

# I Overview

This paper aims to develop a deeper understanding of the role that capital controls may play in coping with volatile movements of capital, and of complex issues surrounding capital account liberalization. It provides a detailed analysis of specific country cases to shed light on the potential benefits or costs of capital controls, including those used in crisis situations. It also considers the important link between prudential policies and capital controls, including the improvement of prudential practices and accelerated financial sector reform to address the risks involved in cross-border transactions. Chapter II reviews the experience of selected countries with the use or removal of capital controls based on a detailed review and comparison of the experience of a group of 14 countries that used various types of capital controls, often to manage episodes of unsustainable capital flows. Chapter III examines the prudential approach to managing the risks associated with capital flows, and Chapter IV provides some conclusions.

The review of country experiences in Chapter II is organized around five key themes. These themes include the use and effectiveness of controls on capital inflows in limiting the potentially destabilizing effects of short-term capital flows and preserving monetary policy autonomy under tightly managed exchange rate systems (involving formal or de facto peg arrangements); the potential benefits and costs of reimposing selective controls on capital outflows to reduce pressures on the exchange rate, including in the context of currency or banking crises, as well as of extensive exchange controls that may entail restrictions on both capital and current international transactions; long-standing and extensive capital controls and their role in reducing financial vulnerability; and the benefits and costs of rapid and wide-ranging liberalization of previously restrictive exchange control regimes. For each group, two to five countries were selected for case studies that provide recent and diverse experiences.<sup>1</sup>

<sup>1</sup>The choice of countries as well as the number of the country cases for a group was based on ready availability of adequate information to make an informed analysis. Conditions in world goods and financial markets have changed profoundly during the

For the first four key themes above, the study examines the motivations of countries to limit capital flows; the role that the controls may have played in coping with particular situations; the nature and design of the control measures; and their effectiveness with respect to influencing targeted flows and activities and realizing their intended objectives. The study also seeks to identify the factors that may have influenced the effectiveness of the controls, as well as the potential costs that may have been associated with their use. Brief descriptions and assessments of each country's experience can be found in Chapters V–IX, and these form the basis for the analyses in Chapter II. Appendices I–III provide a more detailed study of three countries that have received widespread attention in terms of their capital control measures: Chile, India, and Malaysia. In the case of the benefits and costs of liberalization, the discussion also focuses on the underlying reasons that have motivated countries to rapidly liberalize capital flows, and the factors that may have impinged on the effectiveness of the liberalization strategies.

In analyzing the effects of capital controls, drawing conclusions from econometric and statistical analysis is inherently problematic, not least because of the difficulty in quantifying the capital control measures, the quality of capital account data, and the confluence of policy and the external environment influencing the volume of capital flows. This paper adopts a descriptive approach, and concentrates on the effectiveness of capital controls and the costs associated with their use. While every effort has been made to provide an objective account and analysis of the developments, the country episodes may be open to different interpretations.

The prudential approach to managing the risks involved in cross-border transactions is described in Chapter III. This area has only recently received

last three decades, so the paper focuses on the experience of (mainly developing) countries that have used or liberalized capital controls during the last 5 to 10 years. Most advanced countries had liberalized their capital accounts completely by the beginning of this decade.

more widespread attention, and the prudential standards themselves are under development. The chapter reviews progress in establishing prudential standards for cross-border flows and issues in their implementation, and discusses their limitations and the conditions for their effectiveness. The chapter also examines the link between capital controls and prudential policies.

The analysis throughout the main paper takes as its starting point the observation that economic performance—and the volume, composition, and volatility of international capital flows—will depend to a large extent on the mix of policies. The effec-

tiveness of particular measures or institutions is usually gauged in the first instance with respect to the objectives of a country's economic policy. These objectives may differ across countries, and so will the appropriate policy mix. Limiting macroeconomic and financial instability is among the most widely shared objectives, and macroeconomic policies, capital controls, and prudential measures may all have a role to play in achieving this goal. Although there is no unique best approach, the analysis in this paper underscores that some types and combinations of policies tend to be more effective than others, and have fewer undesirable side effects.

## II Country Experiences

### General Considerations on the Use of Capital Controls

This section provides a brief summary of the general considerations involved in the use of capital controls, including the objectives they have been set to achieve, the ways in which their effectiveness has been assessed, the forms they have taken, and the potential costs that may be associated with their use. Country experiences presented in the subsequent sections are assessed in light of these general considerations.

