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**International Capital Flows,  
Financial Stability and Growth***Graciela L. Kaminsky*

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**Abstract**

The explosion and dramatic reversal of capital flows to emerging markets in the 1990s have ignited a heated debate, with many arguing that globalization has gone too far and that international capital markets have become extremely erratic. In contrast, others have emphasized that globalization allows capital to move to its most attractive destination, fuelling higher growth. This paper re-examines the characteristics of international capital flows since 1970 and summarizes the findings of research of the 1990s on the behaviour of international investors as well as the short- and long-run effects of globalization on financial markets and growth.

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Keywords: international capital flows, globalization, mutual funds, stock market prices, financial liberalization.

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**Graciela L. Kaminsky** is currently a professor of Economics and International Affairs at George Washington University. She received her Ph.D. from MIT and was assistant professor of economics at the University of California, San Diego, and staff economist at the Board of Governors of the Federal Reserve System before joining George Washington University. She has been a consultant and Visiting Scholar at the IMF, the World Bank, and the Inter-American Development Bank. She has also been a consultant to the Banco de España and the Korean Center for International Finance and visiting scholar to the Banco de Mexico, Bank of Japan, Hong Kong Monetary Authority and Institute of International Economics, University of Stockholm. She was a visiting professor at the Department of Economics, Johns Hopkins University, Universidad de Los Andes (Bogotá, Colombia), Universidad di Tella and Universidad San Andrés, both in Buenos Aires, Argentina. She has published extensively on issues in open economy macroeconomics. In the last few years, her areas of research have been on financial crises, contagion, herding behaviour, the effects of financial liberalization, and mutual-fund investment-strategies.

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United Nations  
Department of Economic and Social Affairs  
2 United Nations Plaza, Room DC2-1428  
New York, N.Y. 10017, USA  
Tel: (1-212) 963-4761 • Fax: (1-212) 963-4444  
e-mail: [esa@un.org](mailto:esa@un.org)  
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# International Capital Flows, Financial Stability and Growth

*Graciela L. Kaminsky*<sup>1</sup>

The explosion of capital flows to emerging markets in the early and mid-1990s and their reversal following the crises in Asia, Latin America and the transition economies have reignited a heated debate on the benefits and drawbacks of financial globalization. Many have argued that globalization has gone too far and that international capital markets have become extremely erratic, with “excessive” booms and busts in capital flows triggering bubbles and financial crises and magnifying the business cycle. In contrast, the traditional view asserts that international capital markets enhance growth and productivity by allowing capital to flow to its most attractive destination.

Even if international capital flows do not trigger excess volatility in domestic financial markets, it is still true that large capital inflows can spark off inflation in the presence of a fixed exchange-rate regime. Moreover, transitory capital inflows may distort relative prices, with the domestic economy losing competitiveness as a result of the appreciation of the real exchange rate. Therefore, it is no wonder that policy makers have used a variety of tools to manage these flows, especially flows of the “hot money” type.

This paper re-examines the evidence on the characteristics of international capital flows since 1970 and summarizes some of the findings of the research conducted in the 1990s on the effects of globalization. It first presents a brief history of international capital flows to emerging markets, paying particular attention to the volatility of bank lending and portfolio flows. Second, the paper reviews the literature on the behaviour of mutual funds specializing in emerging markets as well as the lending behaviour of European, Japanese and United States banks to emerging markets around the time of the Mexican, Thai and Russian crises. The results suggest that episodes of surge in capital inflows do, in fact, end abruptly – whether owing to home-grown problems or contagion from abroad. Third, the paper reviews the evidence on the short- and long-run effects of financial deregulation on financial and real cycles. Interestingly, the stylized evidence suggests that although financial liberalization may trigger excessive booms and busts in the short-run, financial markets tend to stabilize and growth accelerates in the long run. This section also examines briefly the linkages between globalization and institutional reform. Fourth, the paper reviews the literature on managing international capital flows. The conclusion summarizes what we know about financial globalization and examines policy options.

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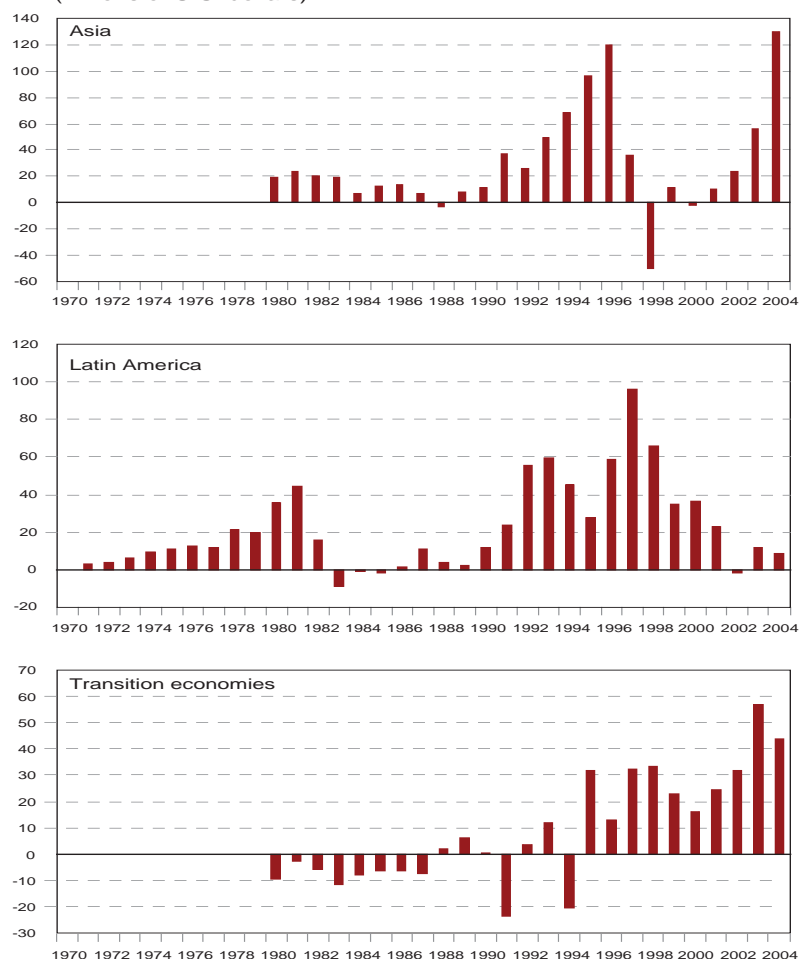
<sup>1</sup> This paper draws on previous research with Richard Lyons, Carmen Reinhart, Sergio Schmukler and Carlos Végh. The paper was previously circulated under the title “Volatile International Capital Flows: A Blessing or a Curse?” I would like to thank José Antonio Ocampo for his very useful comments, and Victor Cheng and Nilanjana Sarkar for their excellent research assistance.

## A brief history of capital flows

The 1970s witnessed a remarkable boom of capital flows to emerging economies. The dramatic surge in international capital flows was triggered by the oil shock in 1973-1974, the growth of the Eurodollar market and the remarkable increase in bank lending during 1979-1981. Latin America was the main recipient of this heavy capital inflow, with capital flows to the region peaking at US\$44 billion in 1981 (see figure 1). Overall, capital inflows to this region, which mostly took the form of syndicated bank loans (see figure 2), reached about 6 per cent of the region's gross domestic product (GDP). The pace of international lending came to an abrupt end in 1982 with the hike in world real interest rates to levels not seen since the 1930s. Suddenly, emerging countries became the pariahs of international capital markets and they were not only excluded from voluntary capital markets but also forced to run current-account surpluses to repay their foreign debts.

By the late 1980s, there was a revival of international lending. While flows to Latin America made a tremendous comeback, capital inflows to Asia also surged, with capital flows increasing tenfold from their averages in the early 1980s. This time, however, the composition of capital flows changed, bank lending having been replaced by foreign direct investment (FDI) and portfolio investment. Bank

Figure 1:  
Private capital flows to emerging markets  
(Billions of U.S. dollars)



