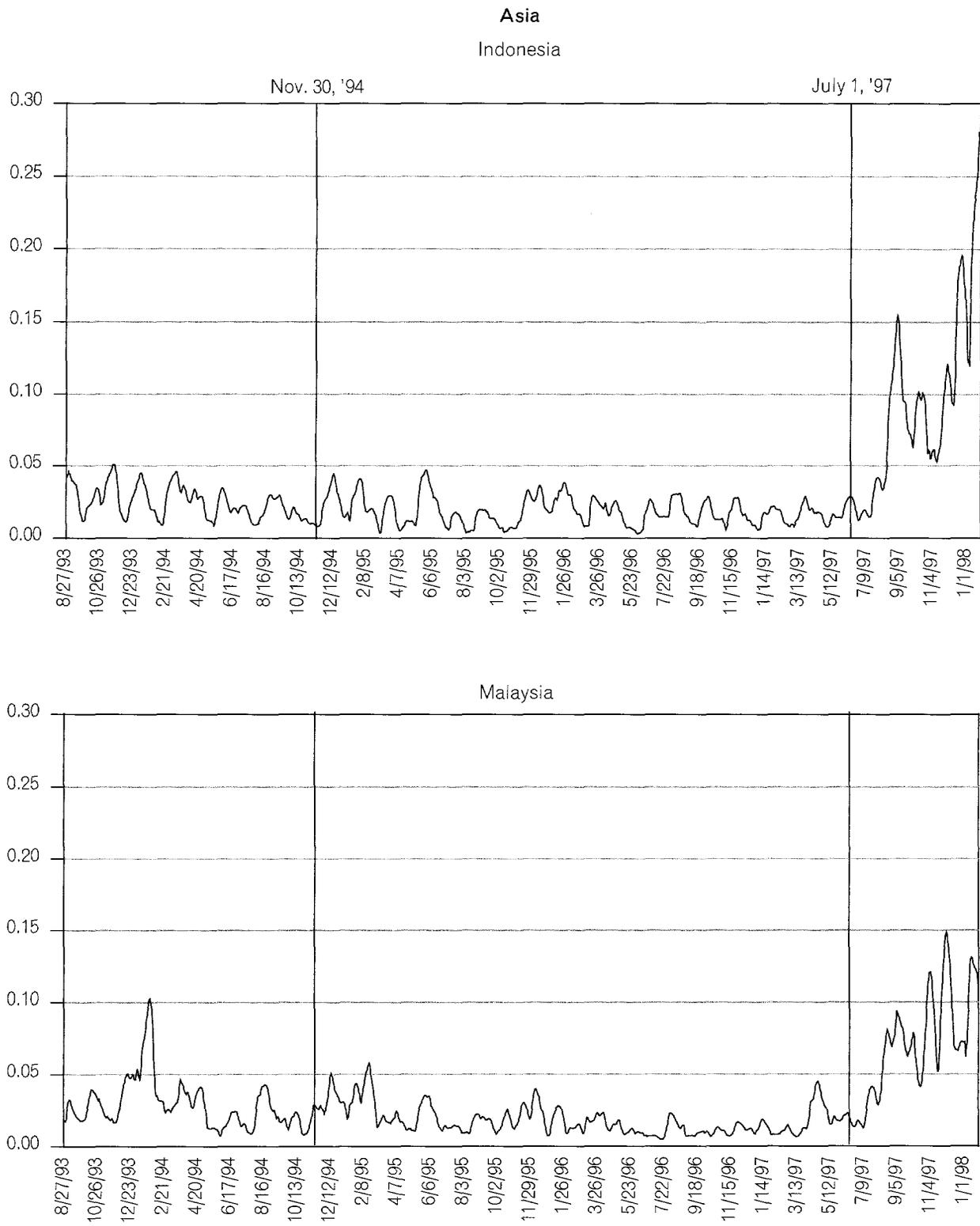
**Figure A6. (cont.) Net Foreign Assets over M2**  
(banking system)



\*Data for Colombia October 1994 not available.

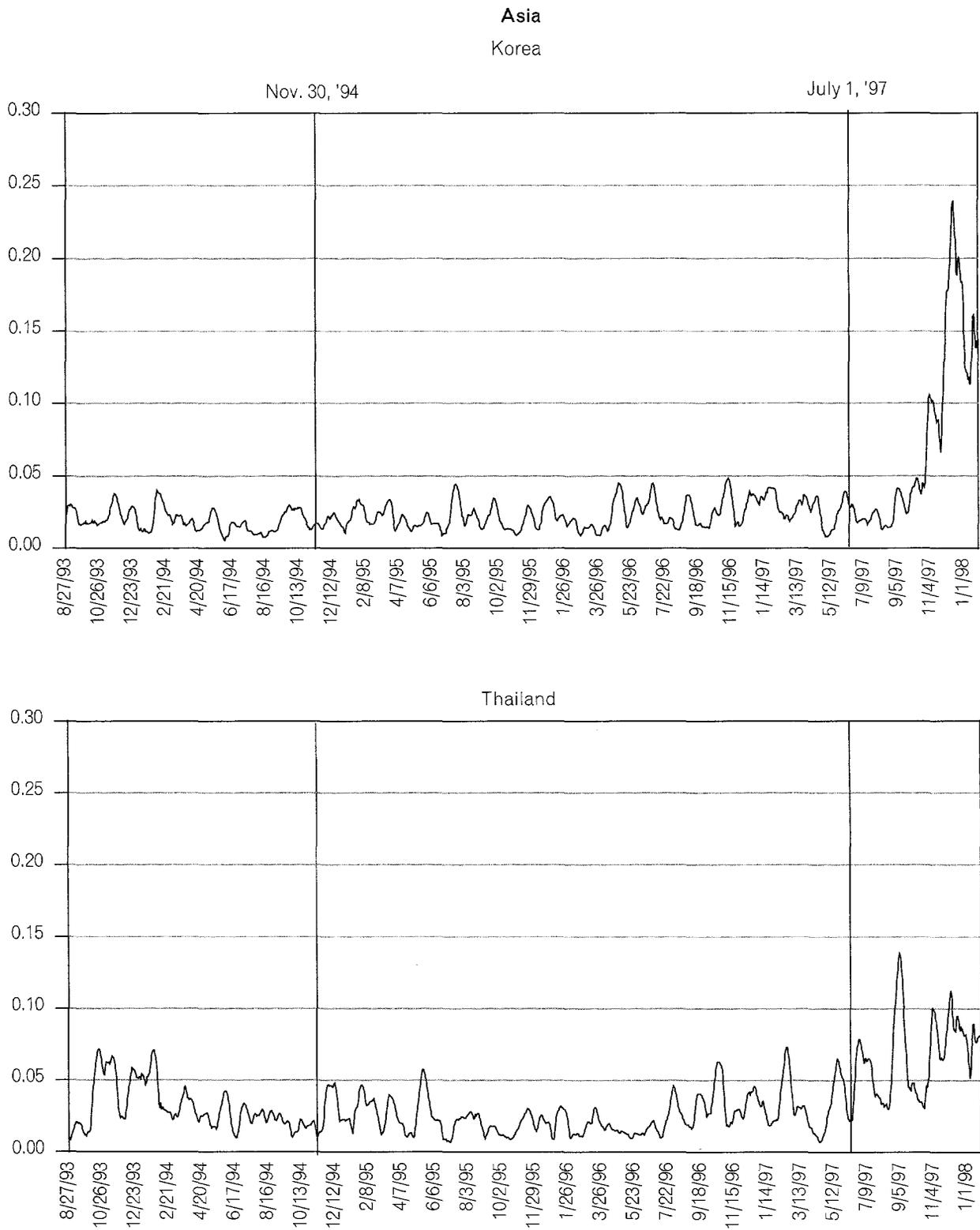
Source: International Financial Statistics database, International Monetary Fund.

