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**THE RECENT EXPERIENCE WITH CAPITAL FLOWS TO EMERGING MARKET ECONOMIES**  
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by  
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**ABSTRACT/RÉSUMÉ**

This paper summarises key points of the recent extensive discussion of the factors behind the volatility of cross-border capital flows in emerging market countries and possible corrective measures. The root cause of the recent volatility of capital flows seems to have been excessive credit and currency risk-taking by banks, which in turn was related to moral hazard problems, failure of prudential regulations and bank supervision, and weak effective standards of financial disclosure. Macroeconomic factors also played a role, with a widening deficit on the balance of payments and fixed (or predictable) exchange rates gradually undermining confidence of creditors and investors. Liquidity problems may have amplified the reaction to adverse news, and herd behaviour and contagion may also have exaggerated reaction to changing fundamentals and transmitted crises from one country to another. Capital controls, which have been extensively used in emerging market countries, may not be very effective to stabilise capital flows in the long run, and could entail significant long-run costs. The imposition of capital controls as an emergency measure may yield some short-term benefits, but improved crisis management in a multilateral setting would be more appropriate. The recent episode of capital flow volatility confirms again that a sound financial system and macroeconomic stability are prerequisites for a successful integration with global capital markets.

\* \* \* \*

Ce document résume les points clés des importantes discussions récentes concernant les facteurs sous-jacents à la volatilité des flux de capitaux trans-frontière dans les pays aux marchés émergents ainsi que les éventuelles mesures correctrices. La cause principale de la volatilité récente des flux de capitaux semble avoir été une prise de risque excessive des banques au niveau du crédit et des monnaies. Ceci est lié à des problèmes de risques moraux, à l'échec des règlements prudentiels et des contrôles bancaires ainsi qu'à la faiblesse des supports effectifs dans le domaine de la communication financière. Les facteurs macroéconomiques ont aussi joué leur rôle. Une augmentation du déficit de la balance des paiements ainsi que des taux de change fixes (ou prévisibles) ont lentement sapé la confiance des créanciers et des investisseurs. Les problèmes de liquidité ont peut-être amplifié la réaction aux informations défavorables et le comportement grégaire ainsi que des phénomènes de contagion peuvent avoir aussi exagéré la réaction aux changements fondamentaux et transmis les crises d'un pays à l'autre. Les contrôles des capitaux, qui ont été amplement utilisés dans les pays aux marchés émergents ne sont sans doute pas très efficaces pour stabiliser sur une longue période les flux de capitaux et peuvent entraîner à long-terme des coûts significatifs. Imposer, comme une mesure d'urgence, le contrôle des capitaux peut produire des bénéfices à court terme, mais améliorer la gestion de la crise au niveau international serait plus approprié. Ce récent épisode de la volatilité des flux de capitaux confirme une fois encore qu'un système financier bien portant et une stabilité macroéconomique sont des conditions préalables à une intégration réussie au marché mondial des capitaux.

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## THE RECENT EXPERIENCE WITH CAPITAL FLOWS TO EMERGING MARKET ECONOMIES

Sveinbjörn Blöndal and Hans Christiansen<sup>1</sup>

### I. Introduction

1. While the benefits of free capital mobility are widely believed to be significant, the recent volatility of flows to emerging markets and the associated costs have raised questions about the desirability of unrestrained capital movements to these economies. The inherent risks, and importance of well-functioning domestic financial markets and macroeconomic stability as a pre-requisite for a successful liberalisation of capital-account transactions, have long been recognised<sup>2</sup>. To the extent that the volatility of capital flows in Latin America in the mid-1990s and in Asia and other emerging markets since mid-1997 reflected the absence of these fundamental conditions, then the prime reason for the turbulence would be a failure of the sequencing of reforms. However, it cannot be excluded that recent volatility has been driven by factors not related to economic fundamentals, such as some forms of herding and contagion. This, in turn, has prompted debates about the efficacy of restrictions on capital movements in certain circumstances<sup>3</sup> and the need to reform the international financial system<sup>4</sup>. The recently announced reform proposals from the G-7 aim precisely at improving this system<sup>5</sup>.

2. This paper attempts to summarise key points of the recent extensive discussion of the factors behind the volatility of cross-border capital flows and possible corrective measures. It does so under five headings: the efficacy and costs of capital controls; the domestic financial system; macroeconomic conditions; liquidity problems, herding and contagion; and the exchange-rate regime. Selected conclusions of this discussion are:

- capital controls may have limited effects on cross-border capital flows in the long run, and temporary controls on outflows may entail significant long-run costs (Section II);
- while prudential rules on banks in emerging market economies were similar to those in mature countries, they often failed to prevent excessive risk taking (Section III);

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1. The authors, at the time of writing, were both members of the Money and Finance Division of the Economics Department. They would like to acknowledge helpful and constructive comments from Ignazio Visco, Michael Feiner, Jorgen Elmeskov and Mike Kennedy (Economics Department), Helmut Reisen (Development Centre), William Witherell (Directorate for Financial, Fiscal and Enterprise Affairs) and Pierre Poret (Secretary-General's office) of the OECD.

2. See OECD *Economic Outlook* 64.

3. The theoretical and practical issues are reviewed in Eichengreen and Mussa *et al.*, (1998).

4. In particular, working groups were set up by Finance Ministers and Central Bank Governors of a number of systematically significant economies in April 1998 to examine some of the issues related to the stability of the international financial system and the effective functioning of global capital markets; enhancing transparency and accountability; strengthening domestic financial systems; and managing international financial crises. The reports of these working groups, and a summary entitled, "Summary of Reports on the International Financial Architecture" were released to the public in October 1998.

5. See the recent communiqué of the G-7 (30 October 1998). It effectively endorsed many of the recommendations of the reports mentioned in footnote 4.

- macroeconomic imbalances also played a role in recent crises in emerging countries (Section IV);
- international liquidity problems, herd behaviour and contagion, contributed to the abruptness and severity of the reversal of capital flows, though the quantitative importance of these factors is still unclear (Section V); and
- the policy of maintaining managed exchange rates, valuable as an anti-inflation device in a number of instances, may have contributed to capital-flow instability (Section VI).

## II. Capital controls: efficacy and costs

3. Notwithstanding substantial liberalisation of capital-account transactions in emerging economies<sup>6</sup>, legal and administrative restrictions remain common in several of them (Table 1). In addition to controls directly targeted at cross-border movements of capital, most countries have prudential regulations on banks' foreign currency exposure (discussed below) which can indirectly influence capital flows. Direct restrictions typically take two different forms:

- Quantitative restrictions that prohibit outflows or inflows of funds. Such restrictions are often used to prevent excessive exchange rate volatility due to sudden capital outflows, and Malaysia's controls announced last September fall under this category: prohibition of holding the local currency offshore, prohibition of local banks providing local currency to foreign banks, and a forced waiting period of one year before foreigners' proceeds of the sale of domestic securities can be repatriated.
- "Tax-based" controls that make it more costly to move capital across borders. The Chilean capital control system, in effect since 1991, imposes a transaction tax on all inflows through unremunerated reserve requirements and withholding periods.

The objective of these restrictions has been to gain greater independence in macroeconomic policy making and to shelter countries from capital flows perceived to be excessively volatile. The transaction tax in Chile is a prime example of a system deterring short-term flows. Some countries have also aimed at reducing volatility through systematic discretionary changes: tightening controls on inflows when the availability of foreign capital is abundant, and tightening restrictions on outflows when foreign capital becomes scarce.

4. Proposals to limit capital movements implicitly assume that such flows can be controlled by legal means. There is, however, evidence that they are difficult to control (Dooley, 1997; Eichengreen and Mussa, *et al.*, 1998), especially by re-imposing controls once they have been lifted. The private sector can develop various means to circumvent such restrictions: mis-invoicing in trade, leads and lags, substituting exempted flows with restricted flows, and resorting to illegal methods, including bribery. The capacity to avoid capital controls has also increased substantially with the proliferation of financial derivative instruments (Garber, 1998). Indeed, a common finding of studies in this area is that the effectiveness of control programmes diminishes over time as the private sector invests in avoidance techniques. The

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6. The average capital controls index for 17 emerging countries, constructed by Bartolini and Drazen (1997) to gauge the restrictiveness of capital controls, fell by one-third from 1987 to 1995. This is reported in Bachetta and van Wincoop (1998).

effectiveness of capital controls remains controversial even in Chile<sup>7</sup>, where special attention was paid to designing the programme in order to prevent avoidance.