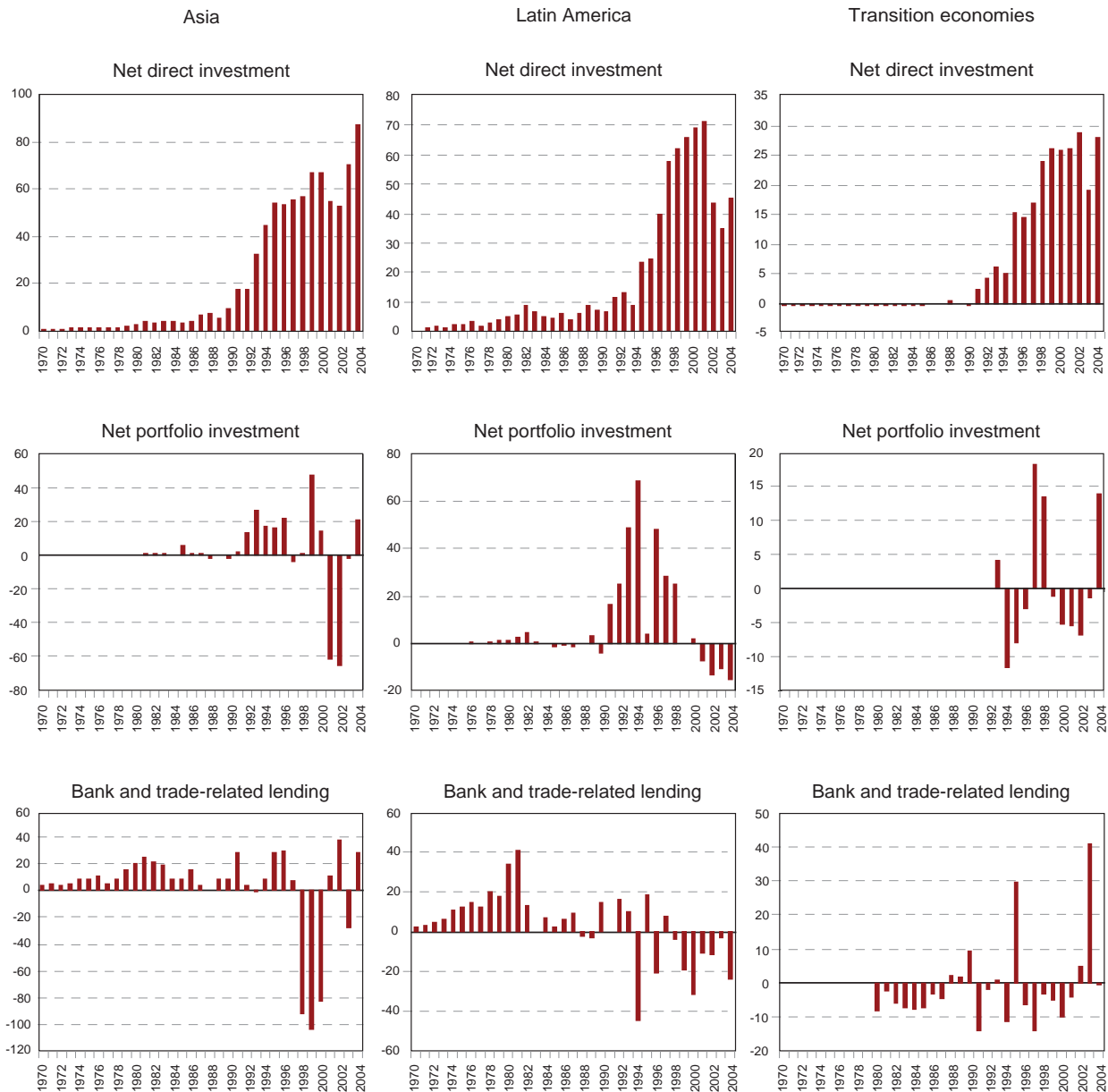
Source: World Economic Outlook 2005

Note: The countries comprising Asia are Bangladesh, China, Hong Kong, India, Indonesia, Malaysia, Pakistan, the Philippines, Singapore, South Korea, Taiwan, Thailand and Viet Nam.

The countries comprising Latin America are Argentina, Brazil, Chile, Colombia, the Dominican Republic, Ecuador, Guatemala, Mexico, Peru, Uruguay and Venezuela.

The countries comprising the transition economies are Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Mongolia, Poland, Romania, Russia, Serbia and Montenegro, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

Figure 2:  
**Composition of private capital flows to emerging markets**  
 (Billions of U.S. dollars)



**Source:** World Economic Outlook 2005

**Note:** The countries comprising Asia are Bangladesh, China, Hong Kong, India, Indonesia, Malaysia, Pakistan, the Philippines, Singapore, South Korea, Taiwan, Thailand and Viet Nam.

The countries comprising Latin America are Argentina, Brazil, Chile, Colombia, the Dominican Republic, Ecuador, Guatemala, Mexico, Peru, Uruguay and Venezuela.

The countries comprising the transition economies are Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Mongolia, Poland, Romania, Russia, Serbia and Montenegro, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

lending to both Asia and Latin America declined from 70 per cent of net private capital flows in the 1970s to about 20 per cent in the 1990s. While FDI constituted the largest share of capital flow to Asia and Latin America, portfolio investment (bonds and equity) also increased substantially, accounting for up to 40 per cent of total capital flows in the mid-1990s. In absolute terms, bond and equity flows to Asia (excluding those counted as FDI) increased to US\$27 billion in 1993 while those to Latin American peaked at US\$69 billion in 1994.

As in the 1980s, booms in the 1990s were followed by capital flow reversals. The first reversal occurred in the immediate aftermath of Mexico's currency crisis in December 1994. For most countries, however, capital flows resumed within a year and returned to their peak values soon thereafter. In the aftermath of that crisis, capital flows to Asian economies were essentially not affected, the crisis being confined to a small number of Latin American countries. The second, more severe reversal came in 1997 during the Asian crisis. This reversal was later aggravated by the Russian default in August 1998 and the Brazilian crisis in 1998-1999. This time, the collapse in capital flows was more pronounced and sustained. The reversal was similar in magnitude to the one witnessed after the debt crisis, with total capital flows to Latin America declining by about 31 per cent in 1998 and declining further by 47 per cent in 1999. The sudden stop in capital flows to Asia was more pronounced, with total capital flows declining from an inflow of US\$120 billion in 1996 to an outflow of US\$50 billion in 1998. The reversal of short-term portfolio flows to Asia (bonds, equities and bank lending) was equally as severe, with flows declining from an inflow of US\$52 billion in 1996 to an outflow of US\$92 billion in 1998. In Latin America, short-term capital flows declined from an approximate inflow of US\$30 billion in 1996 to an approximate outflow of US\$31 billion in 2000.<sup>2</sup>

The evidence from transition economies is similar to that of Asia and Latin America. In the mid 1990s, capital flows boomed, peaking at US\$33 billion in 1998. Portfolio bond and equity flows and bank lending suffered a significant reversal in the late 1990s, with private capital flows declining to US\$16 billion. Capital flows to all emerging markets resumed only in 2003 following the decline in interest rates in industrial countries.

## **The behaviour of mutual funds**

The booms and busts in international capital flows have brought international investors to the limelight. International investors are often seen as the main culprits of financial market instability and have even been the subject of attacks by government officials. Many have argued that, more often than not, international investors panic and withdraw funds from countries with sound fundamentals. Assessing the behaviour of international investors has been a daunting task because data on international investors' portfolios is almost non-existent. Only recently has a novel databank on mutual fund portfolios provided by Emerging Market Funds Research, Inc. become available for research. This databank covers the positions of nearly 1,400 international emerging market equity fund, with an average position of about US\$120 billion in 1996. It

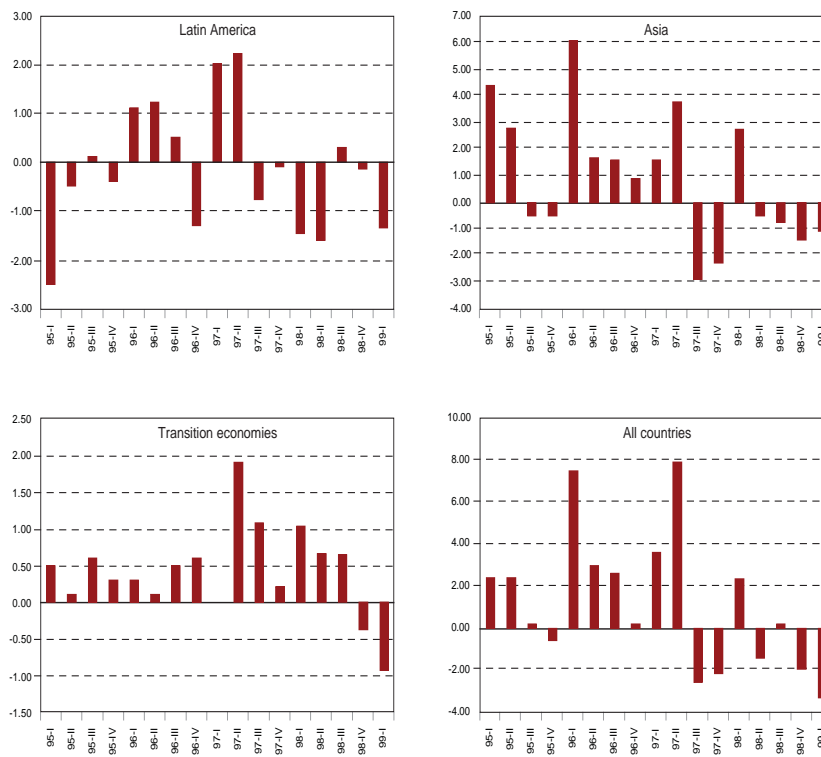
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2 This paper is restricted to the analysis of portfolio and bank-related flows. Still, it is important to note that in contrast to the booms and sudden stops in portfolio and bank flows, FDI to emerging markets continuously increased even in the midst of currency turmoil (in part driven by purchases of firms in distress following the crises). This led many to single out FDI as a stabilizing flow (see, for example, Reisen and Soto (2001) and Sarno and Taylor (1999)) and to support policies encouraging FDI. This reasoning has been challenged by Claessens, Dooley and Warner (1995), who emphasize that capital-flow labels are meaningless in the presence of derivatives or efforts to circumvent capital controls.

includes United States registered and offshore funds as well as funds registered in Luxembourg, the United Kingdom of Great Britain and Northern Ireland, Ireland, the Cayman Islands, Canada and Switzerland. Both open- and closed-end funds are also included in this dataset, which starts at 1995. Kaminsky, Lyons and Schmukler (2002) and Borenzstein and Gelos (2003) have used this dataset to study the behaviour of funds specializing in emerging markets. In particular, they examine whether domestic fragility is at the heart of portfolio decisions by mutual fund managers or whether mutual funds just herd together.