**Figure A7. Volatility of Stock Market Prices**  
(moving 20-day variation coefficient)



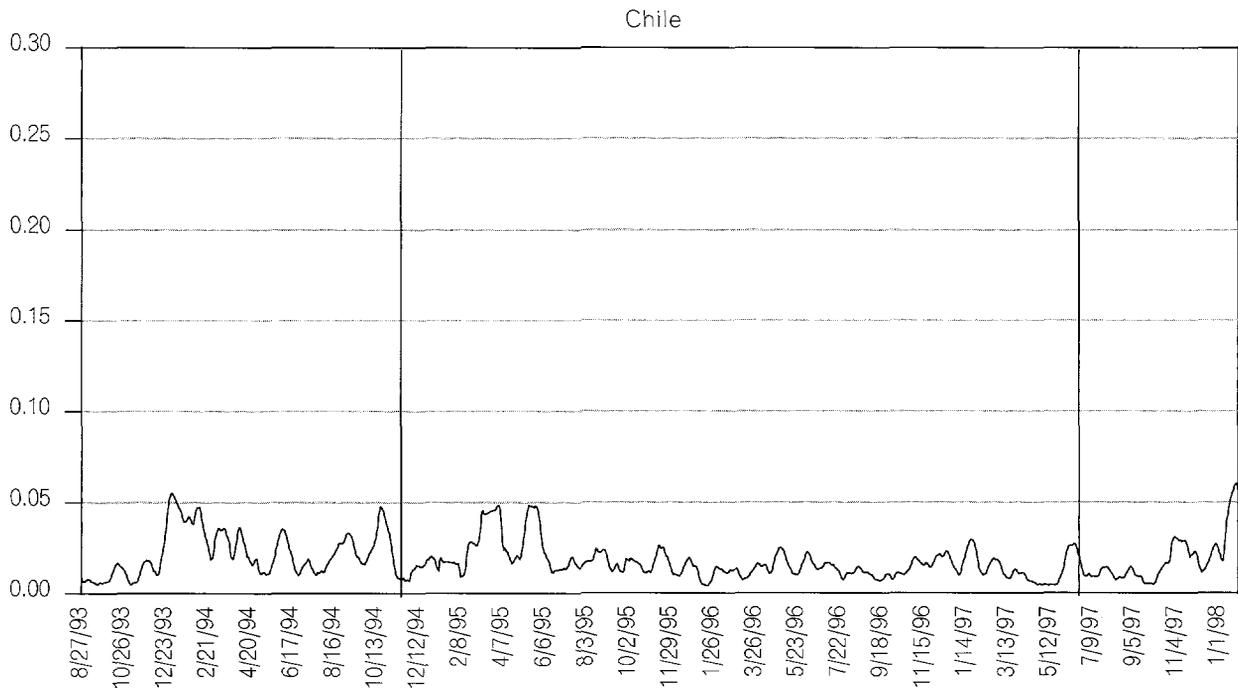
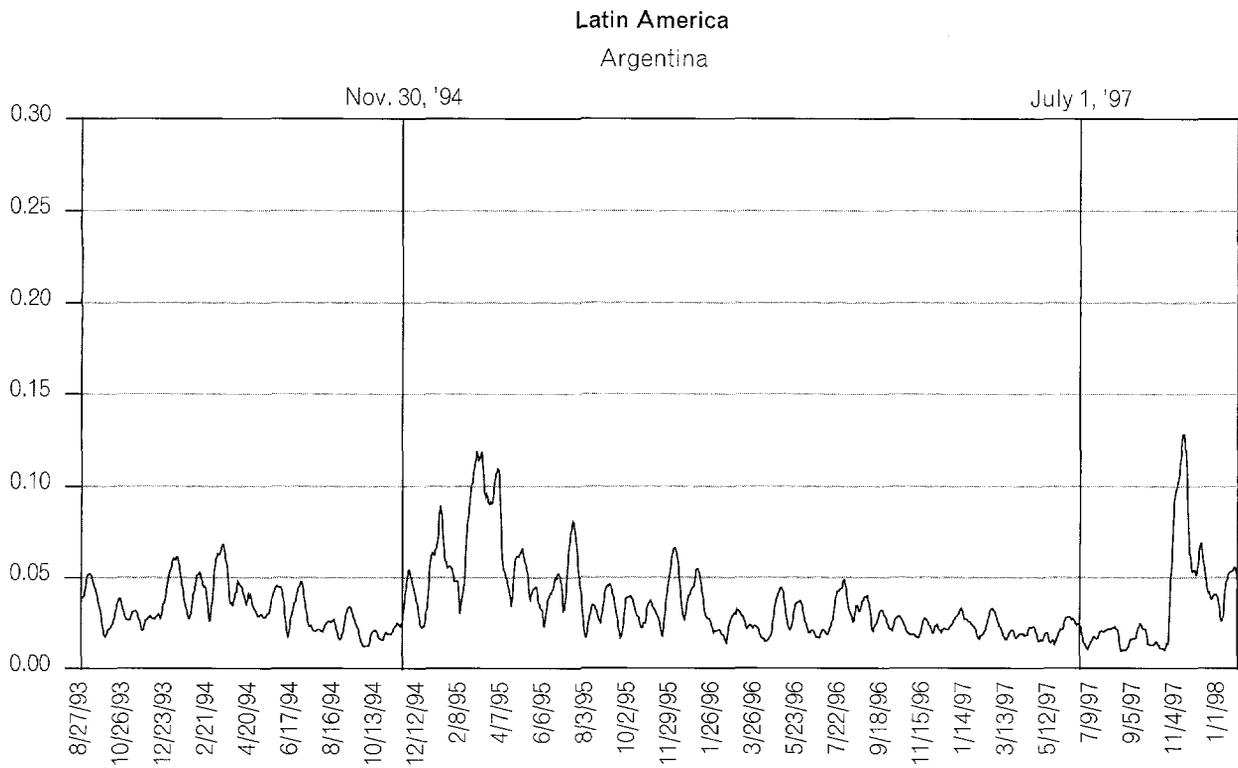
Source: Datastream, Banker's Trust Economics and Strategy Group.