5. If the reimposition of capital controls could be made effective as an emergency measure, they would have short-term benefits but could also have long-term costs. The short-term benefits would come from greater independence in setting interest rates with the aim of supporting economic activity (Edwards, 1998). The costs relate to the risk that temporary controls might become permanent and be used to perpetuate inappropriate policies rather than foster policy reforms. Temporary controls may also entail long-lasting burdens in terms of higher borrowing costs, as the risk of losses related to possible future controls is factored into financial asset prices, and lower foreign direct investment, especially if the controls affect the ability of investors to repatriate their profits and assets.

6. Given the potential benefits of international integration<sup>8</sup>, emerging market economies should aim at progressive liberalisation of capital account transactions over time. However, as the experience of the crises in emerging markets in the recent and the more distant past demonstrates, it is essential to precede and/or match capital-account liberalisation with measures to strengthen the financial system and to establish macroeconomic stability. To avoid the danger of capital account liberalisation being postponed because of the authorities' continued pursuit of inappropriate structural and macroeconomic policies, it might be useful to establish timetables for the phasing out of controls negotiated in a multilateral setting. This could provide incentives for the authorities to undertake the needed policy adjustments and would in the end allow the country to become integrated into the global financial system with the benefits that this offers.

### III. The domestic financial system of emerging markets

7. The excessive exposure to credit and currency risks of banks was arguably a key factor behind the highly volatile capital flows in some of the Asian countries<sup>9</sup>. Borrowing by Asian banks in international markets at low interest rates for lending at higher ones at home -- the so-called "carry trade" -- proved to be highly profitable. But these profits were based on a gamble that the exchange rate would be more stable than the markets expected on average. They were also based on the willingness of international banks to fund this kind of lending. The overseas funding permitted banks in Asian countries to satisfy strong domestic demand for credit, thus significantly increasing the leverage of the private sector (Figure 1). At the same time, the exposure of the banking sector to excessive credit risk rose, as demand from lower quality borrowers was increasingly accommodated and the maturity mismatch between banks' assets and liabilities widened, as long-term lending was more and more financed by short-term borrowing in the international market. At their root, these developments were related to moral hazard problems, due to the financial safety net and government direct lending; failure of regulation and supervision; and weak effective standards of financial disclosure.

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7. Studies on the effectiveness of capital controls in Chile since 1991 are reviewed in Annex IV of IMF (1998).

8. Empirical studies provide only weak evidence that capital account liberalisation improves economic growth, but this may be related to methodological problems in detecting the benefits. See Eichengreen and Mussa *et al.* (1998).

9. In some Asian countries the non-bank private sector borrowed extensively in international markets. However, owing to the lack of information about such borrowing, it is unclear whether this involved borrowing abroad from a subsidiary of a domestic bank or whether it was borrowing from an international bank. In general, there is a lack of reliable information for many emerging market economies as to the structure of corporate foreign borrowing by types of instruments and countries of origin of lenders.

### ***Moral hazard problems***

8. It is uncertain to what extent moral hazard problems due to the safety net for banks are more serious in emerging market economies than in developed economies. Deposit insurance arrangements are similar, in practice, in both groups of countries: formal insurance for depositors being employed mainly in developed economies (Table 2), and, at least until recently, implicit guarantees from the authorities being used in emerging markets -- especially in East Asia. To prevent confidence in the financial system from being eroded, government bodies in both developed and emerging economies operate as “lender of last resort” rather than allow major financial players to fail in the event of a liquidity problem. In mature financial systems, such assistance typically implies large losses for bank shareholders and is conditional on a change in management. However, the access to the safety net in East Asia has typically included injections of public funds into privately owned banks as a going concern. By alleviating both managers and shareholders of exposure to financial risk, such measures have posed particular moral hazard problems.

9. The role and functioning of the banking sector appears to be more closely linked to the government in emerging market economies. This stronger involvement does not show up as greater public ownership of banks, which is not significantly different in emerging and mature market economies, but is more related to programmes of directed lending or funding, and to complex and distorting tax and subsidy regimes. Under these conditions, banks are not autonomous profit-maximising entities, but rather operate to some extent as quasi-fiscal bodies, providing virtual subsidies to selected parts of the economy which do not appear on the general government balance sheets. However, this may nurture a perception that bank loans are guaranteed by the government. During years of rapid economic growth, the sub-normal performance of such directed loans tends to be masked by the growth in deposits (and, on some occasions, by additional capitalisation of banks by the government); but when macroeconomic slowdowns occur, such features can be a major source of banking-sector fragility. For example, banks in Indonesia, Korea, Malaysia, the Philippines and Thailand have, at some time over the past two decades, been subject to regulatory requirements or pressures to allocate fixed proportions of their loan portfolios to particular sectors (Folkerts-Landau *et al.*, 1995)<sup>10</sup> and this has left their banking sectors particularly vulnerable.

### ***The prudential regulation and supervision of the financial sector***

10. To reduce the capacity of the financial sector to exploit the insurance inherent in the safety net, both mature and emerging market economies have attempted to limit risk-taking by subjecting banks and other financial institutions to prudential regulations. Banks are typically restricted in their exposure to a single borrower to prevent them from being captured by a big debtor (Table 3), and their foreign currency exposure is often limited to avoid excessive exchange-rate risks (Table 4)<sup>11</sup>. Moreover, banks are subject to minimum capital adequacy rules which, in principle, raise both the cost of riskier lending and the stakes for owners from engaging in risky lending. These rules have been reasonably successful in mature economies where regulators and legislators are under continuous review to keep up with innovations in financial markets. However, they have failed in many emerging economies to prevent excessive risk taking. Indeed, studies have found poor regulatory and supervisory frameworks to have been one of the

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10. Also, credits to the public sector from banks controlled by the general government have sometimes given rise to banking crises; for example, loan delinquencies by state governments were at the root of serious state bank insolvencies in Brazil around 1994. For a discussion, see Honohan (1997). Since the state banks were ultimately bailed out by the central bank, state authorities can be said to have indirectly obtained large credits from the central authorities.

11. Most emerging-market economies have rules on maximum currency exposure. For example, in addition to the countries listed in Table 4, the Slovak Republic requires an 80 per cent ratio between foreign exchange claims on non-residents and total foreign exchange liabilities (see OECD *Economic Outlook* 64).

principal causes of bank crises in emerging markets (Figure 2), (Dziobek and Pazarbasioglu, 1997; Lindgren *et al.*, 1996)<sup>12</sup>.

11. The failure of prudential rules in emerging economies has been ascribed to several factors:

- By allowing banks to overstate their capital, weak loan classification and provisioning rules undermined the discipline in minimum capital adequacy ratios. Whereas rules in mature economies consider loans to be sub-standard if they are 3 months in arrears, many of the Asian countries classified loans as non-performing if they had not been serviced for 6 months or more. And while mature economies require prompt and full provisioning for non-performing loans, rules in many emerging economies call for only gradual and incomplete provisioning.
- Failure to regulate financial institutions on a consolidated basis has reduced the impact of rules to contain risks. Financial groups typically have offshore branches and affiliates that represent a significant part of a bank's business, and risky lending is often concentrated in such centres. Lack of consolidation for regulatory purposes has also meant that banks and other financial institutions can easily evade rules on limiting lending to connected parties, and recent research indicates that this has been an important factor behind the financial fragility in the past<sup>13</sup>. Moreover, rules on maximum currency exposure are not effective when banks are not regulated on a consolidated basis. The expansion of financial derivatives, which regulators have found difficult to control, has also seriously undermined prudential controls on currency exposure (Garber, 1998).
- Supervisory agencies are often weak in emerging economies and penalties for non-compliance tend to be low. This situation reflects: the informal nature of inter-company links (especially in Asia) and unclear property rights which make it difficult to assess the degree of connected lending<sup>14</sup>; resource constraints which make on-site inspections rare and the monitoring of credit risk assessment minimal; the limited weight of supervisory agencies in the public administration compared with those charged with business sector policies; and political difficulties for supervisors to make companies provision against changes in official policy (such as, for example, a departure from announced exchange-rate policies).

The most common supervisory problems in mature economies relate to resource constraints combined with rules lagging financial sector liberalisation (this was a factor behind the 1992-93 Nordic banking crisis) and innovation. In emerging markets there is stronger evidence of unclear corporate structures and outright forbearance hampering efficient bank supervision<sup>15</sup>.

### ***Standards of financial disclosure in the private sector***

12. Excessive risk-taking by domestic financial institutions may have been based on ignorance of the risks that were being assumed owing to a lack of information about the health of individual enterprises.

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12. The importance of good regulations and supervisory mechanisms was emphasised in e.g. *Working Party on Financial Stability and Emerging Market Economies* (1997).

13. A study of 10 banking crises in the 1980s concluded that connected lending had been a contributing factor in all cases (Sheng, 1996).