Kaminsky, Lyons and Schmukler describe the evolution of mutual funds in Asia, Latin America and transition economies and then examine the determinants of mutual fund flows to these regions. Their findings are presented in figures 3 and 4 and in table 1. Figure 3 shows the average quarterly net flows to these regions from 1995 to 1999. Mutual fund flows to emerging markets peaked in the second quarter of 1997, reaching about US\$8 billion. Overall, booms in mutual fund flows were followed by reversals. Reversals were not persistent after the Tequila crisis. Outflows from Latin America reached about US\$4 billion in 1995, but mutual funds increased their positions in Latin America by about US\$2 billion in the first half of 1996. The Tequila crisis did not have any spillovers in Asia or in transition economies. In fact, flows to Asia ballooned to almost US\$11 billion in 1996, while flows to transition economies remained stable throughout 1995-1996. The picture changed after the Asian crisis. This time, mutual funds pulled out not only from Asia but also from Latin America, with net outflows in the latter region reaching about US\$1 billion in the six months following the collapse of the Thai baht. Mutual fund withdrawals took a turn for the worse in 1998, reaching about US\$4 billion in Asia and also in Latin America, with substantial outflows from transition economies after the Russian crisis.

Figure 3:  
Mutual funds: quarterly flows to emerging countries  
(Billions of U.S. dollars)



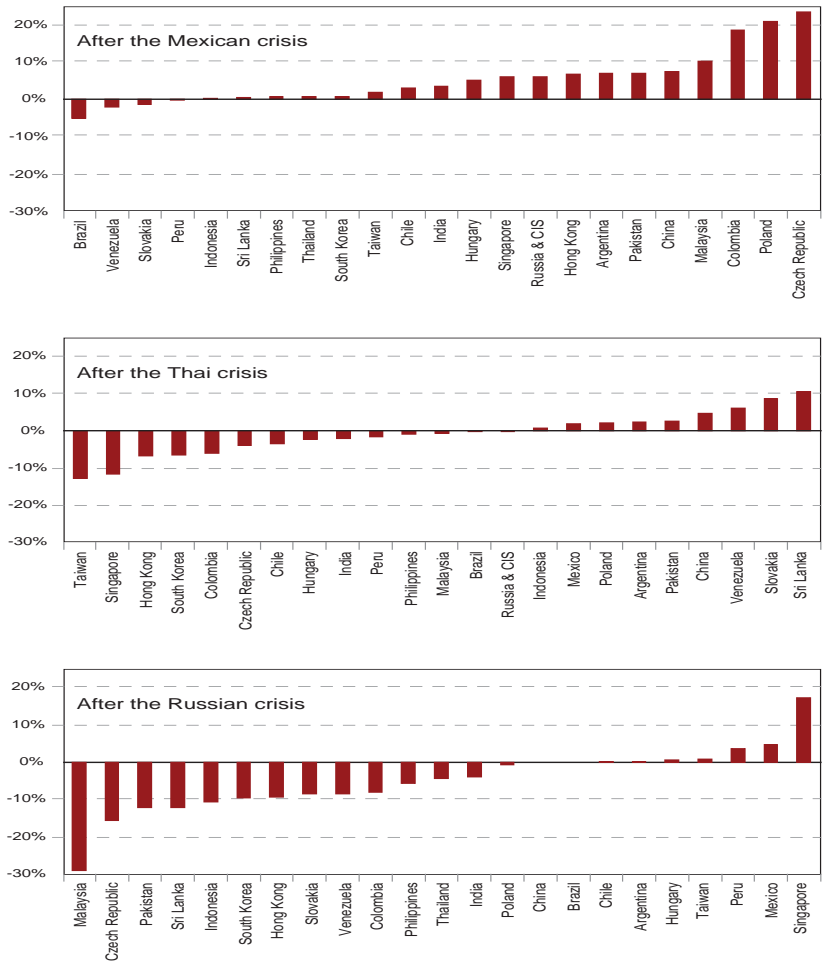
**Source:** Kaminsky, Lyons and Schmukler (2002).

**Note:** Latin America includes Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

Asia includes China, Hong Kong, India, Indonesia, Malaysia, Pakistan, the Philippines, Singapore, South Korea, Sri Lanka, Taiwan and Thailand.

Transition economies include Armenia, Azerbaijan, Belarus, the Czech Republic, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Moldova, Poland, Russia, Slovakia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

Figure 4:  
Mutual fund flows: global spillovers



Source: Kaminsky, Lyons and Schmukler (2002).

Figure 4 assesses the problem of the sudden stops in times of financial turmoil. It reports the average quarterly flows (as a percentage of the mutual funds’ initial positions) to countries in Asia and Latin America, as well as to transition economies in the two quarters following three crises. The top panel looks at the aftermath of the Mexican devaluation in December 1994, the middle panel examines the aftermath of the collapse of the Thai baht in July 1997, and the bottom panel studies the aftermath of the Russian devaluation and moratorium in August 1998. To capture the magnitude of the sudden-stop syndrome, this figure reports total flows relative to average flows (also as percentages of their initial positions) during the whole sample (1995-1999). Following the Mexican devaluation, for example, mutual funds sold about 5 per cent of their Brazilian positions (relative to their average quarterly buying/selling from 1995 to 1999). Thus, as shown in the first panel in figure 3, Brazil experienced unusual withdrawals of about 5 per cent in the aftermath of the Mexican devaluation. As shown in the last panel, Malaysia was the country most affected in the aftermath of the Russian crisis, with abnormal outflows of approximately 30 per cent.

The extent of the mutual fund sudden stop in the aftermath of the three crises was substantially different. The so-called Tequila Crisis was circumscribed to Latin America. Moreover, “abnormal” mutual fund withdrawals in the aftermath of the collapse of the Mexican peso were confined to a handful of Latin American countries, with only Brazil and the Bolivarian Republic of Venezuela – besides the crisis coun-



Table 1.  
The behavior of mutual funds during crises

Region	<i>The Mexican crisis</i>			<i>The Thai crisis</i>			<i>The Russian crisis</i>		
	Percentage of countries with			Percentage of countries with			Percentage of countries with		
	<i>Fragility</i>	<i>Liquid financial markets</i>	<i>Risk</i>	<i>Fragility</i>	<i>Liquid financial markets</i>	<i>Risk</i>	<i>Fragility</i>	<i>Liquid financial markets</i>	<i>Risk</i>
<b>Asia</b>									
With MF withdrawals	..	..	..	43	86	29	40	40	60
Without MF withdrawals	0	42	25	25	0	25	0	100	0
<b>Latin America</b>									
With MF withdrawals	67	33	67	75	50	25	50	100	0
Without MF withdrawals	0	67	33	0	100	0	20	60	0
<b>Transition economies</b>									
With MF withdrawals	..	0	0	100	100	33	50	33	0
Without MF withdrawals	33	75	50	0	50	0	100	0	100

**Source:** Kaminsky, Lyons and Schmukler (2002).

**Note:** This table relates the mutual fund (MF) withdrawals (injections) of funds to the emerging markets shown in figure 4 with indicators of fragility, liquidity of financial markets, and economic and political risk in those economies.

.. Data not available.

try, Mexico – suffering average withdrawals of 5 and 2 per cent, respectively, in the two quarters following the devaluation. In contrast, mutual funds increased their exposure to Asian countries and transition economies, with (above-trend) flows oscillating around 4 per cent for Asia and 11 per cent for the transition economies.

The aftermath of the collapse of the Thai baht presents a different picture of the international mutual funds industry. It is in this episode that we first observe signs of a more general retrenchment of mutual funds in emerging markets. Mutual fund flows to Asian economies were well below trend in the two quarters following the collapse of the Thai baht. Only flows to China, Pakistan and Sri Lanka were above average. Interestingly, after the collapse of the Thai baht, we observe substantial withdrawals from Hong Kong Special Administrative Region, Singapore and Taiwan Province of China, with average quarterly withdrawals oscillating at about 12 per cent above average in the case of Singapore and Taiwan and about 7 per cent for Hong Kong. The retrenchment this time also affected Latin America and the transition economies, with withdrawals reaching about 6 per cent for Colombia and 4 per cent for the Czech Republic during the two quarters following the outbreak of the Thai crisis. Colombia, the Czech Republic, Chile, Hungary and Peru were the countries most affected in this episode, with sales averaging about 3 per cent above average.

The flight away from emerging markets became more pronounced during the Russian crisis, with about half of the countries in the sample experiencing abnormal sales of about 10 per cent or even larger. In some cases, withdrawals were massive. For example, average mutual funds sales (relative to trend) in Malaysia reached 30 per cent while those in the Czech Republic were in the order of 16 per cent. Some Latin American countries were also dramatically affected in the aftermath of the Russian collapse. Colombia and Venezuela, for example, suffered average quarterly outflows of about 8 per cent. Mutual funds investments in Mexico and Peru were the only ones that did not suffer following the worldwide turmoil

triggered by the Russian default. In fact, inflows to Mexico were 5 per cent above the average observed in the 1995-1999 period.

Table 1 examines in detail why some countries were severely affected by mutual fund withdrawals while others were left unscathed. Three factors are examined: economic fragility, liquidity of financial markets<sup>3</sup> and economic and political risk. Fragility is captured using the probabilities of crises (Kaminsky, 1998) that measure the likelihood of crises conditional on eighteen indicators reflecting macroeconomic vulnerabilities in each country. These indicators provide information about fiscal and monetary imbalances, financial and real vulnerabilities, current-account and capital-account problems and world factors.