**Figure A7. (cont.) Volatility of Stock Market Prices**  
 (moving 20-day variation coefficient)



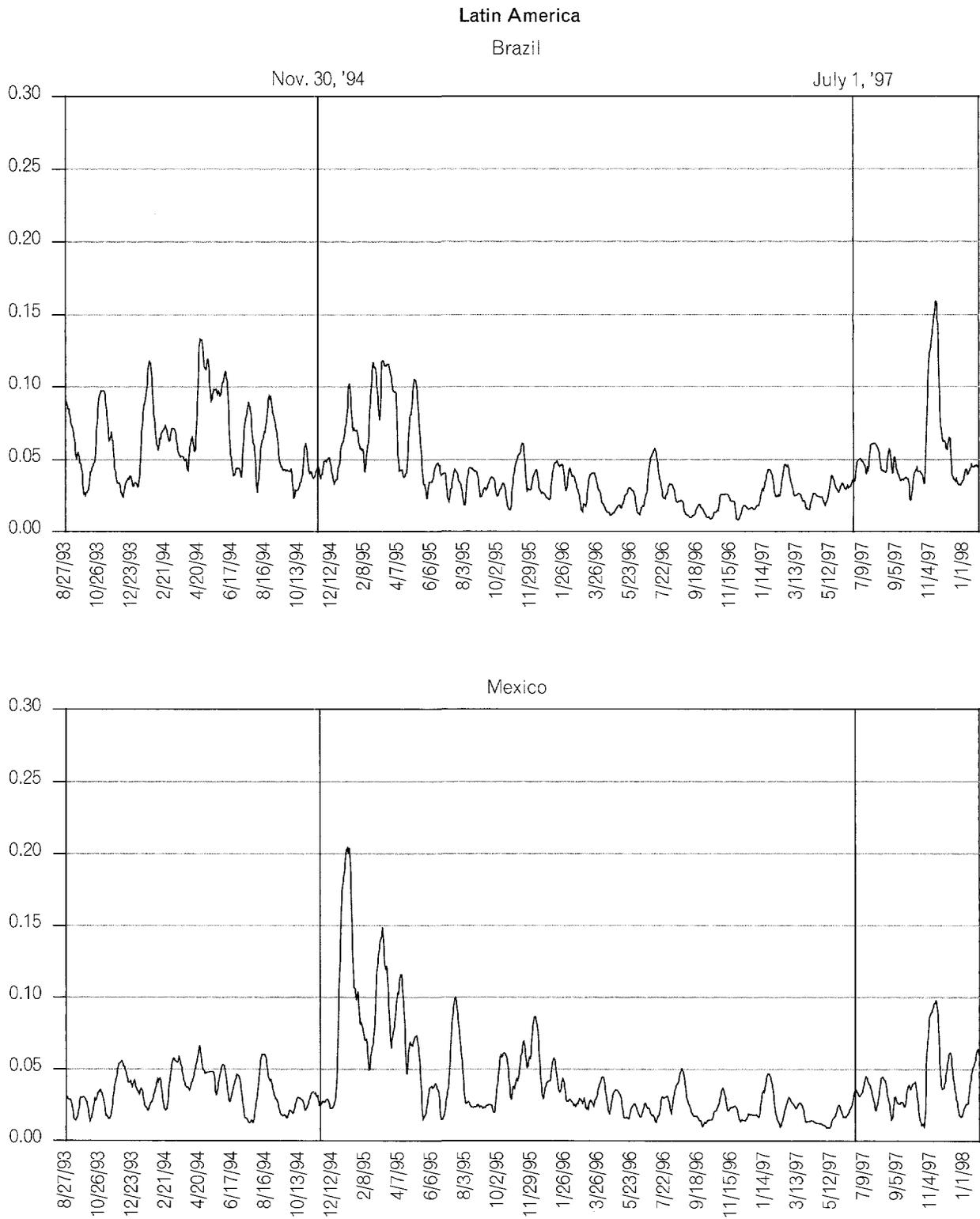
Source: Datastream, Banker's Trust Economics and Strategy Group.

**Figure A7. (cont.) Volatility of Stock Market Prices**  
(moving 20-day variation coefficient)



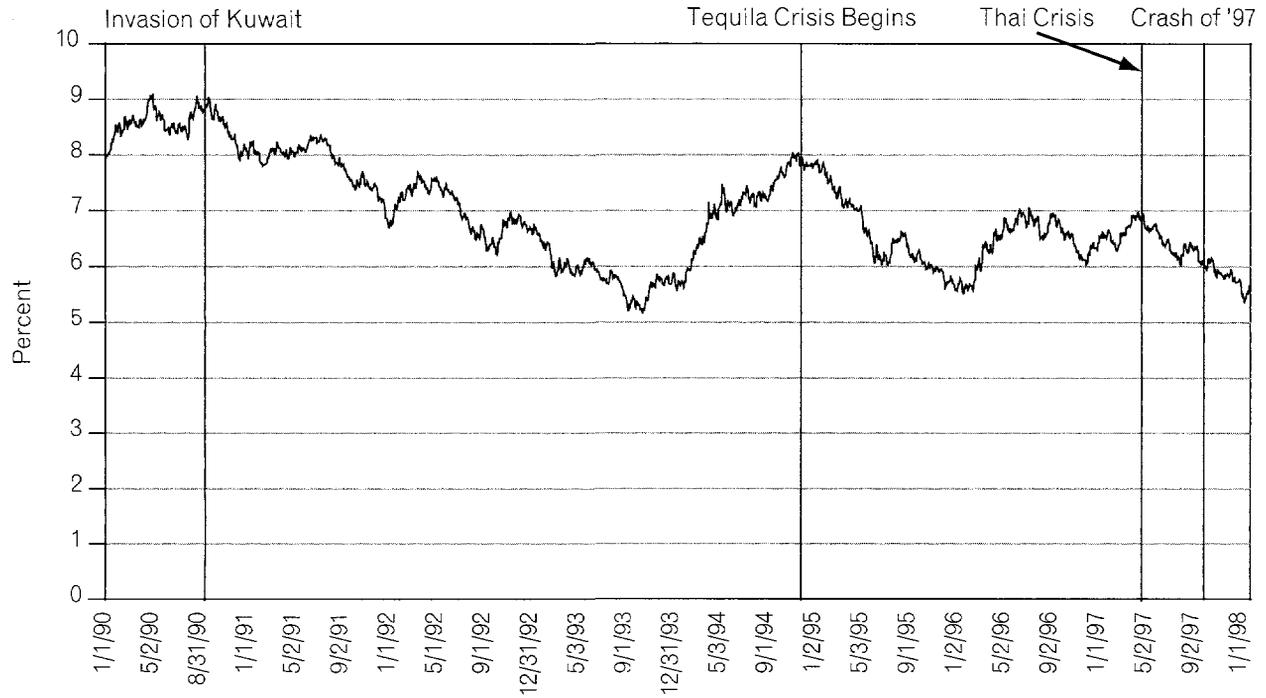
Source: Datastream, Banker's Trust Economics and Strategy Group.