14. This also tends to be a problem in some mature economies where corporate governance favours conglomeration.

15. This is, however, not limited to emerging markets. For example, Sheng (1996) finds that the treatment of the mounting problems in France's Credit Lyonnais displays considerable administrative forbearance.



However, though lacking the tradition for certified accounting and auditing mechanisms, an effort by many emerging market economies to adapt their national practices to international standards was widely regarded to have closed the gap between leading emerging and mature economies in this area. In 1990, for example, a study by the International Finance Corporation concluded that financial reporting in selected East Asian countries (except for Chinese Taipei and, to some extent, Thailand), was “good, of internationally acceptable quality” (IFC, 1990). Also, a cross-country survey of accounting and auditing practices done in 1995 showed a very high standard of financial disclosure in Asian countries later affected by financial crises (Table 5). However, while national standards have often been aligned with international ones, there is evidence that domestic companies failed to follow them in their financial reporting (Cooke and Parker, 1994), reflecting partly that no tradition of full and fair disclosure may yet have developed. For example, the recent crises in some of the Asian countries has unmasked the widespread practice of using undisclosed balance sheet items to provide guarantees or similar commitments between related companies.

### *The policy implications*

13. The long-term policy response for dealing with bank-driven volatile capital flows in emerging market economies is to strengthen prudential regulations and supervisory mechanisms, and to improve the effective standard of financial disclosure. To reduce moral hazard problems, the authorities should impose sanctions on those who require access to lender-of-last-resort facilities. They should also refrain from directing bank lending. A critical part of the regulatory overhaul would involve tighter effective prudential restrictions on banks’ foreign currency exposure and position taking. This could prevent banks and their international creditors from taking advantage of the financial sector safety net, thus reducing their capacity to engage in carry trade with the associated capital inflows.

14. Over the short run, financial market reform of this kind will not benefit countries that have already become over-exposed. Stemming capital outflows, once confidence has snapped, will often require very high interest rates which will undermine the economy in general and the banking system in particular. Attempts to reduce the outflows with a transaction tax on capital flows would be relatively ineffective, unless very high tax rates were employed. Imposing quantitative restrictions on outflows could provide short-term respite, but would seriously compromise the future access of banks in emerging market economies to the international inter-bank market. Given these difficulties, international conditional assistance in unwinding the currency imbalances in an orderly manner would seem to be the most promising response.

## **IV. Macroeconomic conditions**

15. Large-scale capital inflows will have a tendency to reverse themselves if they unsettle the macroeconomic environment. While, in principle, countries can neutralise the expansionary effects of capital inflows through various means (sterilisation via open market operations, higher reserve requirements in the banking system, or through the tightening of fiscal policy), in practice, the various methods are not without limitations and problems. For example, open market operations can only be undertaken if there is a well-functioning securities market and such sterilisation operations often turn out to be costly for the government budget and may encourage even stronger inflows of capital; higher reserve requirements may result in dis-intermediation as funds are channelled via institutions not subject to such requirements; and fiscal policy must be extremely flexible in order to cancel the effects of yearly capital inflows amounting to several per cent of GDP and may not be altogether feasible where the government sector is small. If the authorities are unable or unwilling to use these instruments and macroeconomic imbalances emerge, the prospect of possible problems in servicing foreign debt and/or a devaluation of the currency can result in large scale outflows.

16. Despite the large inflow of foreign capital to key emerging market economies, on the surface there was little evidence to suggest that the internal macroeconomic balance became unsettled in the 1990s. Indeed:

- Asset price bubbles were mostly absent in the Asian crisis countries, with property prices in many cases having fallen in real terms since the early-1990s<sup>16</sup>. Because of greater availability of space (e.g. due to less restrictive planning) in many emerging market economies, property prices can be held in check in the face of strong demand pressure.
- Government budgets were generally in a small deficit or in surplus (Figure 3). Fiscal problems were not pronounced in Latin America at the time of the Mexican crisis, and the current turbulence is taking place despite no serious fiscal disequilibria, with the notable exception of Brazil. Moreover, all the Asian crisis countries had a surplus in the central government account in the mid-1990s.

17. On the other hand, while consumer price inflation showed little signs of increasing in the Asian crisis countries, and the hyperinflation in some of the Latin American countries had been brought under control, the rate of price increases in Asia was higher than in the mature economies and in many Latin American countries it was even substantially higher. This factor did play a role in the eventual crises. The reversal of capital flows to Mexico took place against a backdrop of a large current account deficit (Figure 4) and a 40 per cent increase in the real effective exchange rate (REER) in the five years prior to the crisis (Figure 5). The Latin American countries most exposed to the current turbulence have also generally seen a significant worsening of their external competitiveness. However, even the worst-affected Asian countries in the current crisis had experienced no major deterioration in their external competitiveness over extended periods until 1995, when the appreciation of the US dollar *vis-à-vis* the yen started to erode their competitive position. All the Asian crisis countries were running current-account deficits in excess of 3 per cent of GDP in the mid-1990s, reflecting strong demand pressures at home, and actual deficits and increasing REERs may have unsettled investors' confidence.

## V. International liquidity, herding and contagion

### *International liquidity problems*

18. A reduction in foreign exchange reserves relative to short-term external claims may have amplified investors' reactions to adverse news about economic fundamentals<sup>17</sup>. Foreign reserves may be used as a gauge by international creditors of the capacity of the authorities to act as a lender of last resort for domestic entities with foreign debt<sup>18</sup>. As long as foreign reserves are well in excess of short-term external debt, individual creditors may feel reasonably assured that their assets are protected from a "run" by other creditors. As a result, they can consequently adjust their portfolios in an orderly way to news of

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16. In Thailand, both commercial and residential property prices were subdued in the mid-1990s; in Indonesia and Malaysia, commercial property prices showed no signs of picking up in the mid-1990s, whereas there was an increase in residential property prices.

17. See notably Dooley (1997). The importance of foreign reserve cover in amplifying investors' reactions in the Mexican crisis has been emphasised in e.g. Sachs *et al.* (1996), and in Calvo and Mendoza (1996). Radelet and Sachs (1998) emphasise it in explaining the Asian crisis.

18. When domestic currency can be freely converted into foreign currency, the ratio of foreign reserves to money (M2) provides an alternative measure of reserve cover. Foreign reserves are typically only a fraction of the domestic money supply.

banking and macroeconomic problems. In the opposite case, individual creditors will be confronted with a smaller probability of recapturing their investments in the event of problems, increasing the incentive to withdraw funds as quickly as possible. These types of incentives can generate a self-fulfilling financial panic resulting in disproportionately large outflows, especially when they are accompanied by evidence of disclosure problems.

19. Liquidity problems seem to have been an important element in the sharp reversal of capital flows in both the Mexican and Asian crises. In mid-1994, foreign reserves in Mexico were only around 60 per cent of short-term foreign debt (Table 6), which may have triggered a run by investors. Some of the other countries seriously affected by the turbulence in the mid-1990s, such as Argentina, also had low reserve cover. This was the case for some of the Asian countries by the mid-1990s and the reserve cover continued to drop until the onset of the crises in 1997. The importance that investors attach to the reserve cover was amply demonstrated when the Korean authorities announced in late 1997 that short-term external debt was higher and “employable” foreign reserves were lower than had been earlier reported.

### *Herd behaviour and contagion*

20. There is concern that volatile capital flows may in part be driven by herd behaviour in financial markets and contagion effects. Herding in financial markets would tend to amplify capital flows in both directions (“overshooting”), and contagion would tend to determine capital flows to one country by reference to factors in another country perceived to be similar and/or interdependent through trade and financial linkages. Herding and contagion need not be irrational in a world where information is costly. Under these circumstances it can be optimal for one investor to follow the lead of another perceived to have an information advantage. To “hide in the herd” may also be an optimal strategy due to principal agent problems. Moreover, an environment in which international investors expect to be bailed out in the event of problems will make it rational for an investor to follow the herd. But even if herding and contagion may be rational from an individual point of view, to the extent that they result in excessive volatility, they are unlikely to be socially optimal or desirable. In any case, the link between cross-border capital flows and the economic fundamentals of the receiving country are weakened or severed.

21. It is uncertain to what extent herding and contagion, unrelated to economic fundamentals, played a role in driving recent capital flows. Low risk premia on emerging market debt in the mid-1990s could suggest that these effects were operative. There is also substantial evidence that a crisis in one country increases the probability of a crisis in other countries (Eichengreen *et al.*, 1996). To the extent that the transmission is related to trade linkages, and there is evidence that suggests that this transmission channel has been important in the past, such contagion is based on economic fundamentals. An alternative transmission channel can occur through “demonstration” or “wake-up call” effects (Goldstein, 1998): an event in one country alerting investors to risks in “similar” countries that had not been properly taken into account previously, thus leading to a re-adjustment of balance sheets. Such contagion could bring exposure more into line with economic fundamentals, provided that the re-assessment is based on a country-by-country basis. It cannot be determined to what extent such revisions of risks have been based on an assessment of fundamentals rather than being driven by herd mentality.