Fiscal deficits and monetary imbalances are captured by means of two indicators: fiscal deficit/GDP ratio and excess M1 real balances (supply of money relative to money demand). Current-account problems are captured by four indicators: exports, imports, real exchange rates (deviations from equilibrium) and terms of trade. Capital-account problems (debt problems) are captured by two indicators: foreign-exchange reserves of the central bank, and the foreign debt/exports and short-term debt/foreign-exchange reserves ratios. Real vulnerability is captured by two indicators: output and real interest rates. Financial vulnerability is captured by six indicators: domestic credit/GDP ratio, M2/reserves ratio, deposits, M2 multiplier, stock prices and an index of banking crises. Finally, world factors are captured by one indicator: the world interest rate. A country is classified as fragile if the probability of a crisis is higher than 50 per cent; otherwise it is considered healthy.

Liquidity is captured by means of four indicators. The first one – the volume traded in the stock market – provides an overall measure of the size and depth of the stock market. The second one – the share of the mutual funds portfolio in each country at the onset of the crisis – is related to mutual funds liquidity in each country, since investors cannot sell in countries in which they have basically no exposure. These first two indicators provide two different pictures of liquidity of financial markets. The third indicator dates the time when firms in emerging markets start to trade in mature and more liquid financial markets. The fourth indicator captures the ability of investors to rapidly change their portfolio in a particular country. In particular, this last indicator evaluates the extent of restrictions to capital mobility in each country. Restrictions could add “sand in the wheels” of capital markets and thus curtail liquidity.<sup>4</sup>

Finally, the risk indicator captures both political and economic uncertainty. The political risk indicator captures uncertainty due to expected changes of authorities or future policy actions. It also identifies

3 Liquidity may have an important effect on investors' portfolio allocations since investors may want to avoid illiquid markets to minimize the price collapses always present when there is no ready market.

4 To identify liquid markets, countries are ranked by region according to their volume traded and according to their share in the mutual funds portfolio at the onset of the crisis. The dummy variable related to volume traded is given a value of one if the country ranks among the top 30 per cent of most liquid countries in the region in that category, and a value of zero otherwise. Similarly, countries are classified as liquid (that is to say, the dummy variable is given a value of one) if they rank among the 30 per cent of the countries with the largest share in mutual fund portfolios for the region. A third dummy is created to capture whether emerging market firms are trading in mature financial markets: the variable is given a value of one if they do, and zero if they do not. Finally, the variable capturing restrictions to entry and exit of foreigners in the stock markets of emerging economies is given a value of one if there are no restrictions, and zero if there are. All of this information is collapsed into a liquidity variable that is the average of the four univariate liquidity dummy variables. Thus, the general index of liquidity, the average of the four components, can have five values: 0, 1/4, 2/4, 3/4 and 1, with a value of one indicating a highly liquid market. I classify a country as having liquid financial markets when this dummy takes a value of 0.5 or higher.

widespread social unrest. The risk indicator also captures economic risk, such as imposition of restrictions to capital mobility in response to crises. A country is classified as risky when there is at least either political or economic risk.

Table 1 shows the characteristics of countries that suffer abnormal withdrawals and injections in the aftermath of the three crises.<sup>5</sup> The table groups the countries into three regions: Asia, Latin America and transition economies. As shown in the first column, countries with fragile economies constitute the bulk of the countries that suffer withdrawals. During the Mexican crisis, for example, Latin America was the only region that suffered withdrawals. Interestingly, 67 per cent of the countries that suffered withdrawals in this episode were also countries with deteriorated fundamentals. Again, during the Thai crisis, at least 75 per cent of the countries that suffered withdrawals in the transition economies group and Latin America were countries with economic vulnerabilities. Similarly, 43 per cent of the Asian countries affected by abnormal withdrawals also had deteriorated economies. The Republic of Korea (South Korea), Colombia, the Czech Republic and Chile, for example, suffered huge withdrawals in the aftermath of the Thai crisis – the Czech Republic and South Korea were the two most vulnerable countries during the Asian crisis (Thailand ranked fourth) in the sample of 25 countries, while Colombia ranked sixth. In contrast, countries that did not experience mutual fund withdrawals were less fragile in general (see Goldstein, Kaminsky and Reinhart 2001).

Domestic fragilities were not the only explanation for the sudden-stop syndrome, however. China, for example, did not even suffer a mild hiccup in the midst of the Asian crisis even when devaluation fears were widespread among investors and the vulnerability of its financial system was widely known. In contrast, Singapore, Taiwan and Hong Kong – countries with the most liquid financial markets in the region – suffered pronounced capital-flow reversals even when their economies looked far healthier than that of China. Overall, 86 per cent of the countries in the Asia-Pacific region that suffered withdrawals were countries with quite liquid financial markets. In contrast, all the countries in that region unaffected by the Thai crisis had illiquid financial markets.

Finally, risk also had an important role, with 40 per cent of the countries most affected by withdrawals also experiencing political and economic risk. In 1994, for example, in the midst of the banking crisis, Venezuela abandoned convertibility. Far from discouraging capital outflows, the implementation of restrictions to capital mobility seems to have also contributed to the fire sales of Venezuelan assets. Malaysia suffered substantial losses in the aftermath of the Russian crisis when it introduced outright controls on capital outflows. Interestingly, the withdrawals may have been triggered by the increased risk – perceived or real – associated with the country.

Borenzstein and Gelos (2003) provide complementary results that help characterize the behaviour of mutual funds in emerging markets. The authors examine whether mutual funds follow herding strategies using Lakonishok, Shleifer and Vishny's (1992) measure of herding, a measure that allows an assessment of whether funds move in the same direction more often than one would expect than if they had traded independently and randomly. Borenzstein and Gelos' results suggest that mutual funds do herd together. In particular, for a given country, the number of funds moving in the same direction was approximately 8 per cent greater than one would have expected had they acted independently. Herding is less pronounced among closed-end funds, suggesting that herding behaviour might be traceable to the behaviour

5 See Kaminsky, Lyons and Schmukler (2002) for a country-by-country detail on fragility, liquidity, risk and mutual fund withdrawals.

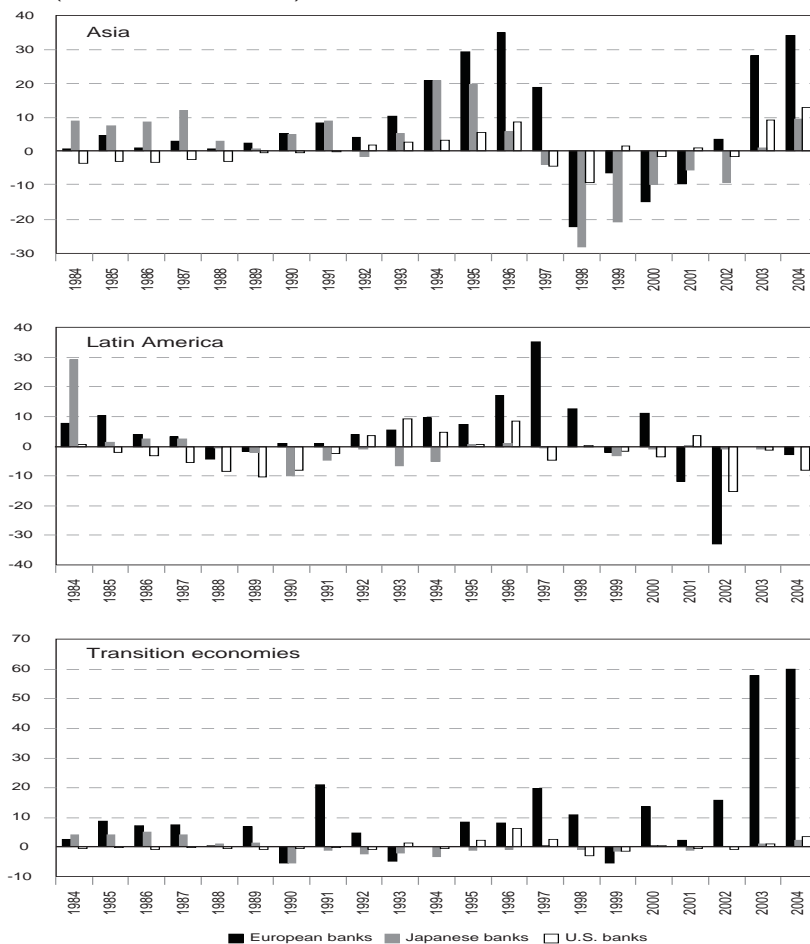
of individual investors rather than that of fund managers. Finally, herding in some crisis episodes was also more pronounced. At the onset of the Brazilian crisis, for example, herding on Brazilian assets increased to 15 per cent.

## The behaviour of banks

As shown earlier, bank-related lending has been quite volatile in the last three decades. This section examines the role of European, Japanese and United States banks in spreading the crises of the 1990s. The Bank for International Settlements (BIS) Consolidated Banking Statistics are used to examine the role of the three international banking clusters. In particular, international claims of reporting BIS banks in emerging economies, including both total cross-border claims and local claims in foreign currency booked by foreign offices, are studied. The difference between total cross-border claims and international claims is quite wide for countries with highly dollarized economies and with an important presence of foreign banks, such as Latin American countries.

As shown in figure 5, bank flows poured into Asia throughout most of the 1990s and accelerated following the Mexican crisis. Bank loans to emerging Asia expanded by 89 per cent from June 1994 to

Figure 5:  
Bank lending to Asia, Latin America  
and the transition economies  
(Billions of US dollars)



Source: Bank for International Settlements.