**Figure A7. (cont.) Volatility of Stock Market Prices**  
 (moving 20-day variation coefficient)



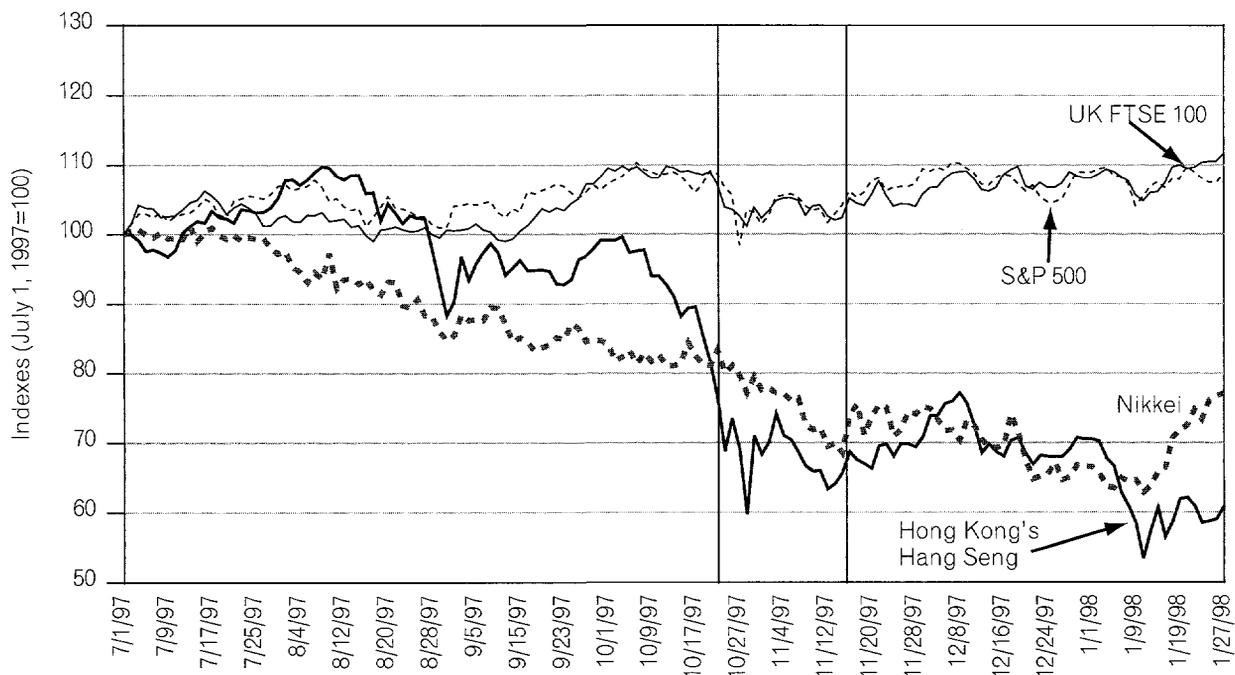
Source: Datastream, Banker's Trust Economics and Strategy Group.

**Figure A8. Ten-Year U.S. Treasury Bond Yield Rate**



Source: Datastream, Banker's Trust Economics and Strategy Group.

**Figure A9. Stock Price Indexes in Hong Kong, the U.S., Japan, and the U.K., July 1997–January 1998**



Source: Datastream, Banker's Trust Economics and Strategy Group.

## APPENDIX 2: INVENTORY OF CONTROLS ON CAPITAL TRANSACTIONS IN ASIA AND LATIN AMERICA PRIOR TO THE 1997 CRISES

Country (date of information)	Controls on Foreign Ownership		Controls on Credit Operations		
	On capital market securities purchased by nonresidents	Foreign direct investment in financial/banking sectors	Commercial or financial credits to residents from nonresidents	Lending locally in foreign exchange	Open foreign exchange position limits
Indonesia (4/30/97)	The purchase of shares is limited to a maximum of 49% of total shares issued by an individual company listed on the Indonesian Stock Exchange.	A foreign investment company may be established as a straight investment, which means that 100% of the shares may be owned by a foreign citizen and/or entities. However, some of the company's shares must be sold to an Indonesian citizen and/or entities through direct placement and/or indirectly through the domestic capital market no later than 15 years after commencement of commercial operations.	Resident entities, especially nonbank private sectors, may borrow from nonresidents; however, they have to submit periodic reports to the Commercial Offshore Loan Team (COFLT) of the Bank of Indonesia on their borrowing.	Banks are permitted to lend locally in foreign exchange, subject to requirement that 80% of the foreign exchange loans must be provided for export activity. Banks can also purchase locally issued securities denominated in foreign exchange, subject to the requirement that the securities must be investment grade and should not be issued by their groups. To do this, banks should take into account other exchange regulations, namely the regulation on net open position (NOP) aimed at prudential control. See next column.	The limits are: (1) the average total NOP, both on and off balance sheet, in a week must not exceed 25% of the bank's capital; and (2) the average NOP off balance sheet in a week must not exceed 25% of the bank's capital.
Korea (3/31/97)	Nonresidents may freely acquire listed stocks up to 5% individually and 20% collectively of the local number of shares issued. For convertible bonds issued by small-and medium-sized enterprises, they may acquire up to 5% individually and 30% collectively of the total value of convertible bonds. For other purchases, including public bonds designated by the Securities Exchange Com-	Equity participation is possible by increasing the amount invested in newly established or existing enterprises. <i>Direct investment by means of mergers and acquisitions is not allowed.</i> For the establishment and extension of a domestic branch of a foreign enterprise, approval from the MOFE is required for financial institutions.	Foreign exchange banks may borrow abroad. Borrowing by high-technology, foreign-financed manufacturing companies is allowed up to 100% of the foreign-invested capital. <i>Also, maturity is limited to 3 years or less, and limitations are imposed on the use of funds.</i> Foreign borrowing repayable within 3 years is governed by the Foreign Exchange Act. <i>The maximum maturity period per-</i>	There are sector-specific loan ceilings.	The limits are as follows: (1) overall overbought position, 15% of the total equity capital at the end of the previous month; (2) overall oversold position, 10% of the total equity capital at the end of the previous month or \$20 million, whichever is greater; and (3) spot oversold position, 3% of the total equity capital or \$5 million, whichever is greater.

**Appendix 2. (cont.) Inventory of Controls on Capital Transactions in Asia and Latin America Prior to the 1997 Crises**

Country (date of information)	Controls on Foreign Ownership		Controls on Credit Operations		
	On capital market securities purchased by nonresidents	Foreign direct investment in financial/banking sectors	Commercial or financial credits to residents from nonresidents	Lending locally in foreign exchange	Open foreign exchange position limits
Malaysia (12/31/96)	<p>mission, nonresidents require prior approval from the Ministry of Finance and Economy (MOFE).</p> <p>No exchange controls apply to a resident for the sale of securities abroad, but approval is required. Approval is given if the proceeds are used to finance domestic productive activities, particularly for projects that generate foreign exchange earning or save on the future outflow of foreign exchange through the productions of import substitution goods.</p>	<p>The following inward investments require prior approval from the Foreign Investment Committee (FIC): (1) acquisition of any substantial fixed assets by foreign interests; (2) acquisition of assets or interests, mergers, and takeovers of companies and businesses in Malaysia by any means that will cause ownership or control to pass to foreign interests; (3) acquisition of 15% or more of the voting power (equity interests) by any foreign interest or associated group or by a foreign interest in the aggregate of 30% or more of the voting power of a Malaysian company or business; (4) control of Malaysian companies and businesses through any form of joint-venture agreement, management agreement, or technical assistance arrangement.</p>	<p><i>mitted for deferred payments is 180 days for imports of raw materials for export production.</i></p> <p>A resident is permitted to obtain total credit in foreign currency of up to RM 5 million from licensed banks, licensed merchant banks, and nonresidents. Any larger amount would require the prior approval of the Controller of Foreign Exchange. Residents are not allowed to obtain loans in ringgit from nonresidents.</p>	<p>Authorized dealers and merchant banks are allowed to lend in foreign currency to residents.</p>	<p>The criteria in determining banks' net overnight foreign currency open position limits are based on a matrix that takes into account their shareholders' funds and dealing capacity.</p>
Philippines (3/31/97)	<p>Registration with the Bangko Sentral ng Pilipinas (BSP) or designated custodian bank is required. Registration is necessary only if the source of the foreign</p>	<p>None.</p>	<p>As a general rule, all foreign loans contracted by nonbank residents with guarantees from the public sector or from local commercial banks require prior</p>	<p>The following foreign currency loans may be granted by Foreign Currency Deposit Unions (FCDUs) of commercial banks <i>without prior BSP approval</i>: (1) pri-</p>	<p>Depository banks operating FCDUs or Expanded Foreign Currency Deposit Units (EFCDUs) need to maintain full cover for their foreign currency liabilities at all times. For FCDUs, at least</p>