22. While the contagion across the Asian countries could arguably be explained by trade and “wake-up” linkages (Goldstein, 1998), that from Asia to Latin America and Russia seems to have operated via financial linkages: Asian banks suffering losses on lending at home selling their holdings of Russian and Brazilian high-yielding bonds to improve their liquidity position. The ensuing drop in bond prices in these countries was then transmitted to other key emerging markets via widely-employed modern risk management systems, whereby market volatility in one country automatically increases estimated credit and market risk in another country with similar past volatility.

***Policy implications***

23. Countries can reduce their vulnerability to liquidity-driven panics by maintaining sufficiently high reserve cover and by establishing credit lines that can be drawn on in a crisis situation. Moreover, to minimise the risk of falling victim to herd behaviour and contagion, the most appropriate policy in the long run is to make it easier and less costly for foreign investors to acquire information about the economy, and to take measures to reduce the perception that investors will be bailed out if they make mistakes. However, countries on the verge of financial panics have few effective levers to modify outflows, as interest rate hikes and the imposition of a transaction tax on capital flows are likely to prove ineffective in these circumstances. Quantitative restrictions on outflows may not even prove to be very effective, as there would be strong incentives to find measures to circumvent such regulations.

24. Recent proposals to reform the international financial architecture have been motivated by a perceived need to help countries facing a crisis. Such help is not necessarily altruistic insofar as it acts as a “circuit-breaker” to contagion or herding effects. Thus, the availability of official credit lines to countries facing adverse contagion effects despite sound fundamentals would make it easier for countries to meet crises and it could also help to prevent liquidity-driven panics altogether. An international lender of last resort and an international bankruptcy court should also help to prevent financial panics altogether. In order for the international community to create effective institutions of this kind, it is necessary to adequately address the moral hazard inherent in such arrangements (Giannini, 1998). At the domestic level, this is done by giving the lender of last resort and bankruptcy courts vast powers to unilaterally impose conditions on those seeking their services. Wielding such powers with supra-national institutions may not be compatible with national sovereignty. However, to the extent that some form of orderly workouts can be arranged to deal with the co-ordination failures among international creditors, the pressure to impose capital controls would be lessened.

**VI. Exchange-rate arrangements and capital flows**

25. The volatility of capital flows to emerging economies in the 1990s has been attributed in part to policies of maintaining fixed or predictable currency pegs (Reisen, 1998). Such exchange-rate arrangements seem to have made businesses and banks in many countries complacent about currency risks, and fixed or predictable pegs have contributed to a trend deterioration in international competitiveness in some emerging market economies. Moreover, once problems emerged, currency pegs often offered currency speculators a one-way bet, and the abandonment of pegs seriously damaged policy credibility. The introduction of more flexible arrangements, such as floating, could thus contribute to greater stability of incipient capital flows.

26. It has been widely argued that either a freely floating exchange rate regime or a currency union is preferable to a pegged-but-adjustable exchange rate system. Nevertheless pegged rate regimes have been used to good effect in a number of cases. The rationale in their favour in emerging market economies is the same as in some mature market ones: by providing a clear and transparent nominal anchor, a pegged exchange rate can help to establish the credibility of stabilisation programmes in countries with a history of high inflation rates. Alternative nominal anchors, such as money supply and inflation targets, may not be adequate for technical reasons (e.g. unstable money demand) and are unlikely to carry the same weight as an exchange-rate peg, even if accompanied by institutional changes, such as the independence of the central bank. The experience of many countries, including many in Latin America, demonstrates that pegged rates have often been fundamental in breaking wage-price-currency spirals<sup>19</sup>. However, to durably change price dynamics, a peg must be the over-riding objective of macroeconomic policy for a

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19. See e.g. Edwards (1995). The experience with exchange-rate-based stabilisations is also reviewed in Chapter 6 of IMF (1996a).

considerable amount of time, and external imbalances must be tackled with demand-management instruments before the disequilibria undermine the exchange-rate peg.

27. Once stable macroeconomic conditions have been established, the authorities will most likely achieve sufficient credibility to allow them to gain control over monetary policy, and to use the money supply or other targets as nominal anchors, without raising inflationary expectations. Assuming that underlying cost conditions are reasonably in line with main trading partners, the authorities may wish to continue with a fixed rate regime. The success of such arrangements will depend on the fundamental structure of the economy<sup>20</sup>, including:

- *Exposure to trade.* For a small country, generally, the more open an economy is to foreign trade, the more likely will fluctuations in the exchange rate (within limits) affect its economic performance. In this case, even if a country had a flexible exchange rate arrangement, the monetary authorities would likely have to concentrate on maintaining exchange rates relatively stable in order to achieve both domestic price and financial stability.
- *Production and export diversification.* A more diversified production and export structure will make a fixed exchange rate regime more feasible, as diversification makes a country less vulnerable to term-of-trade shocks arising from swings in demand or supply for an individual commodity and less in need of exchange rate adjustment.
- *Extent of trade integration.* A high degree of geographical concentration of trade will favour fixed rates *vis-à-vis* major trading partners, since shocks are likely to have symmetric effects in both countries.
- *Extent of labour market flexibility.* If a fixed exchange rate arrangement is chosen, a high degree of labour mobility *vis-à-vis* a trading partner and/or high degree of nominal wage flexibility will greatly help cushion shocks. However, there may be no alternative to flexible rates when labour markets are rigid.
- *Extent of liquidity of foreign exchange markets and the depth and stability of the domestic financial system.* If foreign exchange markets are illiquid and domestic financial markets are thin, it may not be feasible to have flexible exchange-rate arrangements because of the volatility of the currency and the cost of hedging.

28. On the basis of these principles, a large emerging market economy would most likely benefit from adopting flexible arrangements, such as floating. Such an economy is likely to be characterised by comparatively small exposure to trade, but its export structure is often concentrated on relatively few products destined for geographically dispersed markets. Moreover, its large size implies that a well-functioning foreign exchange market is more likely to develop. Very small emerging economies are unlikely to be able to support well-functioning currency markets, and may thus have to adopt managed exchange rates, relying on flexibility in the labour and product markets to meet terms-of-trade shocks. Pegs may also be appropriate on structural grounds, as smaller countries are typically more open and often tend to concentrate their exports to a single country.

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20. See Appendix I of Eichengreen and Masson, *et al.* (1998).

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Table 1. **Selected aspects of foreign capital controls in key emerging market economies, 1995<sup>a</sup>****A. Capital-market securities and money-market instruments**

|             | Outflows  |   | Inflows   |  |
|-------------|---|---|---|--|
|             | Purchases abroad by residents   | Sales or issues locally by non-residents  | Purchases in the country by non-residents   | Sales or issues abroad by residents  |
| Indonesia   | -   | No explicit restriction on the public offering by non-residents   | Maximum foreign equity holdings: 49%  | No restriction as long as the shares are not listed locally  |
| Thailand    | Subject to central bank approval  | Non-residents subject to same rules as locals on prior approval   | Maximum foreign equity holdings: 25% in financial institutions and 49% in other corporations  | Prior approval required for issues   |
| Korea       | Permitted freely in case of securities  | Prior approval required to issue; the sale of securities permitted but approval required for money market instruments | Maximum foreign equity holdings in listed companies: 18%; approval required for money market instruments with the exception of approved institutional investors | Issue of won-denominated securities subject to prior approval; otherwise reporting requirement only.   |
| Malaysia    | No controls for transactions below a given limit; prior approval if above limit except under certain conditions                                   | No restriction on selling, but prior approval required to issue securities and money market instruments.              | Maximum foreign equity holdings: 30%  | Securities: No control for sales; approval required to issue. Money-market instruments: No restriction below a given amount; prior approval if above limit     |
| Philippines | Prior approval for securities above a given limit, controls on money market instruments   | Allowed only after proper licence is secured.   | No restriction  | Registration required  |
| Argentina   | No restriction  | Issues by non-residents subject to same rules as residents.   | No restriction  | No restriction   |
| Brazil      | Limited to indirect ownership of shares issued by companies with headquarters in the MERCOSUR countries. No controls on money market instruments. | Regulated   | Direct foreign ownership generally not permitted; indirect ownership via special funds permitted. No controls on money-market instruments.                      | Issue of securities abroad subject to prior authorisation from the central bank  |
| Chile       | No restriction, except for financial institutions   | Same as for the purchase in the country by non-residents for money market instruments                                 | Permitted but generally subject to a reserve requirement of 30% for one year, and a minimum holding period for one year.  | No restriction, except for financial institutions  |
| Mexico      | Restriction on financial institutions' purchase of some forms of securities   | Restricted for securities.  | Restriction on shares and other securities of a participating nature, and on debt and money-market instruments denominated in domestic currency                 | Restriction on debt securities denominated in domestic currency, and the sale of money-market instruments to non-resident financial institutions is prohibited |

a) Position as of December 1995, except for Korea (June 1996), Brazil (February 1996) and Chile (April 1996).