Note: Asia includes Afghanistan, Armenia, Azerbaijan, Bangladesh, Bhutan, British Overseas Territories, Brunei, Cambodia, China, Fiji, French Polynesia, Georgia, India, Indonesia, Kazakhstan, Kiribati, Kyrgyzstan, Laos, Macau, Malaysia, the Maldives, Mongolia, Myanmar, Nauru, Nepal, New Caledonia, North Korea, Pakistan, Papua New Guinea, the Philippines, the Solomon Islands, South Korea, Sri Lanka, Taiwan, Tajikistan, Thailand, Tonga, Turkmenistan, Tuvalu, the U.S. Pacific Islands, Uzbekistan, Viet Nam, Wallis Futuna and Western Samoa.

Latin America includes Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, the Dominican Republic, Ecuador, El Salvador, the Falkland Islands, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Peru, St. Lucia, St. Vincent, Suriname, Trinidad and Tobago, Turks and Caicos, Uruguay and Venezuela.

Transition economies include Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, the Czech Republic, Czechoslovakia, Estonia, the German Democratic Republic, Hungary, Latvia, Lithuania, Macedonia, Malta, Moldova, Poland, Romania, Russia, Serbia and Montenegro, Slovakia, Slovenia, the Soviet Union, Turkey and Ukraine.

June 1997. Part of the rise in lending was due to the European banks' goal of achieving a higher profile in emerging markets, particularly in South Korea. Much of the lending boom, especially in the case of Thailand, Indonesia and South Korea, was due to a rapid expansion in credit from Japanese banks. Faced with a slumping economy and little domestic loan demand, Japanese banks increasingly looked overseas to the rapidly growing economies of Southeast Asia as potential borrowers. United States bank lending to Asia was modest before the crisis. By June 1997, the United States banks' positions in emerging Asia had only reached US\$32 billion and only accounted for 20 per cent of all United States bank lending to developing countries. In contrast, by the onset of the Thai crisis, Japanese banks had exposure to Asia four times as much as United States banks (US\$124 billion). European bank lending to emerging Asia was also significant and, by the onset of the Thai crisis, the exposure of European banks to Asia surpassed that of Japanese banks, reaching US\$161 billion. The exposure of European banks to emerging Asia accounted for about a half of all their lending to emerging markets; South Korea alone accounted for 40 per cent of their lending to the developing world.

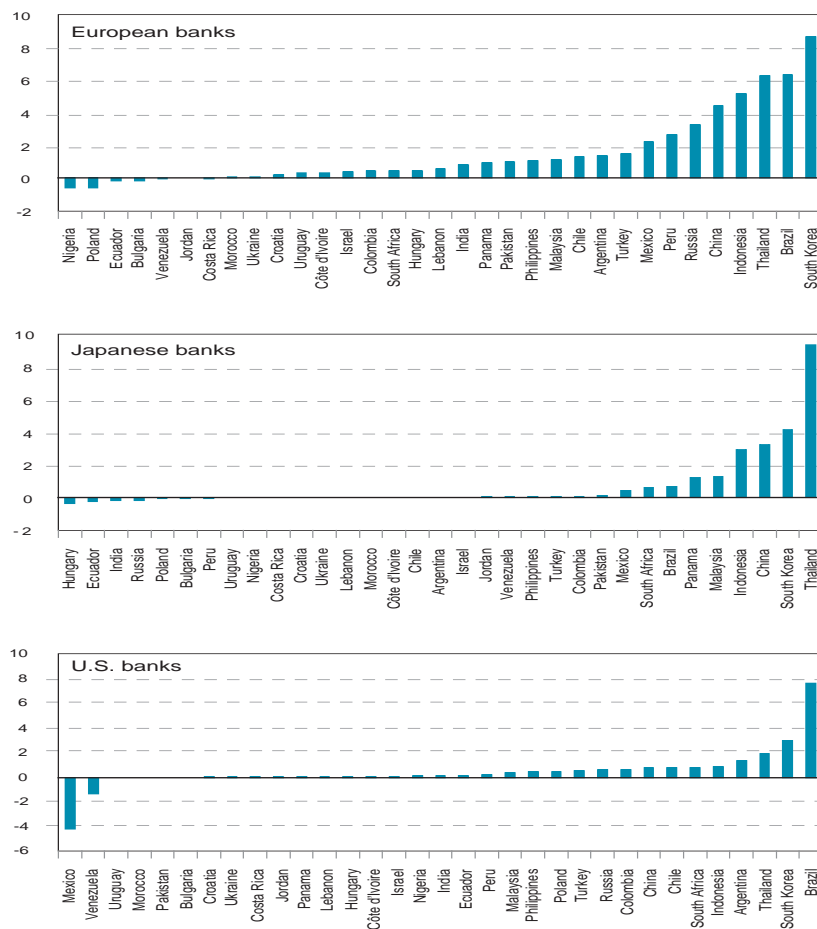
Japanese banks, heavily exposed to Thailand, were the first to pull out of emerging Asia. Between June and December of 1997, lending by Japanese banks fell by 8 per cent. European banks, heavily exposed to South Korea, only began to pull out following the start of the crisis in that country in November 1997. In net terms, European bank lending to Asia continued to increase from June to December 1997. By June 1998, however, lending to emerging Asia was reduced across the board. Bank lending to Asia fell by US\$46 billion, with European banks recalling US\$12 billion, Japanese banks US\$25 billion and United States banks US\$9 billion, respectively.

Figure 5 also reports bank lending to Latin America and transition economies. Exposure to these regions increased sharply in the mid 1990s (in large part driven by the purchase of domestic banks by European banks), with claims on these regions increasing by about 50 per cent from June 1994 to June 1998, immediately before the onset of the Russian crisis. During the 1990s, European banks had the largest exposure to these regions – accounting for 67 per cent to Latin America and 84 per cent to transition economies. The Russian crisis led to some withdrawals of Japanese and United States lending from both regions, but this was not the case with European banks that had acquired local banks. Total exposure to Latin America by European banks peaked in December 2000 and has not recovered since.

Figures 6-8 tally country-by-country bank flows originating in European, Japanese and United States banks in the aftermath of the Mexican, Thai and Russian crises. Each figure focuses on the year following the crisis. Figure 6 shows that with the exception of Mexico and Venezuela (which had a banking crisis of its own making), Latin American countries did not suffer major reversals in bank lending following the Mexican crisis. Moreover, within a year of the crisis, lending to Latin America recovered and even surpassed the levels observed before the crisis. Brazil was the prime beneficiary of bank flows during 1995, with lending from European and United States banks reaching US\$15 billion. Even in the case of Mexico and Venezuela, withdrawals were not made across the board. Only United States banks recalled loans from these countries. Figure 6 also shows that in Asia, the major recipients of capital flows in 1995 were South Korea, Thailand and Indonesia.

Figure 7 shows the behaviour of bank lending in the aftermath of the Thai crisis. In contrast to the Tequila crisis, the Thai crisis triggered major reversals in bank flows from banks in Europe, Japan and the United States. Thailand, South Korea, Indonesia and Malaysia were the countries that suffered major

Figure 6:  
**Bank flows: global spillovers after the Mexican crisis**  
**—December 1994–December 1995**  
 (Billions of U.S. dollars)



Source: Bank for International Settlements.

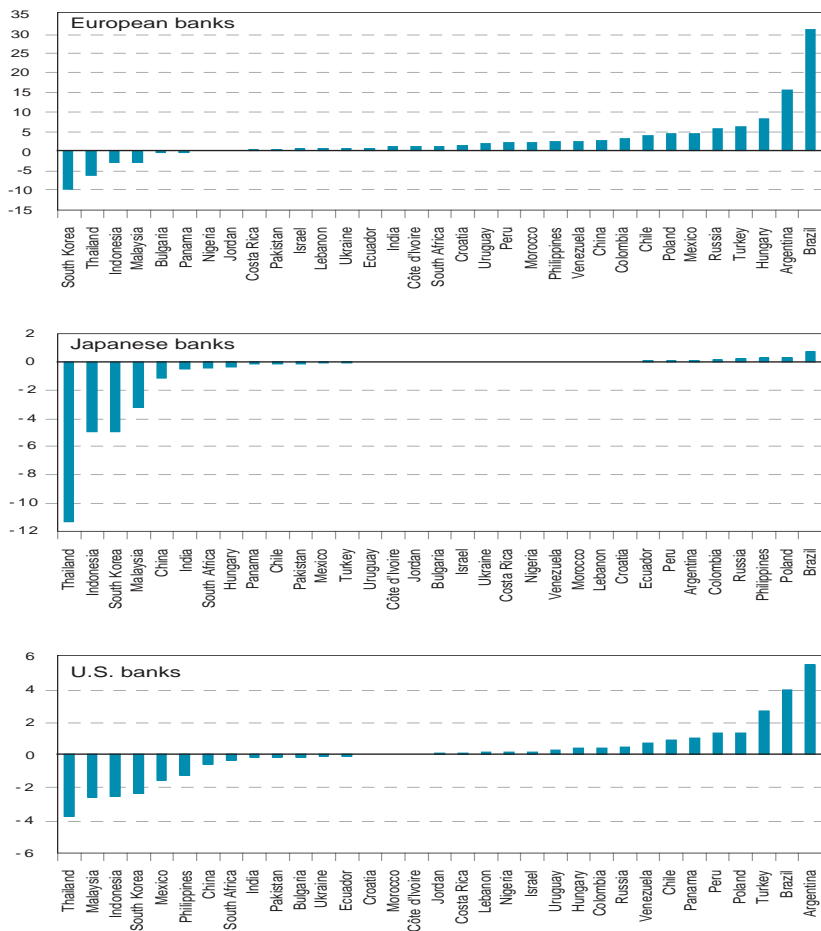
withdrawals. Contagion was only regional in nature, with almost all of the Latin American countries, and to a lesser degree, transition economies, continuing to have uninterrupted access to bank lending.