**Appendix 2. (cont.) Inventory of Controls on Capital Transactions in Asia and Latin America Prior to the 1997 Crises**

<i>Country (date of information)</i>	<i>Controls on Foreign Ownership</i>		<i>Controls on Credit Operations</i>		
	<i>On capital market securities purchased by nonresidents</i>	<i>Foreign direct investment in financial/banking sectors</i>	<i>Commercial or financial credits to residents from nonresidents</i>	<i>Lending locally in foreign exchange</i>	<i>Open foreign exchange position limits</i>
	exchange needed for capital repatriation and remittance of dividends, profits and earnings which accrue thereon is purchased from the banking system.		BSP approval or registration. Those not covered by guarantees are required to be registered only to make them eligible for subsequent debt servicing using foreign exchange from the banking system.	vate sector loans, if they are to be serviced using foreign exchange to be obtained outside the banking system; (2) <i>short term loans to financial institutions for normal interbank transactions</i> ; and (3) short term loans to commodity and service exporters, and producers/manufacturers, provided that the loan proceeds are to be used to finance the import costs of goods and services necessary in the production of goods. Commercial banks may also grant foreign currency loans to residents involving trade transactions.	70% of the said cover must be maintained in the same currency of the liability and up to 30% may be denominated in other acceptable foreign currencies. Long and short foreign exchange positions of banks must not exceed 20% and 10% respectively, of their total unimpaired capital. Any excess beyond the limit must be settled daily.
Thailand (12/31/96)	Foreign equity participation is limited to 25% of the paid-up registered capital of locally incorporated banks, finance companies, credit finance companies, and asset management companies. The combined share holdings of an individual and his/her related family members must not exceed 5% of a bank's paid up registered capital and 10% of that of finance companies and credit foncier companies. Foreign equity participation is limited to 49% for other Thai corporations.	Foreign capital may be brought into the country without restriction, but proceeds must be surrendered to authorized banks or deposited in foreign currency accounts with authorized banks in Thailand within 15 days of receipt.	There is no restriction on these credits. Repayment of financial credits to nonresidents can be made freely as long as residents have an obligation to pay to nonresidents in foreign currency.	Commercial lending to particular industries denominated in foreign currencies can be partially (50%) included as foreign assets in order to recognize the potential risk that banks may not be fully repaid as exchange rate risk heightened.	The limit imposed is between -15% (for a negative balance) and 20% (for a positive balance).

**Appendix 2. (cont.) Inventory of Controls on Capital Transactions in Asia and Latin America Prior to the 1997 Crises**

<i>Country (date of information)</i>	<i>Controls on Foreign Ownership</i>		<i>Controls on Credit Operations</i>		
	<i>On capital market securities purchased by nonresidents</i>	<i>Foreign direct investment in financial/banking sectors</i>	<i>Commercial or financial credits to residents from nonresidents</i>	<i>Lending locally in foreign exchange</i>	<i>Open foreign exchange position limits</i>
Hong Kong (12/31/96)	No exchange control requirements are imposed on capital receipts or payments by residents or nonresidents. A license or an authorization is required for companies, whether incorporated in Hong Kong or elsewhere, to conduct banking, insurance, securities, and futures dealings. Otherwise, all overseas companies are required only to register with the Companies Registry within 1 month of establishing a business in Hong Kong.	None.	None.	None.	Authorized institutions are required to report to the Hong Kong Monetary Authority (HKMA) their foreign currency positions (including options) monthly. Locally incorporated institutions are required to report their consolidated foreign currency positions. The aggregate net open position (calculated as the sum of net long/short positions of individual currencies) should normally not exceed 5% of the capital base of the institution, and the net open position in any individual currency should not exceed 10% of the capital base. For subsidiaries of foreign banks, where the parent consolidates the foreign exchange risk on a global basis and there is adequate home supervision, the HKMA may accept higher limits. For branches of foreign banks, the HKMA reviews and monitors the internal limits, which are usually set by their head offices and home supervisory authorities.
Singapore (12/31/96)	None.	None.	None.	None.	None.
Argentina (12/31/96)	None.	None.	None.	None.	None.

**Appendix 2. (cont.) Inventory of Controls on Capital Transactions in Asia and Latin America Prior to the 1997 Crises**

Country (date of information)	Controls on Foreign Ownership		Controls on Credit Operations		
	On capital market securities purchased by nonresidents	Foreign direct investment in financial/banking sectors	Commercial or financial credits to residents from nonresidents	Lending locally in foreign exchange	Open foreign exchange position limits
Brazil (5/31/97)	The direct purchase of shares of Brazilian companies by nonresidents basically occurs through direct investments and portfolio investments made by institutional investors through the managers of the respective portfolios. Depository receipts (DRs) constitute another method of acquiring shares through stock exchanges. They provide a mechanism for the placement of shares of Brazilian enterprises in the international markets. Earnings from variable-income investments are subject to a 10% income tax withholding and those from fixed-income investments to a 15% income tax withholding. Remittances of capital gains are subject to income tax at a rate of 15%.	Investments in commercial banks are limited to 30% of the voting capital, if there are restrictions on the operations of Brazilian banks in the markets where their main offices are located. The establishments in Brazil of new branches of financial institutions domiciled abroad is prohibited. Also, any increase in the percentage of equity participation in financial institutions headquartered in Brazil by natural or juridical persons resident or domiciled abroad is prohibited, except for authorizations resulting from international agreements, from reciprocity arrangements, or in the interest of the Brazilian government as expressed by presidential decree.	The proceeds of financial credits granted to residents must be kept within the country, and the resources must be used for investment in economic activities. Exchange contracts involving the entry of foreign exchange in connection with borrowing are subject to prior approval by the Central Bank of Brazil (CBB).  A 15% income tax rate is levied on remittances of interest and other income associated with foreign loan operations, except when bilateral agreements to avoid dual taxation specify another rate or when the borrower or lender is tax exempt.  The federal government, states, municipalities, the federal district, and their foundations and agencies, as well as multilateral organizations and foreign government agencies located abroad, are exempted.	All contracts, securities, or other documents, as well as any obligations executable in Brazil that require payments in foreign currency, are null and void. Consequently, banks are prohibited from granting foreign currency loans within Brazil. However, this restriction does not apply to the onlending of external foreign currency loans.	Limits differ according to the exchange market in which the transactions take place as follows: (1) banks authorized to conduct foreign exchange operations in the free exchange rate market may hold long positions of up to US\$5 million, including all currencies and all of each bank's branches. Amounts exceeding this ceiling must be deposited with the CBB in U.S. dollars. The ceiling on banks' short exchange position is contingent upon each bank's adjusted net worth; and (2) on the floating exchange rate market, the following ceilings have been set: a) for licensed banks, the long exchange position is US\$1 million (any amount in excess of this ceiling must be deposited with the CBB), and the short exchange position is contingent on the institution's adjusted net worth; b) for licensed dealers (brokerage firms; securities distributors; and credit, financing, and investment enterprises), the ceiling on the long exchange position is US\$500,000 and no short exchange position is allowed.
Colombia (12/31/96)	The purchase of 10% or more of the shares of a Colombian financial institution requires the prior approval of the Superintendency of Banks. Foreign investments in the form of	Up to 100% ownership in any sector of the economy, except in defense, waste disposal, and real estate, is allowed. Special regimes remain in effect in the	Yes (not specified).	None.	The limit is 20% of net worth. There are no regulations governing the net foreign exchange positions of exchange houses; they may sell their excess foreign holdings to authorized financial intermediaries because they do