Table 1. continued

**B. Credit operations**

|             | Commercial credits  |   | Financial credits   |  |
|-------------|---|---|---|--|
|             | By residents to non-residents                                   | To residents from non-residents   | By residents to non-residents   | To residents from non-residents                                      |
| Indonesia   | No restriction in general                                       | Generally no restriction, but periodic reporting required   | No restriction in general   | Restriction  |
| Thailand    | No restriction  | No restriction  | Limited to authorised banks   | No restriction   |
| Korea       | No restriction for deferred-receipt of exports if under 3 years | No restriction with exceptions  | Prior approval required   | Authorisation required, except for selected enterprises              |
| Malaysia    | No controls for credit if under 6 months                        | Credit facilities below a given amount permitted; above that amount prior approval required   | No restriction for transactions below a given amount; prior approval if above that amount except under certain conditions | Same as for commercial credit.                                       |
| Philippines | No controls in general  | Prior approval for government guaranteed short-term trade-related loans; otherwise only reporting required  | Prior approval required   | Same as for commercial credit.                                       |
| Argentina   | Funds lent by residents to non-residents must be used locally   | No restriction  | Same as for commercial credit   | No restriction   |
| Brazil      | Restriction   | Credits in excess of 360 days must be authorised; pre-payment of export must be authorised. External finance for imports authorised if the operations have a term of at least 1 year. | Requests for authorisation may be approved.   | Subject to prior approval. Proceeds must be kept within the country. |
| Chile       | No restriction for non-financial institutions                   | Permitted, but subject to 30% reserve requirement on an average balance   | Permitted for non-financial institutions.   | Subject to a one-year 30% reserve requirement                        |
| Mexico      | Credits must not be denominated in dom. currency                | Restriction   | Credits must not be denominated in dom. currency  | Restriction  |

Table 1. continued

**C. Bank-related transactions**

|             | Loan transactions <sup>a</sup>  |  |  | Deposit accounts   |   |
|-------------|---|--|--|--|---|
|             | Borrowing abroad  | Lending to non-residents   | Lending locally in foreign currency  | Residents' foreign exchange accounts abroad  | Non-residents domestic currency accounts  |
| Indonesia   | Prior approval, annual ceilings imposed for loans with maturities in excess of two years                                | Prohibited   | Permitted, subject to the requirement that 80% of these loans must be provided for export activity | -  | Prohibited  |
| Thailand    | No restriction  | No restriction on foreign-currency lending by authorised banks   | Permitted, but can only be counted partially as foreign assets                                     | Approval is required if deposits are made with funds of domestic origin  | Approval required if funds are of domestic origin and under certain other conditions                  |
| Korea       | Reporting requirements for loans with maturities above one year if funds exceed a given amount                          | Prior notification if loans exceed a given amount, otherwise ex post notification or freely permitted for loans below a given amount | Loan ceilings according to economic sector   | Permitted up to a certain ceiling for corporations and individuals; no restriction for institutional investors | Permitted for the purpose of converting funds into foreign currency and transferring them abroad      |
| Malaysia    | Tier I banks can borrow freely  | No controls on lending in foreign currency; lending in ringit subject to conditions  | Tier I merchant banks allowed to lend freely   | Prior approval for residents with domestic borrowing   | No restriction or reporting requirements only   |
| Philippines | Authorised banks are subject to rules on foreign borrowing  | Certification required for peso lending  | Permitted under certain conditions   | No restriction   | Permitted, but a ceiling on the amount that can be converted into foreign currency                    |
| Argentina   | No restriction  | No restriction   | No restriction   | No restriction   | No restriction  |
| Brazil      | For terms exceeding 360 days, subject to authorisation and registration   | Restriction on lending exceeding 360 days  | Prohibition of foreign currency loans, but external foreign currency loans can be onlent           | Restricted to certain institutions   | Restricted to certain institutions, foreign citizens in transit, and Brazilian citizens living abroad |
| Chile       | No restriction on foreign trade credit, but this is subject to a reserve requirement of 30% against the average balance | Only allowed to grant loans related to foreign trade (but they can buy foreign securities under certain conditions)                  | Only permitted to grant foreign exchange credits associated with foreign trade                     | No restriction   | Prohibited  |
| Mexico      | Peso-denominated borrowing prohibited   | No restriction   | Permitted  | No restriction   | Term deposit accounts prohibited; accounts of non-resident financial institutions prohibited          |

a) Prudential regulations on bank borrowing abroad are reported in Table 4.

Source: IMF (1997), OECD (1995).

Table 2. Public sector involvement with the banking sector

|                  | Average annual costs of bank crises in per cent of GDP 1980-1995 | Deposit guarantee system, for commercial banks, 1995 <sup>a</sup> |                    | Public ownership of banks, (per cent of total assets) |
|------------------|--|---|--------------------|---|
|                  |  | Coverage per depositor  | Risk-based premium | 1994  |
| Korea            |  | none <sup>b</sup>   | ..                 | 13  |
| Mexico           | 0.96   | none  | ..                 | 28  |
| Hong Kong, China | 0.00   |   |                    | 0   |
| Indonesia        | 0.12   | none  | ..                 | 48  |
| Malaysia         | 0.31   | none  | ..                 | 8   |
| Thailand         | 0.05   | none  | ..                 | 7   |
| Chinese Taipei   | 0.00   |   |                    | 57  |
| Argentina        | 3.69   |   |                    | 36  |
| Brazil           | 0.67   |   |                    | 48  |
| Chile            | 2.75   |   |                    | 14  |
| Russia           | n.a.   | none  | ..                 | 30  |
| Venezuela        | 1.20   |   |                    | 30  |
| United States    | 0.21   | \$100 000   | Yes                | 0   |
| Japan            | 0.53   | 10 mill. yen  | No                 | 0   |
| Germany          | 0.00   | 100 per cent <sup>e</sup>   | No                 | 50  |
| France           | 0.07   | 400 000 FF  | No                 |   |
| Italy            | n.a.   | 200 mill. lire  | Yes                |   |
| United Kingdom   | 0.00   | £18 000   | No                 | 0   |
| Canada           | 0.00   | C\$60 000   | No                 |   |
| Belgium          | 0.00   | 15 000 Ecu  | No                 |   |
| Netherlands      | 0.00   | 20 000 Ecu  | n.a. <sup>f</sup>  |   |
| Sweden           | 0.43   | 250 000 Skr.  | Yes                | 7 <sup>d</sup>  |
| Switzerland      | 0.00   | 30 000 Sfr.   | Yes                |   |

a) "none" means that no formal deposit guarantee scheme was in place in 1995.

b) The implementation of a deposit insurance scheme was postponed by the 1994-95 banking crisis.

c) January 1997.

d) 1995.

e) Limited to 30 per cent of the bank's liable capital (per depositor).

f) Losses are partitioned among the participating banks.

Source: BIS *Annual Report* (1997); Caprio and Klingebiel (1996); IMF (1998); and Kochnar *et al.* (1998).