Figure 8 presents spillovers from the Russian crisis. As was the case with mutual funds, the reversal in bank lending following the Russian default was not restricted to the Russian Federation or neighbouring countries. This time, the reversal was more widespread, and affected countries as far away as Brazil and South Africa. While Japanese banks continued to recall loans from Thailand, Indonesia and South Korea, reversals were not just restricted to these countries. Japanese banks, as well as United States banks, also recalled loans from Brazil, Mexico, India and South Africa.

More formal evidence below suggests that international banks were at the centre of financial contagion in the late 1990s. Kaminsky and Reinhart (2000) examine contagion during the debt crisis in 1982, the Mexican crisis in 1994 and the Asian crisis in 1997, and find that United States banks were at the core of the contagion during the debt crisis, while Japanese banks spread the Thai crisis to Indonesia, South Korea and Malaysia. Van Rijckeghem and Weder (2001) examine the Tequila, Asian and Russian crises and the flows to 31 emerging countries from 17 BIS country-creditor banks. Their evidence supports the idea that the degree to which countries compete for funds from common bank lenders is a fairly robust



Figure 7:  
**Bank flows: global spillovers after the Thai crisis**  
 — June 1997–June 1998  
 (Billions of U.S. dollars)



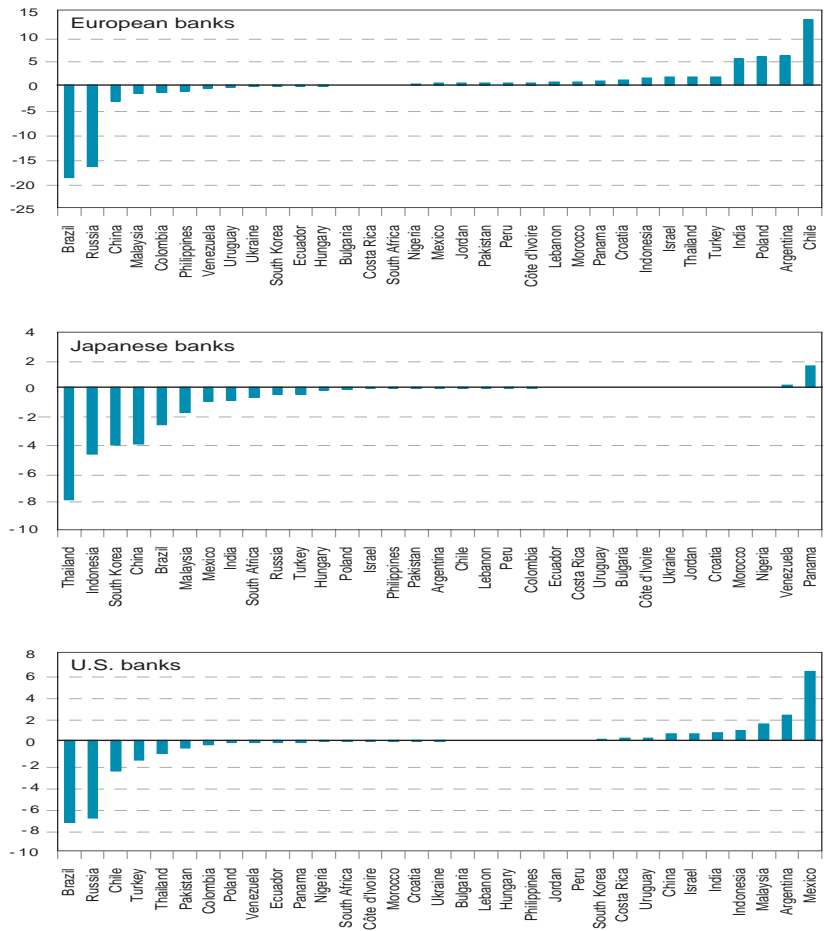
Source: Bank for International Settlements.

predictor of the incidence of contagion. Finally, Caramazza, Ricci and Salgado (2000) extend earlier work on indicators of vulnerability to currency crises by examining the role of financial linkages while controlling for the roles of internal and external macroeconomic imbalances and trade spillovers. Their results indicate that financial links do matter while exchange-rate regimes and controls on capital flows do not seem to.

## Globalization and volatility

As discussed in the introduction, the views on the effects of financial globalization have been diverse; there are those who defend capital controls (Rodrik, 1998; Stiglitz, 1999) and those who maintain that capital should be allowed to move freely (Dornbusch, 1998). The rationale for restricting international capital flows is grounded in the belief that market failures and distortions pervade capital markets around the world. One of the most frequently cited distortions is that of asymmetric information, which is rampant in international capital markets due to geographical and cultural differences that complicate the task of obtaining information. In addition, imperfections in international markets are magnified by the difficul-

Figure 8:  
**Bank flows: global spillovers after the Russian crisis**  
 — June 1998–June 1999  
 (Billions of U.S. dollars)



Source: Bank for International Settlements.

ties in enforcing contracts across borders.<sup>6</sup> With imperfect information, investors may overreact to shocks; withdrawing massively from countries at the first signs of economic problems or becoming euphoric and pouring in capital in quantities beyond those justified by “good” fundamentals. On the other hand, those who consider international capital markets to be efficient favour unrestricted capital movements. Financial liberalization is believed to improve the functioning of financial systems, increasing the availability of funds and allowing cross-country risk diversification. Moreover, it is also claimed that financial integration tends to facilitate economic growth.

This section will summarize some of the findings in the literature on the effects of globalization on financial markets and the real economy, paying particular attention to the evidence on these conflicting views. In particular, the section will focus on the short- and long-run effects of financial integration on real and financial volatility.

6 For an excellent discussion on the effects of asymmetric information in assets markets, see Eichengreen and Mussa (1998).



### *Financial markets*

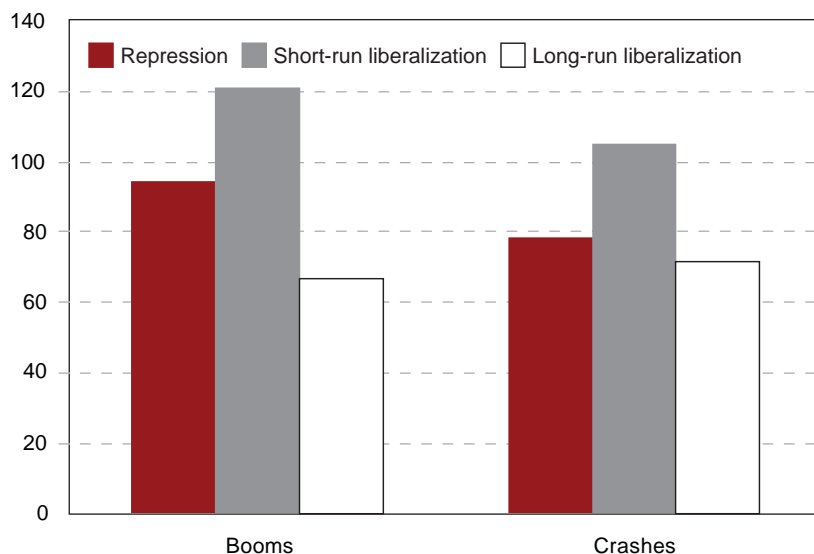
The evidence from the crises of the 1990s suggests that crises are preceded by “excessive” capital inflows that, in turn, fuel large expansions in domestic credit and bubbles in financial markets (see, for example, Sachs, Velasco, and Tornell, 1996). There is also evidence that most episodes of banking crises are preceded by financial liberalization (see, for example, Kaminsky and Reinhart, 1999; Demirguc-Kunt and Detragiache, 1999). To reconcile the evidence that globalization is at the heart of financial crises with the hypothesis that international capital markets allow capital to move to its most attractive destination and promote more stable financial markets, Kaminsky and Schmukler (2002) examine the possible time-varying effects of financial liberalization on stock market price cycles.<sup>7</sup> Figure 9 reproduces some of the results in that paper. The figure shows the average amplitude of booms and crashes for fourteen emerging markets<sup>8</sup> during periods of repression, the short-run effects of liberalization and the long-run effects of liberalization.

The evidence in this figure seems to point to excessive cycles, with larger booms followed by larger crashes in the immediate aftermath of financial liberalization. Liberalization does not permanently bring about more volatile financial markets, however. If liberalization persists, stock markets in emerging countries become more stable. One possible explanation examined in the paper (using a variety of measures of law and order) is that financial liberalization triggers institutional reforms that make financial markets function better. Interestingly, the evidence for the fourteen emerging countries indicates that deregulation indeed preceded institutional reforms. This sequence may be due to the actions of domestic investors who, having access to international capital markets following deregulation, demand better

7 In order to date the episodes of financial liberalization, we construct a chronology of financial liberalization in the domestic financial sector, the capital account, and the domestic stock market. The chronology allows for episodes of partial and full liberalization.

8 The fourteen emerging economies are Argentina, Brazil, Chile, Colombia, Hong Kong, Indonesia, South Korea, Malaysia, Mexico, Peru, the Philippines, Taiwan, Thailand and Venezuela.

Figure 9:  
**Average amplitude of booms and crashes  
in stock prices in 14 emerging markets**  
(in percentage points)



Source: Kaminsky and Schmukler (2002).