**Appendix 2. (cont.) Inventory of Controls on Capital Transactions in Asia and Latin America Prior to the 1997 Crises**

<i>Country (date of information)</i>	<i>Controls on Foreign Ownership</i>		<i>Controls on Credit Operations</i>		
	<i>On capital market securities purchased by nonresidents</i>	<i>Foreign direct investment in financial/banking sectors</i>	<i>Commercial or financial credits to residents from nonresidents</i>	<i>Lending locally in foreign exchange</i>	<i>Open foreign exchange position limits</i>
	placement of shares in a fund established to make investments in the stock exchange and in debt papers issued by the financial sector are permitted.	financial, petroleum, and mining sectors.			not have access to the Banco de la República.
Chile (4/30/97)	Nonresidents can invest in domestic securities in 3 ways: 1) acquisition by foreign investment funds. Investments cannot exceed 5% of social capital in any 1 company and 10% of the funds' total assets. Funds cannot invest more than 40% of their portfolios in equities of the same holding period, and all funds as a group may not hold more than 25% of the equities of the same open society. Other requirements for Foreign Investment Funds (FICEs) are a 5-year minimum holding period, a profit tax of 10%, and some portfolio restrictions that vary with the duration of the holding period; 2) purchase of fixed income securities and equities subject to a reserve requirement of 30% for 1 year, and a minimum holding period requirement of 1 year and to the general income tax law. Some equities can be acquired in the country and converted into American Depository	Capital contributions to new establishments or shares in existing ones are subject to a 1-year minimum holding period and a minimum amount of US\$10,000. Projects of significant size may be undertaken; there is a minimum holding period of 1 year, and the investor enjoys favorable taxation treatment with regard to the choice between the general income tax law or the guaranteed payment profit tax of 42%. There is also guaranteed access to the formal exchange market for repatriation.	Financial credits can be contracted with foreign banks and financial entities, subject to a 1-year 30% reserve requirement, a 4% tax on interest, and a stamp tax of 1.2%.	Banks are only permitted to grant foreign exchange credits associated with foreign trade, but may grant loans or acquire securities denominated or expressed in foreign exchange provided they remain within the open position limits.	The limit is 20% of capital and reserves, including derivative and spot instruments, foreign investment, assets and liabilities issued abroad or denominated in foreign exchange. There is a foreign financial investment ceiling of 25% of the capital and reserves of each bank, a maximum investment in subsidiaries and branches abroad of 20% of capital and reserves of domestic banks, and a requirement that the balance of all acquisitions and sales of foreign exchange for a bank be positive.

**Appendix 2. (cont.) Inventory of Controls on Capital Transactions in Asia and Latin America Prior to the 1997 Crises**

Country (date of information)	Controls on Foreign Ownership		Controls on Credit Operations		
	On capital market securities purchased by nonresidents	Foreign direct investment in financial/banking sectors	Commercial or financial credits to residents from nonresidents	Lending locally in foreign exchange	Open foreign exchange position limits
Mexico (2/28/97)	<p>Receipts (ADRs) subject to the 30% reserve requirement. The issuance of primary ADRs is exempt from the above restrictions, but the issuers are subject to minimum international rating requirements and there is a minimum amount to be issued; and 3) loans can be used to purchase securities in the country, subject to the 1 year reserve requirement of 30%, a 4% tax on interest payments, and a 1.2% stamp tax.</p> <p>None.</p>	<p>Investments in credit unions and development banks are reserved exclusively for Mexican nationals or Mexican corporations with a foreign exclusion clause. Acquisition of more than 49% of the equity in a Mexican corporation requires prior authorization if the total value of assets exceeds \$2 million. <i>Ceilings on foreign ownership are applied to financial institutions.</i></p>	<p>There are limits on credits denominated in foreign currency.</p>	<p>Banks are permitted to lend locally in foreign currencies but the debt may be discharged by delivering the equivalent amount in accordance to the rate of exchange in domestic currency.</p>	<p>The liabilities of commercial banks denominated in foreign currency must not exceed the larger amount of either (1) 10% of the daily balances of their liabilities in the previous quarter plus and additional 4% of such liabilities if those resources are used to finance foreign trade transactions or capital goods purchases, or (2) 1.6 times the net capital of the institution. Commercial banks must balance their positions in foreign currency on a daily basis subject to a covered exchange rate risk, irrespective of the residence of the lender. Short and long positions are acceptable as long as they do not exceed 15% of the bank's net capital.</p>

**Appendix 2. (cont.) Inventory of Controls on Capital Transactions in Asia and Latin America Prior to the 1997 Crises**

<i>Country (date of information)</i>	<i>Controls on Foreign Ownership</i>		<i>Controls on Credit Operations</i>		
	<i>On capital market securities purchased by nonresidents</i>	<i>Foreign direct investment in financial/banking sectors</i>	<i>Commercial or financial credits to residents from nonresidents</i>	<i>Lending locally in foreign exchange</i>	<i>Open foreign exchange position limits</i>
Peru (12/31/96)	None.	None for financial/banking sectors.	None.	None.	None.
Venezuela (1/31/97)	Foreign investors are allowed to purchase corporate stocks in the Caracas Stock Exchange but must inform the Superintendency of Foreign Investment (SIEI) of such purchases at the end of each calendar year.	New investments do not require prior authorization from the SIEI but must be registered with the SIEI after the fact, and approval is automatically granted if the new investment is consistent with national legislation.	None.	Local banks can make loans denominated in foreign exchange.	The net position cannot exceed 25% of bank's capital.