Table 3. Incentives for adequate risk assessment in banking systems

|                  | Capital adequacy ratio<br>(Basle definition) |                           | Maximum<br>lending to a<br>single borrower | Sub-standard loans<br>1996 |                            | Non-<br>performing<br>loans, as<br>percentage<br>of all loans<br>1996 |
|------------------|--|---------------------------|--|----------------------------|----------------------------|---|
|                  | Minimum<br>ratio, 1995                       | Actual ratio <sup>a</sup> | Per cent of<br>capital                     | Months of arrears          | Provisioning<br>(per cent) |   |
| Korea            | 8  | 9.1 <sup>b</sup>          | 15   | 6+                         | 20-75 <sup>j</sup>         | 0.8   |
| Mexico           | 8  | 13.1 <sup>b</sup>         | 10-30 <sup>e</sup>                         | 3+                         |                            | 12.2 <sup>c</sup>   |
| Hong Kong, China | 8  | 17.5                      | 25   | none                       | none                       | 2.7   |
| Indonesia        | 8  | 11.9                      | 10-20 <sup>d</sup>                         | 3-6                        | 10                         | 8.8   |
| Malaysia         |  |                           | 30 <sup>g</sup>                            | 6-12                       | variable                   | 3.9   |
| Thailand         | 8  | 11.3                      | 25 <sup>h</sup>                            | 6+                         | 7½-15 <sup>i</sup>         | 7.7 <sup>d</sup>  |
| Chinese Taipei   | 8  | 12.2                      | 3-15                                       | 6+                         | variable                   | 3.8   |
| Argentina        | 12   | 18.5                      | 15   | 3-6                        | 1-25 <sup>j</sup>          | 9.4   |
| Brazil           | 8  | 12.9                      | 30   | 3-6                        | 20-100 <sup>j</sup>        | 5.8   |
| Chile            | 8  | 10.7                      | 5 <sup>i</sup>                             | 1-2                        | 20 <sup>k</sup>            | 1.0   |
| Russia           | 8  | 13.5 <sup>d</sup>         | 50-100                                     |                            |                            |   |
| Venezuela        | 8  |                           |  | 4-6                        | 10                         | 3.8   |
| United States    | 8  | 12.8                      | 15   | 3+                         |                            | 1.1   |
| Japan            | 8 <sup>c</sup>                               | 9.1                       | 20   | 3+ <sup>m</sup>            |                            | 3.4   |
| Germany          | 8  | 10.2 <sup>d</sup>         | 25   |                            |                            |   |
| France           |  | 11.1 <sup>d</sup>         |  |                            |                            |   |
| Italy            | 7-8 <sup>l</sup>                             | 13.0                      |  |                            |                            | 10.1  |
| United Kingdom   |  | 11.5 <sup>b</sup>         |  |                            |                            |   |
| Canada           | 8  | 10.2 <sup>d</sup>         |  |                            |                            |   |
| Sweden           | 8  | 16.3 <sup>b</sup>         |  |                            |                            | 3   |
| Netherlands      | 8  | 11.4                      |  |                            |                            |   |
| Belgium          | 8  | 13.7                      |  |                            |                            |   |
| Switzerland      | 8  | 10.3                      |  |                            |                            |   |

- a) 1996 for OECD economies; 1995 for others.  
b) Commercial banks only.  
c) Only enforced from 1998 for international banks; from 1999 for national banks.  
d) 1997.  
e) Per cent of net capital; the lower figure refers to individuals and the higher to corporations.  
f) The lower figure refers to a single person; the higher to groups of affiliated borrowers.  
g) Capital consists of paid-up capital, reserves and provisions.  
h) Per cent of tier-one capital.  
i) Per cent of capital and reserves.  
j) Conditions depend on types of collateral and guarantees.  
k) Provisions at an estimated default risk of 5-40 per cent.  
l) 7 per cent for banks being part of conglomerates.  
m) Changed from 6 months in 1998.

Source: OECD; BIS; and Goldstein and Turner (1996).

Table 4. Prudential limits on banks' currency exposure

|               | Limits on overall position<br>(per cent of capital)       | Other comments  |
|---------------|---|---|
| Indonesia     | 25 (NAP)  | Short-term liabilities limited to 30 per cent of own capital  |
| Malaysia      | Variable, depending on management quality                 |   |
| Korea         | 15 (sum of long positions)<br>10 (sum of short positions) | Limit on spot short positions is 3 per cent of bank capital or \$US5 million, whichever is greater. |
| Thailand      | 20 (net long positions)<br>15 (net short positions)       |   |
| Chile         | 20 (NAP)  |   |
| Mexico        | 15  | Average overall short position is forbidden   |
| United States | None  |   |
| Germany       | 21 (GAP)  |   |

*Note:* NAP stands for Net Aggregate Position, i.e. the difference between short and long positions; GAP stands for the gross aggregate position, i.e. the sum of short and long positions.

*Source:* Abrams and Beato (1998); IMF (1996*b*)

Table 5. A survey of financial disclosure, 1995

|                  | Quality of financial reporting : ranking <sup>a</sup> |           |       |         | Quality of auditing                             |                                  |
|------------------|---|-----------|-------|---------|---|----------------------------------|
|                  | Industrial companies                                  | Insurance | Banks | Average | Comprehensiveness of audit reports <sup>b</sup> | Promptness (No. of days elapsed) |
|                  | (0 to 100; ideal accounting practices = 100)          |           |       |         |   |                                  |
| Korea            | 68  | 42        | 58    | 56      | 1   | 38                               |
| Mexico           | 71  | n.a.      | 42    | n.a.    | 1   | 56                               |
| Hong Kong, China | 73  | 54        | 50    | 59      | 1   | 97                               |
| Malaysia         | 79  | 78        | 78    | 78      | -1  | 98                               |
| Thailand         | 66  | 67        | 77    | 70      | 1   | 50                               |
| Chinese Taipei   | 58  | 33        | 46    | 46      | 0   | n.a.                             |
| Argentina        | 68  | 51        | 51    | 57      | 0   | 70                               |
| Brazil           | 56  | n.a.      | 55    | n.a.    | 0   | 55                               |
| Chile            | 78  | 40        | 41    | 53      | 0   | n.a.                             |
| United States    | 76  | 74        | 79    | 76      | 1   | 48                               |
| Japan            | 71  | 49        | 66    | 62      | 1   | 87                               |
| Germany          | 67  | 59        | 61    | 62      | 0   | 91                               |
| France           | 78  | 50        | 61    | 63      | 1   | 104                              |
| Italy            | 66  | 59        | 61    | 62      | 1   | 119                              |
| United Kingdom   | 85  | 60        | 76    | 74      | 1   | 89                               |
| Canada           | 75  | 65        | 76    | 72      | 1   | 48                               |
| Sweden           | 83  | 60        | 70    | 71      | -1  | 85                               |
| Netherlands      | 74  | 62        | 54    | 63      | 1   | 82                               |
| Belgium          | 68  | 55        | 41    | 55      | 0   | 102                              |
| Switzerland      | 80  | 48        | 57    | 62      | 1   | 84                               |
| Average          | 72  | 56        | 60    | 63      | 0.5   | 78                               |

a) Companies' annual accounts are rated on a scale from 0 to 100 by seven criteria: 1) general information; 2) income statement; 3) balance sheet; 4) flow of funds statement; 5) accounting policies; 6) stockholders' information; and 7) supplementary information. The figures reported in the table are the average across companies.

b) Ranked as "above average", "average" and "below average". Here the values 1, 0 and -1 are attached to the three ratings.

Source: Center for International Financial Analysis & Research (1995).

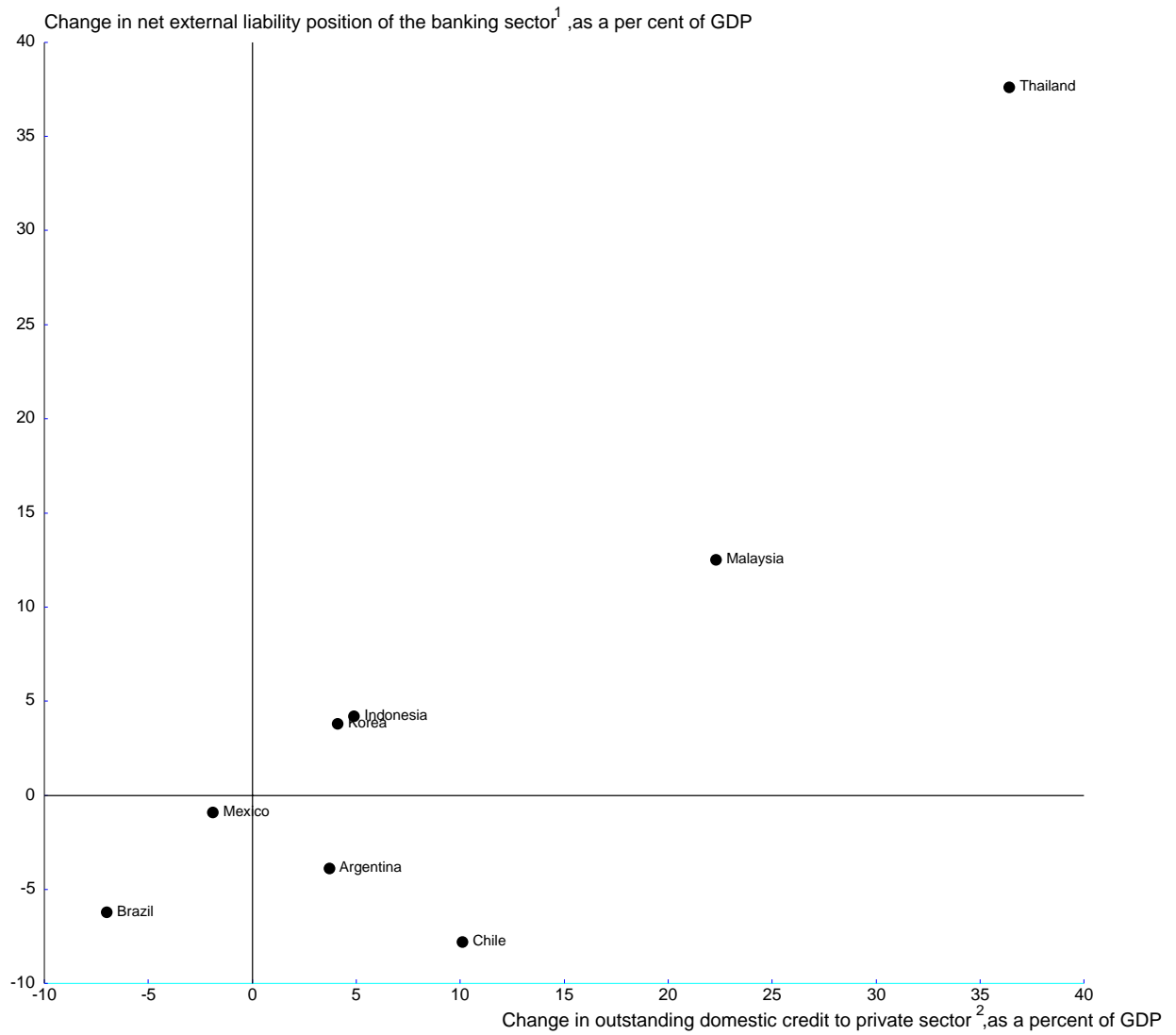
Table 6. Foreign reserves as a per cent of short-term foreign debt<sup>a</sup>