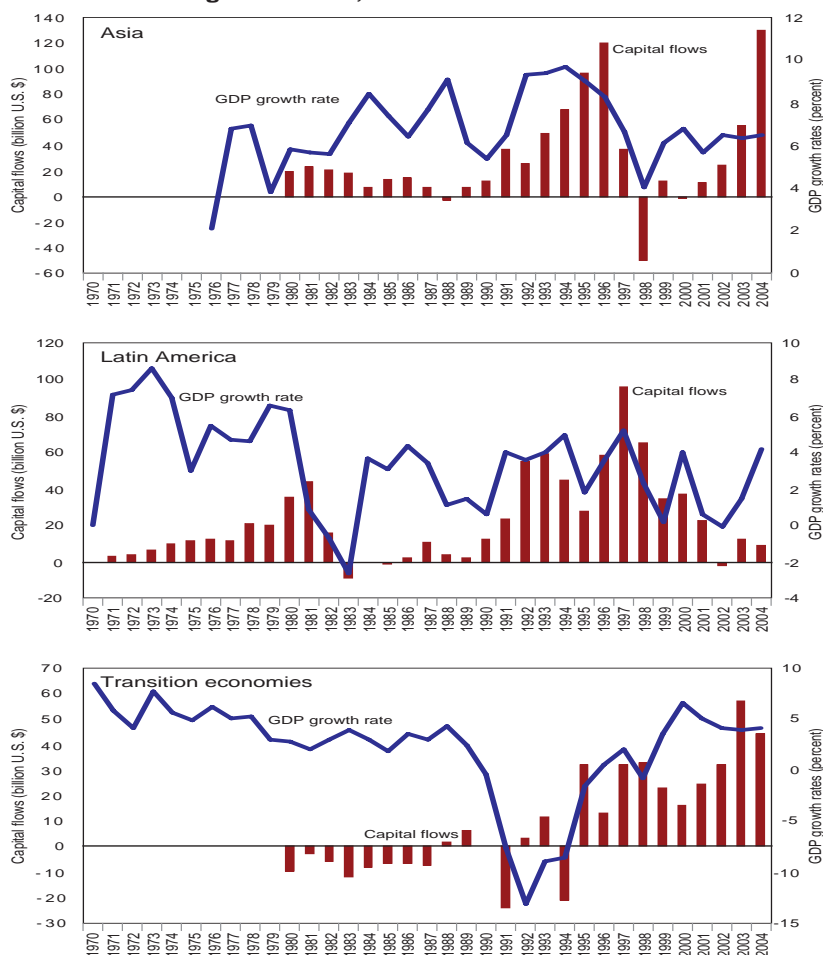
enforcement rules to continue to invest in domestic financial markets. As suggested by Stultz (1999), the liberalization and gradual integration of emerging markets into international financial markets may help strengthen the domestic financial sector, as foreign investors generally have better skills and more information and can thus monitor management in ways that local investors cannot. Liberalization also allows firms to access mature capital markets. Firms listed on foreign stock markets are in the jurisdiction of a superior legal system with higher disclosure standards that will promote more transparency in the management of the firm and can trigger improvements in corporate governance.

### *Business cycles and growth*

The evidence in the previous section is suggestive of excessive booms and busts in financial markets in developing countries following globalization but of more stable financial markets in the long run if globalization persists. This section will examine the relationship between globalization and business cycle fluctuations and growth.

First, the section presents a study of business cycle characteristics of international capital flows. Figure 10 shows international capital flows to emerging markets in Asia, Latin America and transition economies, as well as annual output growth rates. The panels suggest that capital flows have been pro-

**Figure 10:**  
**Private capital flows to emerging markets and GDP annual growth rates, 1970-2004**



**Source:** IMF, World Economic Outlook database.

**Note:** The countries comprising Asia are Bangladesh, China, Hong Kong, India, Indonesia, Malaysia, Pakistan, the Philippines, Singapore, South Korea, Taiwan, Thailand and Viet Nam.

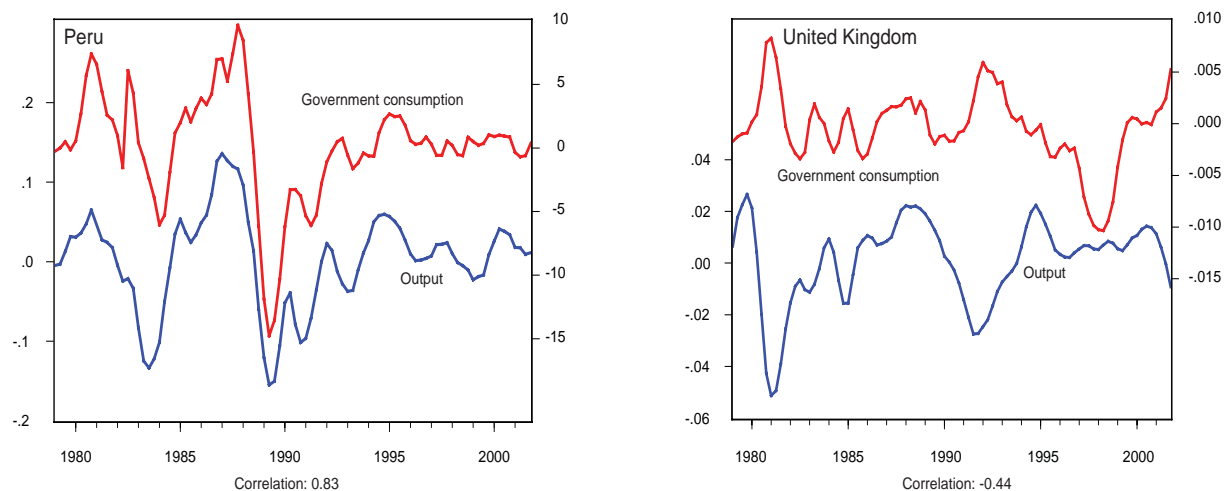
The countries comprising the transition economies are Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Mongolia, Poland, Romania, Russia, Serbia and Montenegro, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

The countries comprising Latin America are Argentina, Brazil, Chile, Colombia, the Dominican Republic, Ecuador, Guatemala, Mexico, Peru, Uruguay and Venezuela.

cyclical, with large inflows in good times and outflows during recessions. For example, Latin America's growth rates oscillated at around 4.5 per cent in periods of capital inflows, while growth rates were about 1 per cent in periods of sudden stops. Similarly, Asia's economic activity collapsed to about 5.5 per cent after the sudden stop in capital flows in the late 1990s, after growing at an average annual growth rate of 8.5 per cent during the earlier period of large capital inflows. This evidence contrasts sharply with the prescription that international capital markets should allow countries to smooth out the effect of the business cycle. Countries seem to have lost access to international credit markets during recessions on a systematic basis.

This non-optimal behaviour of international capital flows has also been studied by Calvo and Izquierdo (2003), who observe that sudden reversals in capital flows to emerging economies lead to large real depreciations and profound downturns. Perhaps what makes these sudden reversals even more devastating is that they seem to trigger contractionary macro-policies. As shown in figure 11, for example, Peru introduced austerity programs in the early 1980s and in the late 1980s in the aftermath of debt and currency crises. In contrast, the United Kingdom pursued counter-cyclical policy in the aftermath of the 1992 European Monetary System (EMS) currency crisis when the pound was allowed to float. While Peru lost access to international capital markets, the United Kingdom did not. These are not isolated cases. As reported in Kaminsky, Reinhart and Végh (2004), macro-policies tend to be pro-cyclical in developing countries while they are counter-cyclical or acyclical in industrialized countries. That is to say, macro-policies tend to smooth out the business cycle in industrial countries but magnify it in developing countries, as shown in table 2. The left panel in this Table reports the correlation between the cyclical components of fiscal and monetary policy with the business cycle. The right panel shows the correlations of the cyclical components of fiscal and monetary policy with net capital inflows. Interestingly, the evidence suggests that international capital flows to developing countries may trigger pro-cyclical macro-policies. Government expenditure (inflation tax) is positively (negatively) correlated with net capital inflows, for example, indicating that periods of capital inflows are associated with expansionary fiscal policies and periods of capital outflows with contractionary fiscal policies. While more research is needed, the stylized evidence suggests that international capital flows may trigger more volatile business cycles in emerging economies.

Figure 11:  
Fiscal policy and the business cycle, 1980-2000



**Source:** Author's calculations.

**Notes:** These figures show the cyclical component of government consumption and GDP obtained using the band-pass filter. The correlations are the sample correlations.

Table 2.  
**Correlations between the cyclical components  
of macropolicies real GDP, and net capital inflows**

<i>Countries</i>	<i>Correlations with real GDP</i>			<i>Correlations with net capital inflows</i>		
	<i>Fiscal policy</i>		<i>Monetary policy</i>	<i>Fiscal policy</i>		<i>Monetary policy</i>
	<i>Government expenditure</i>	<i>Inflation tax</i>	<i>Lending interest rate</i>	<i>Government expenditure</i>	<i>Inflation tax</i>	<i>Lending interest rate</i>
OECD	-0.13	0.16	0.23	0.03	0.04	0.19
Non-OECD	0.33	-0.15	-0.05	0.20	-0.16	-0.06

**Source:** Kaminsky, Reinhart and Vegh (2004).

**Notes:** A positive (negative) correlation between government expenditure (inflation tax) and real GDP indicates pro-cyclical fiscal policy. A negative correlation between lending interest rates and real GDP indicates pro-cyclical monetary policy. A positive (negative) correlation between government expenditure (inflation tax and lending interest rates) and net capital inflows indicates that contractionary macropolicies are linked to episodes of low net capital inflows.

The cyclical component of the various indicators was obtained using the HP filter.