Source: IMF (1997a)

**APPENDIX 3: DATA DEFINITIONS AND SOURCES****Table 1. International Bank Loans and Foreign Currency Exposure**

Debt by maturity and sector are in billions of US \$ and as a ratio of total reserves, where total reserves are those prior to July 1997. Total reserves are the sum of the US \$ value of monetary authorities' holdings of SDRs, reserve position in the Fund, and foreign exchange. Total reserves don't include gold.

The source was the Bank for International Settlements (1998).

**Table 2. Regional Export Structure in Latin America and Asia**

Exports to developing Asia (includes China and India). The figures are percentages and were calculated by taking the ratio of each of the countries' exports to developing Asia to the total value of exports.

The source was the Direction of Trade Statistics database of the IMF. Exports in US \$ f.o.b. (line 70dzf).

**Table 3. Macroeconomic Projections for Latin America before and after the Asian Crises**

The following macroeconomic indicators are included in this table: 1) GDP growth rate: projections of annual percentage growth rates of GDP at market prices in local currency at constant prices; 2) inflation: projections of December to December change in consumer price indexes; 3) current account balances: projections of current account balances as percentages of GDP; and 4) projections of the non-financial public sector balances.

The sources were World Bank staff projections.

**Table A1. Banks and Credit Ratings**

The source was the Bank for International Settlements (1997, p. 116).

**Table A2. Current Account Balances in Latin America and Asia, 1991–1997**

The current account balances for the Latin American countries were obtained from the World Development Indicators database of the World Bank; 1997 estimates were provided by World Bank staff. In the case of East Asian countries, current account balances are from the World Economic Outlook database and the IFS of the IMF; 1997 estimates are from IMF staff.

**Table A3. Gross Private Capital Flows to Developing Countries in 1997**

The source was the World Bank's Global Economic Prospects, 1998 issue (forthcoming.)

**Figure 2. Total Reserves minus Gold over M2 in Asia and Latin America, 1992–1997**

Total reserves minus gold is the sum of the US \$ value of monetary authorities' holdings of SDRs, reserve position in the Fund, and foreign exchange. M2 or broad money is defined as money (the sum of currency outside banks and demand deposits other than those of the central banks) plus quasi-money (time deposits, savings deposits, and foreign currency deposits other than those of the central banks).

The source was the IFS database, IMF. Total reserves minus gold (line 11.d); M2 (line 35l).

**Figure 4. Stock Price Indexes in Latin America and Crisis Asia, July 1997–January 1998**

The following stock price indexes were used:

Argentina	Merval
Brazil	Bovespa
Chile	General (IGPA)
Colombia	IBB
Mexico	IPC
Peru	General
Venezuela	IBC

Indonesia	Jakarta Composite
Korea	Korea Composite (KOSPI)
Malaysia	Kuala Lumpur Composite
Philippines	Philippines Composite
Thailand	Bangkok S.E.T.

The local currency indexes were divided by their respective nominal exchange rates and then the indexes were converted to base July 1, 1997=100 by using the following formula:

$$PI = (PI_t / PI_{Base}) * 100$$

where,

PI is the stock price index rebased to July 1, 1997=100,  
 $PI_t$  is the daily price index at day t, and  
 $PI_{Base}$  is the price index of the day used as base: July 1, 1997.

The source was Banker's Trust Economics and Strategy Group, based on data from Datastream.

### Figure 5. Evolution of Nominal Exchange Rates in Latin America, July 1, 1997–January 28, 1998

Nominal exchange rates were converted to base July 1, 1997=100 by using the following formula:

$$e = (e_t / e_{Base}) * 100$$

where,

$e$  is the nominal exchange rate with base July 1, 1997 =100,  
 $e_t$  is the nominal exchange rate at day t, and  
 $e_{Base}$  is the nominal exchange rate of the day used as base: July 1, 1997.

The source was Banker's Trust Economics and Strategy Group, based on data from Datastream.

### Figure A1. Real Effective Exchange Rates, 1992–1997

The methodology used by the Information Notice System (INS) department of the IMF to

derive the real effective exchange rate is as follows:

$$REER_j = (CPI_j ERI_j) / EXP \sum_{i=1}^n (WT_{ji} * \text{Log}(CPI_i * ERI_i)) * 100$$

where,

REER is the real effective exchange rate index.  
 ERI is a nominal exchange rate index. It is computed from a monthly time series of exchange rates expressed as US \$ per domestic currency. The ERI series is the arithmetic average of the monthly rate of exchange between the national currency and the US \$.  
 CPI is the series of consumer price indexes.  
 $j$  is the index for reporting country  
 $n$  is the number of partner countries to  $j$   
 $i$  is the index of partner country,  $i=1, \dots, n$   
 $WT_{ji}$  is the weight that country  $j$  attaches to country  $i$ . Currently, weights are based on trade flows averaged over 1980–82.

The source was the IFS database, IMF.

### Figure A2. Merchandise Export Revenues in US\$

Merchandise exports f.o.b. in US \$. They are customs statistics reported under the general trade system. A twelve-month moving average was calculated. The twelve-month moving average was then based to January 1992=100 and the following formula was used:

$$ME = (ME_t / ME_{Base}) * 100 ,$$

where,

ME is the index of Merchandise exports with base Jan. 1992=100,  
 $ME_t$  is the merchandise export value of month t, and  
 $ME_{Base}$  is the Merchandise export value for January 1992.

The source was the IFS database, IMF Merchandise exports f.o.b. in US \$ (line 70dzf).

### Figure A3. Claims on the Private Sector, 1992–1997

Claims on the private sector includes those institutions that accept transferable deposits and institutions that do not accept transferable deposits but that engage in financial intermediation. The data for Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuela, and Malaysia are consolidated claims on private sector of the whole banking system. In the case of China, Indonesia, Hong Kong, Taiwan, and Thailand, claims on private sector refers to those of deposit money banks. And in the case of Singapore, Philippines, and Korea, claims on private sector of deposit money banks plus other banking institutions are used.

The source was the International Financial Statistics (IFS) database, International Monetary Fund (IMF). Line 52d was used in the case of the first group of countries above; line 22d was used in the case of the second group; and line 22d plus line 42d was used for the last group.

### Figure A4. Stock Market Prices in US\$, 1990–98

The price indexes used for each of the countries were the following:

China	Shanghai Composite
Hong Kong	Hang Seng
Indonesia	Jakarta Composite
Korea	Korea Composite (KOSPI)
Malaysia	Kuala Lumpur Composite
Philippines	Philippines Composite
Singapore	Singapore DBS 50
Taiwan	Taiwan SE weighted price index
Thailand	Bangkok S.E.T.
Argentina	Merval
Brazil	Bovespa
Colombia	SE (IBB)
Chile	General (IGPA)
Mexico	IPC (Bolsa)
Peru	SE General (IGBL)
Venezuela	SE General

The local currency indexes were divided by the nominal exchange rate. In turn, the price indexes were converted to base June 30, 1992=100 by using the following formula:

$$PI = (PI_t / PI_{Base}) * 100$$

where,

PI is the stock market price index rebased to June 30, 1992 =100,

PI<sub>t</sub> is the daily stock price index at day t, and PI<sub>Base</sub> is the stock price index of the day used as base: the base year for all the countries is June 30, 1992, except for Argentina and Venezuela where December 31, 1993 is the base.