|           | End-1990 | Mid-1994 | End-1996 | End-1997 |
|-----------|----------|----------|----------|----------|
| Indonesia | 55       | 58       | 53       | 47       |
| Korea     | 73       | 62       | 50       | 142      |
| Malaysia  | 475      | 397      | 241      | 34       |
| Thailand  | 151      | 101      | 83       | 67       |
| China     | 335      |          | 333      | 422      |
| Argentina | 65       | 75       | 72       | 65       |
| Brazil    | 34       | 142      | 136      | 104      |
| Chile     | 148      | 198      | 192      | 164      |
| Mexico    | 55       | 58       | 72       | 105      |

a) Foreign reserves equal total reserves minus gold; short-term debt is defined as claims of all BIS reporting banks vis-à-vis the countries, at maturities up to and including one year.

Sources: BIS (various issues), IMF (various issues).

**Figure 1. Change in loan leverage and net external liability position of the banking sector, 1990-1996**

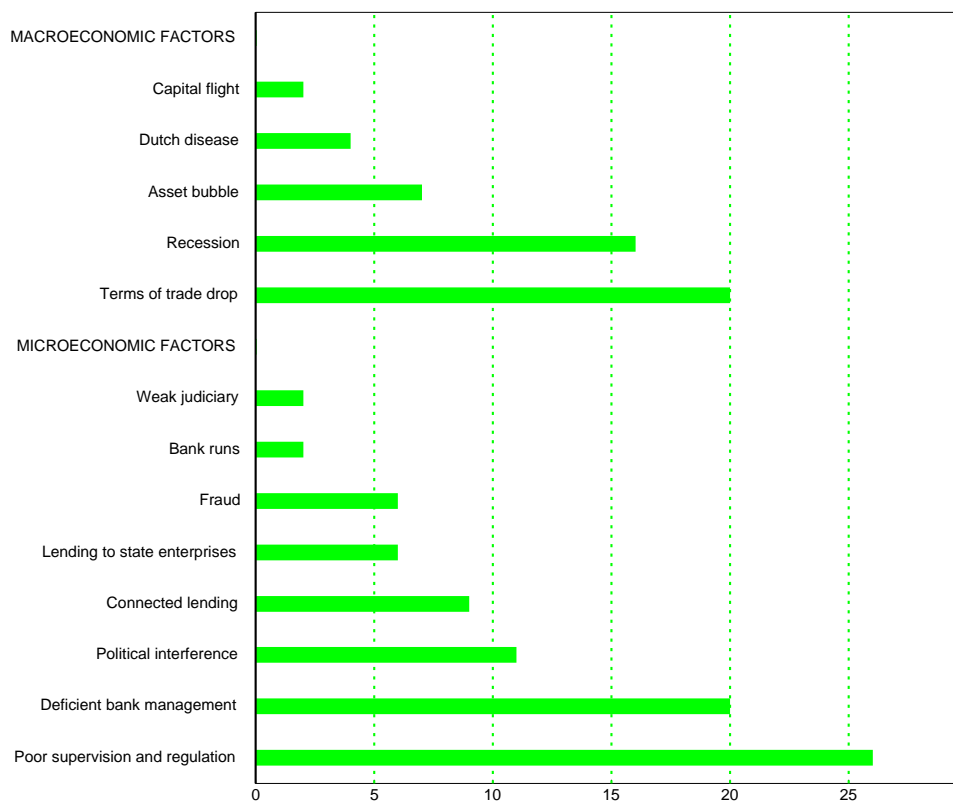


1. Vis-à-vis BIS reporting banks

2. As recorded in the monetary survey

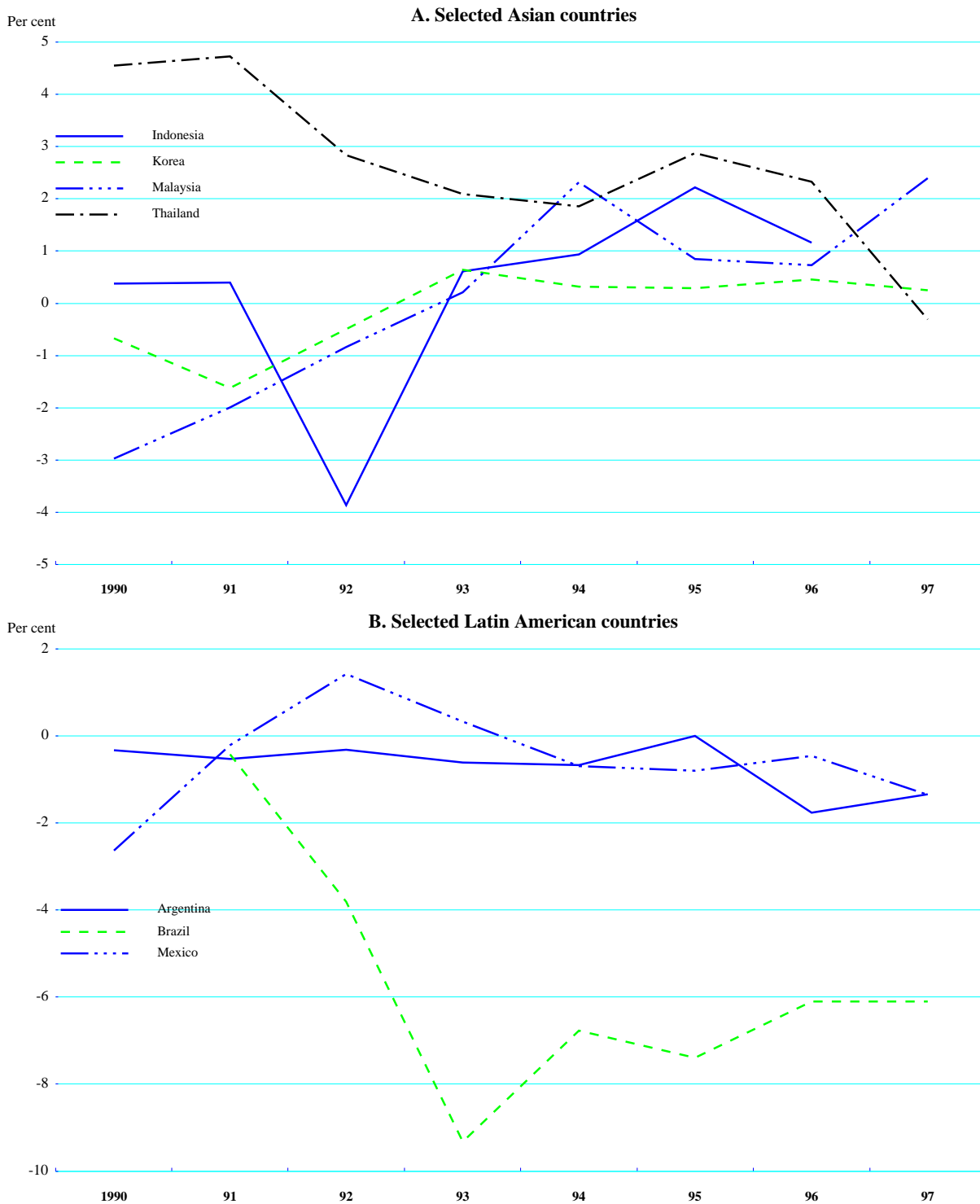
Sources : IMF, BIS.