While this evidence points to links between financial integration and output instability over the business cycle, there is also evidence that financial integration promotes growth. A variety of authors have examined the effects of domestic and external deregulation of financial markets in emerging economies and found that they generally trigger sustainable growth in the long run. Bekaert, Harvey and Lundblad (2002), for example, examine the effects of the opening of the stock market to foreign investors on growth in a sample of about 90 developing countries and find that, overall, liberalization triggers an increase in growth by approximately one percentage point. They find that the investment to GDP ratio increases in the aftermath of liberalization and that factor productivity increases significantly as well. The authors conclude that the effects of liberalization are so strong not only because they reduce financing constraints but also because foreign investors may insist on better corporate governance thus indirectly reducing the cost of external financing.

Similarly, Galindo, Micco and Ordoñez (2002) study whether financial liberalization promotes economic growth by analyzing its effect on the cost of external financing to firms. In particular, the hypothesis is that the liberalization of domestic and external financial markets reduces the cost of external funds faced by firms by reducing the impact of problems associated with moral hazard and adverse selection. From this perspective, the impact of financial development differs according to the needs of particular firms for external funds. Firms that rely more on external funds will be more heavily impacted by financial development than those that require little capital. The results suggest that industries that depend on external finance grow almost 1 per cent faster, relative to industries with low external financing dependence, in episodes of globalization compared to episodes of repression. The evidence on the links between financial liberalization and growth is not conclusive, however. Edison and others (2002), for example, using data from 57 countries from 1980 to 2000, conclude that there is no robustly significant effect of financial integration on economic growth.<sup>9</sup> Similarly, Kraay (1998), using a sample of 117 countries, finds no effect of financial liberalization on growth or, at best, mixed results.

Perhaps the inability of past research to agree on the effects of financial globalization on economic growth lies in the fact that liberalization has time-varying effects on growth. Loayza and Ranciere (2002) present some evidence that suggests this might be the case. These authors estimate transitory and

9 See Prasad and others (2003) for a review of the literature on the effects of financial globalization on growth.

trend effects of financial deepening on growth using a sample of about 80 countries and find that financial deepening, which in general is closely related to financial liberalization, harms growth in the short run but leads to higher growth in the long run. These latest results are closely linked to the results in Kaminsky and Schmukler (2002) and suggest that financial liberalization triggers growth in the long run because it fuels institutional reform.

Gourinchas and Jeanne (2002) also explore this theme and distinguish two classes of benefits of financial globalization. The first category includes benefits in terms of international allocative efficiency, such as consumption smoothing in response to shocks or the possibility of accelerating domestic capital accumulation with the help of foreign capital. The second class of benefits encompasses incentives to implement good policies or reform that are generated by an open capital account. This includes imposing market discipline on domestic macroeconomic policies induced by the threat of capital flight. More broadly, it can also include incentives to reform the domestic economic system in a way that reduces unproductive activities (diversion, rent-seeking) or secures better guarantees of property rights. To examine the relative importance of the benefits of international allocative efficiency, the authors calibrate a simple neoclassical growth model of a small, open, capital-scarce economy with data on post-World War Two emerging economies. While they find that financial openness increases domestic welfare by allowing households to smooth consumption and by increasing the possibility of accelerating domestic capital accumulation, they also find that the benefits are not very large when compared to the benefits of alternative policies that reduce domestic distortions or increase domestic productivity.<sup>10</sup>

## Managing international capital flows

The evidence seems to suggest that in the short run, globalization triggers the bankruptcy of financial systems and protracted recessions. Even if capital inflows do not trigger excess volatility in domestic financial markets, it is still true that they trigger inflation in the presence of a fixed exchange-rate regime. Moreover, transitory capital inflows may distort relative prices, with the domestic economy losing competitiveness as a result of the appreciation of the real exchange rate. Therefore, policy makers have used a variety of tools to manage these flows, especially those of the “hot money” type. While they have introduced capital controls in some cases, they have also resorted to sterilized intervention or have introduced fiscal austerity to help “sterilize” the expansive monetary effects of foreign-exchange purchases. Governments have also allowed more exchange-rate flexibility to avoid a burst of inflation during episodes of capital inflows, in the knowledge that if the appreciation of the real exchange rate is unavoidable, it is better that it takes place through a nominal appreciation rather than through domestic inflation.

The effects of sterilized intervention and exchange-rate policy in the presence of large capital inflow episodes have been documented extensively in Reinhart and Reinhart (1998). Emerging markets mostly peg their domestic currency, floating only in the immediate aftermath of crises (see Calvo and Reinhart, 2000). With fixed exchange-rate regimes, capital inflows trigger an accumulation of reserves by the central bank and an explosion of the monetary aggregates. To avoid inflation, monetary authorities have to sterilize the effects of the intervention in the foreign-exchange market by selling securities in the domestic open market. Naturally, sterilization can only be effective if domestic and foreign assets are not close substitutes. The evidence for emerging markets suggests that while sterilization only has short-run

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<sup>10</sup> The evidence in Arteta, Eichengreen and Wyplosz (2001) also suggests that the positive growth effects of liberalization are stronger in countries with strong institutions, as measured by standard indicators of the rule of law.

effects (see Reinhart and Reinhart, 1998), many countries have resorted to sterilized intervention. Colombia (during most of 1991), Indonesia (during 1991-1992) and Malaysia (during 1991-1993), for example, implemented open market operations on a vast scale to fully sterilize capital inflows. Less strongly, but still forcefully, the central banks of Chile, South Korea, Mexico, the Philippines and Thailand partly sterilized the capital inflows of the early and mid-1990s.

In most cases, domestic short-term interest rates rose when sterilization began, suggesting that policy had an impact, at least in the short run. Interestingly, and at odds with the central banks' initial purpose, strong sterilized intervention, by triggering large hikes in domestic interest rates, also triggered an increase in the volume of aggregate capital flows, mostly of the "hot money" type.<sup>11</sup> Another disadvantage of sterilized intervention was that the hikes in domestic interest rates also increased the cost of capital to the government, as the central banks acquired relatively low-yield foreign-exchange reserves and issued high-yield sterilization bonds. In practice, these quasi-fiscal losses were not trivial. The central bank losses associated with the sterilization effort in Colombia in 1991, for example, reached about 0.6 per cent of GDP (see Rodriguez, 1992). Similarly, the losses in Chile due to the sterilization attempt during 1990-1992 amounted to about 1.4 per cent of GDP (see Kiguel and Leiderman, 1993).

The explosion of capital inflows to emerging markets in the early and mid-1990s were at first counterbalanced through sterilized intervention. This intervention managed to avoid nominal appreciation or a hike in inflation. As the inflows persisted and as the foreign exchange reserves continued to accumulate, however, these policies became quite costly. At this point, central banks in Asia and Latin America allowed the exchange rate to move more freely so that the real appreciation was effected through a nominal appreciation rather than through a hike in domestic inflation. As described in Reinhart and Reinhart (1998), Chile and Colombia allowed several appreciations in the midst of the capital inflow episode. Chile allowed its currency to appreciate by 5 per cent in January 1992 and by 9.5 per cent in November 1994, for example. Similarly, Colombia allowed its currency to appreciate by 5 per cent in January 1994 and by 7 per cent in November 1994. In addition to Chile and Colombia, the Czech Republic and Mexico also allowed their currencies to float somewhat more freely. All of these countries widened their exchange-rate intervention bands in the early 1990s.

## Conclusion

The explosion of capital flows to emerging markets in the early and mid-1990s and the recent reversal following the crises around the globe have reignited a heated debate on how to manage international capital flows. Capital outflows worry policy makers, but so do capital inflows, as they may trigger bubbles in asset markets and lead to an appreciation of the domestic currency and a loss of competitiveness. Policy makers also worry that capital inflows are mostly of the "hot money" type, which is why capital controls have mostly targeted short-term capital inflows. While capital controls may work, at least in the very short run, the introduction of restrictions to capital mobility may have undesirable long-run effects. In particular, capital controls protect inefficient domestic financial institutions and thus may trigger financial

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11 See Montiel and Reinhart (1999) for a study of 15 sterilization episodes in Africa, Asia, Latin America and transition economies, and Christensen (2005) for the analysis of the sterilization policy in the Czech Republic during the capital inflow episode of the early 1990s. In both studies, the authors conclude that sterilization created a vicious circle of high interest rates, more capital inflows and the need for additional sterilization interventions.



vulnerabilities.<sup>12</sup> Capital controls may also delay improvements in corporate governance of non-financial firms because, as countries liberalize their capital accounts, domestic corporations start participating in international capital markets, mainly through cross-listing in major world stock exchanges, with higher disclosure standards and under the jurisdiction of a superior legal system. This certainly promotes more transparency in the management of the firm and can trigger improvements in corporate governance (see, for example, Stultz, 1999). Thus, regulation of capital flows may not only provoke financial vulnerabilities but also lower economic growth. Policy makers have also resorted to sterilization of capital flows to regain control of monetary policy. While sterilization may provide some relief, it may also be quite costly to central banks. Moreover, the ability of governments to control international capital flows or to sterilize them diminishes with globalization.

In conclusion, there is no optimal policy to deal with the risks of volatile international capital flows, as policies that may work in the short run may have adverse effects in the long run. Since there is evidence that currency and banking crises tend to occur in economies with deteriorated fundamentals, conservative macroeconomic policies should be at the heart of dealing with volatile capital flows. Further research should examine whether countries can deregulate financial systems without becoming vulnerable to crises. Since the costs of crises have been quite large, this last question deserves much attention.

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