The source for the data is Banker's Trust Economics and Strategy Group, based on data from Datastream.

### Figure A5. Stock Market Prices in US\$, 1996–98

In this figure, the price indexes of Hong Kong (Hang Seng), Indonesia (Jakarta Composite), Korea (Kospi), Malaysia (Kuala Lumpur Composite), Philippines (Philippines Composite), and Thailand (Bangkok S.E.T.) were rebased to July '97=100.

### Figure A6. Net Foreign Assets over M2 (Banking System)

Net foreign assets refers to the difference between foreign assets and foreign liabilities of deposit money banks. Net foreign assets were then divided by M2 or broad money, which is defined as money (the sum of currency outside banks and demand deposits other than those of central banks) plus quasi-money (time deposits, savings deposits, and foreign currency deposits other than those of central banks).

The source was IFS database, IMF Foreign assets (line 21); foreign liabilities (line 26c); and M2 (line 35l).

**Figure A7. Volatility of Stock Market Prices**

A moving 20-day standard deviation and a moving 20-day average were calculated from the stock market price indexes. A variation coefficient was then calculated by dividing the moving 20-day standard deviation by the moving 20-day average.

The source of the stock price indexes was Banker's Trust Economics and Strategy Group, based on data from Datastream.

**Figure A8. Ten Year US Treasury Bond Yield Rate**

This is the yield rate of the ten-year U.S. Treasury bond.

The source was Banker's Trust Economics and Strategy Group, based on data from Datastream.

**Figure A9. Stock Price Indexes in Hong Kong, the U.S., Japan, and the U.K., July 1997–January 1998**

The following stock price indexes were used:

Hong Kong	Hang Seng
Japan	Nikkei
U.S.	S&P 500
U.K.	FTSE 100

The local currency indexes were divided by their respective nominal exchange rates (except the U.S. S&P 500) and then the indexes were converted to base July 1, 1997=100 by using the following formula:

$$PI = (PI_t / PI_{Base}) * 100$$

where,

PI is the stock price index rebased to July 1, 1997 =100,

$PI_t$  is the daily price index at day t, and

$PI_{Base}$  is the price index of the day used as base: July 1, 1997.

The source was Banker's Trust Economics and Strategy Group, based on data from Datastream.

# NOTES

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<sup>1</sup> On the relation among institutions, financial development, and growth see La Porta et al. (1997) and Levine (1997). On the relation between institutions and growth see Knack and Keefer (1995) and Keefer and Knack (1997).

<sup>2</sup> For example, see Dornbusch et al. (1995) and Sachs et al. (1996).

<sup>3</sup> In fact, most Asian stock markets fell after China's devaluation in January 1994, see Figure A4.

<sup>4</sup> Young and Kwon (1998) also use the term "crony capitalism."

<sup>5</sup> On the liberalization of the capital account and financial deregulation undertaken in the late 1980s and early 1990s by Indonesia and Thailand, see Bhattacharya and Pangestu (1997, 419–420) and Kawai (1997, 8–9), respectively.

<sup>6</sup> It must be recognized, however, that this appreciation was not as pronounced as that experienced by some Latin American countries prior to the "tequila" crisis of December 1994.

<sup>7</sup> On the evolution of commodity prices see World Bank (1998c).

<sup>8</sup> This is true in highly dollarized economies such as Bolivia, Paraguay, and Peru. The fact that they have flexible exchange rates suggest, however, that corporations may have been careful in taking unhedged exposures.

<sup>9</sup> See Appendix 2.

<sup>10</sup> In the case of Argentina, as for other dollarized, rigid-exchange-rate economies such as Hong Kong and Singapore, the data on reserves does not include the dollar deposits and reserves held by subsidiaries of foreign banks. The debt data does include the claims in foreign currency made by these subsidiaries in the domestic market. According to data from the Central Bank of Argentina, when we subtract the claims of the subsidiaries, the ratio of short-term claims to reserves is cut in half.



# REFERENCES

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- Bank for International Settlements. 1997. *67th Annual Report*. Basle, Switzerland: BIS.
- . 1998. *The Maturity, Sectoral and Nationality Distribution of International Bank Lending, First Half 1997*. Basle, Switzerland: BIS.
- Bhattacharya, Amar, and Mari Pangestu. 1997. "Indonesia: Development Transformation and the Role of Public Policy." Chapter 7 in *Lessons from East Asia*, edited by D. Leipziger. Ann Arbor: The University of Michigan Press.
- Calvo, Guillermo. 1995. "Varieties of Capital Market Crises." Mimeographed, Center for International Economics, University of Maryland at College Park.
- Dornbusch, Rudiger. 1998. "Asian Currency Crises." Mimeographed, Department of Economics, Massachusetts Institute of Technology, Cambridge, Mass.
- Dornbusch, Rudiger, Ilan Goldfajn, and Rodrigo O. Valdes. 1995. "Currency Crises and Collapses." *Brookings Papers on Economic Activity* 2: 219–270.
- International Monetary Fund. 1997a. *Exchange Arrangements and Exchange Restrictions Annual Report 1997*. Washington, DC: IMF.
- . 1997b. *World Economic Outlook: Interim Assessment, December 1997*. Washington, DC: IMF.
- Kawai, Masahiro. 1997. "East Asian Currency Turbulence: Implications of Financial System Fragility." Mimeographed, Institute of Social Science, University of Tokyo, Japan.
- Keefer, Philip, and Stephen Knack. 1997. "Why Don't Poor Countries Catch Up? A Cross-National Test of an Institutional Explanation." *Economic Inquiry* 35: 590–602.
- Knack, Stephen, and Philip Keefer. 1995. "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." *Economics and Politics* 7(3):207–227.
- Krugman, Paul. 1998. "What Happened to Asia?" Mimeographed, Department of Economics, Massachusetts Institute of Technology, Cambridge, Mass. [<http://web.mit.edu/krugman>]
- La Porta, Rafael, Florencio López-de-Silanes, Andrei Shleifer, and Robert W. Vishny. 1997. "Legal Determinants of External Finance." *Journal of Finance* 52: 1131–1150.
- Levine, Ross. 1997. "Law, Finance, and Economic Growth." Mimeographed, Department of Economics, University of Virginia, Charlottesville.
- Sachs, Jeffrey D., Aaron Tornell, and Andrés Velasco. 1996. "Financial Crises in Emerging Markets: The Lessons from 1995." *Brookings Papers on Economic Activity* 1: 147–215.
- World Bank. 1998a. *Global Development Finance*. Forthcoming.
- . 1998b. *Global Economic Prospects, 1998*. Forthcoming.
- . 1998c. *Commodity Markets and the Developing Countries: A World Bank Business Quarterly*. Washington, DC: The World Bank, February.
- Young, Soogil, and Jae-Jung Kwon. 1998. "Korean Economy under the IMF Program." Mimeographed, Korea Institute for International Economic Policy, Seoul, S. Korea.

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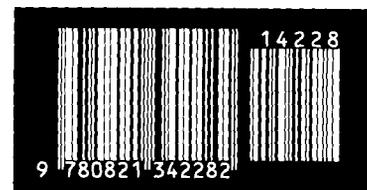
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