**Figure 2. Factors behind Twenty-Nine Bank Insolvencies**

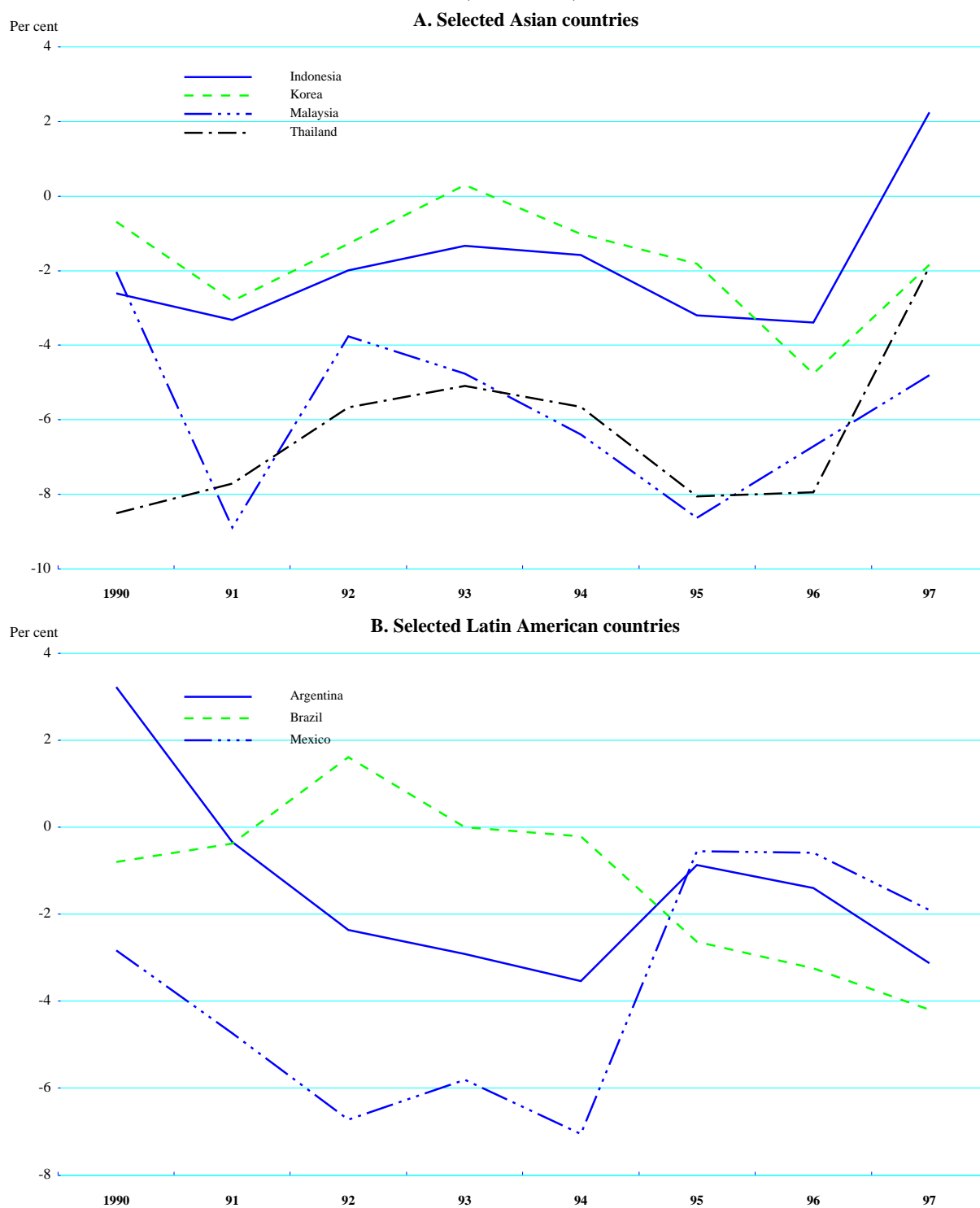
Note: Shows the number of times each factor was cited in twenty-nine country cases; twenty-nine is the maximum number of citations possible.  
 Source: Caprio and Klingebiel 1996.

**Figure 3. Government<sup>1</sup> finances in selected emerging market countries**  
(Per cent of GDP)

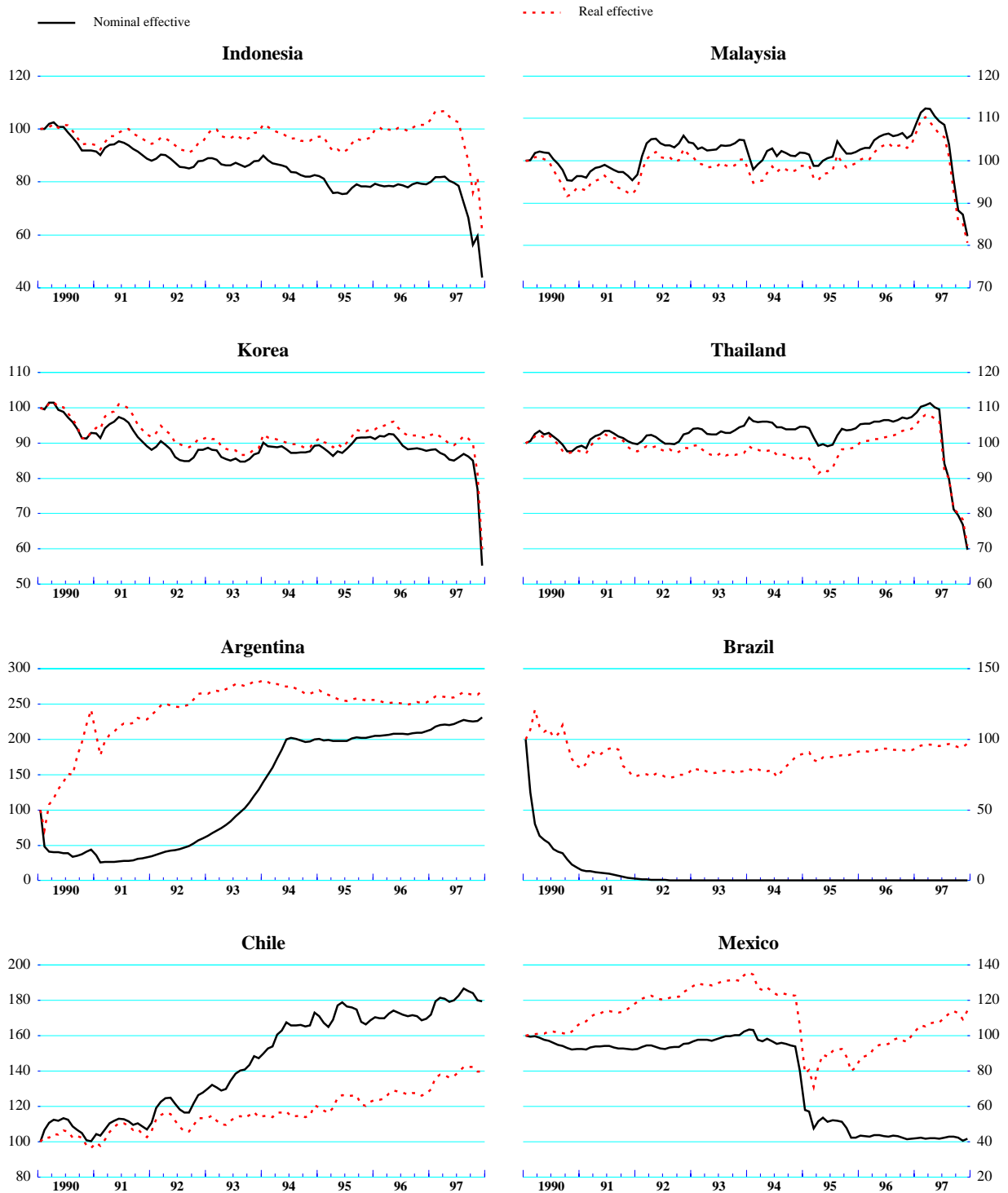


1. Budgetary central government or consolidated central government.  
Source: IMF International Financial Statistics (various issues); OECD.

**Figure 4. Current account deficits in selected emerging market countries**  
(Per cent of GDP)



**Figure 5. Nominal and real effective exchange rates<sup>1</sup>**  
 January 1990=100



1. The nominal exchange rate refers to domestic currency units per US dollar.  
 Source : OECD and IMF.

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