### Objectives of Capital Controls

Many arguments have been advanced in the economic literature to justify the use of capital controls. Among these, second-best arguments identify situations in which capital account restrictions improve economic welfare by compensating for financial market imperfections, including those resulting from informational asymmetries. Proposals to address these imperfections range from improved disclosure and stronger prudential standards to the imposition of controls on international capital flows.

Policy implementation arguments hold that capital controls may help to reconcile conflicting policy objectives when the exchange rate is fixed or heavily managed. These arguments include preserving monetary policy autonomy to direct monetary policy toward domestic objectives and reducing pressures on the exchange rate. An additional, related, motivation for capital controls has been to protect monetary and financial stability in the face of persistent capital flows, particularly when there are concerns about (1) the inflationary consequences of large inflows, or (2) inadequate assessment of risks by banks or the corporate sector in the context of a heavily managed exchange rate that, by providing an implicit exchange rate guarantee, encourages a buildup of unhedged foreign currency positions. Finally, capital controls have also been used to support policies of financial repression to provide cheap financing for government budgets and priority sectors. Other political economy arguments are outside the scope of this review.

### Effectiveness and Potential Costs of Capital Controls

The effectiveness of capital controls has frequently been assessed on the basis of their impact on capital flows and policy objectives, such as maintaining exchange rate stability, providing greater monetary policy autonomy, or preserving domestic macroeconomic and financial stability. Much attention has been given in the literature to differentials between domestic and international interest rates, as capital controls tend to create a wedge between domestic and external financial markets. This wedge, however, may itself create incentives for circumvention; the effectiveness of controls will then depend on the size of this incentive relative to the cost of circumvention. If the controls are effective, capital flows would become less sensitive to domestic interest rates, which the authorities could then orient toward domestic economic objectives. These and other issues are considered in the country case studies, with an emphasis that varies according to the circumstances of the individual country and the availability of data and previous studies.

Econometric and statistical studies of these issues have several methodological shortcomings. In particular, no generally accepted and reliable measures of the intensity of capital controls are available, and many studies simply use dummy variables for their presence or absence. Also, it is often difficult to ascertain whether differences in the variables to be explained are attributable to capital controls or other factors, some of which are also difficult to measure (e.g., the effectiveness of prudential supervision). Moreover, it has proven difficult to distinguish in an economically meaningful way between long-term and short-term capital flows. Short-term loans are often rolled over repeatedly, while long-term instruments can be often sold at short notice in secondary markets. This applies even to foreign direct investment when the investor can borrow against his collateral and short the currency. Derivatives markets, including those for swaps and options, open up many additional av-

venues for changing the effective maturity of investments. The extent to which the distinction between short-term and long-term flows is erased depends primarily on the level of development of financial markets, and in particular on their depth and liquidity. These attributes of financial markets will in turn be affected by government regulation, including capital controls.

Regardless of whether capital controls are effective, their use (or reimposition) may entail some costs. (See Bakker, 1996.) First, restrictions on capital flows, particularly when they are comprehensive or wide-ranging, may interfere with desirable capital and current transactions along with less desirable ones. Second, controls may entail nontrivial administrative costs for effective implementation, particularly when the measures have to be broadened to close potential loopholes for circumvention. Third, there is also the risk that shielding domestic financial markets by controls may postpone necessary adjustments in policies or hamper private-sector adaptation to changing international circumstances. Finally, controls may give rise to negative market perceptions, which in turn can make it costlier and more difficult for the country to access foreign funds.<sup>2</sup>

### Types of Capital Controls

Controls on cross-border capital flows encompass a wide range of diversified, and often country-specific, measures. These restrictions on and impediments to capital movements have in general taken two broad forms: (1) “administrative” or direct controls and (2) “market-based” or indirect controls. In many cases, capital controls to deal with episodes of heavy capital flows have been applied in tandem with other policy measures, rather than in isolation.

Administrative or direct controls usually involve either outright prohibitions on, or an (often discretionary) approval procedure for, cross-border capital transactions (Box 1). Market-based or indirect controls, on the other hand, attempt to discourage particular capital movements by making them more costly. Such controls may take various forms, including explicit or implicit taxation of cross-border financial flows and dual or multiple exchange rate systems. Market-based controls may affect the price, or both the price and the volume, of a given transaction.

<sup>2</sup>Another issue, which is not addressed in this paper, is the effect on other countries and the international economy at large when a country, or group of countries, resorts to capital controls.

### Capital Controls to Limit Short-Term Inflows

Brazil (1993–97), Chile (1991–98), Colombia (1993–98), Malaysia (1994), and Thailand (1995–97) have all used capital controls to limit short-term capital inflows. Short-term capital flows, though typically seen as less risky from the perspective of individual banks and other investors, have often been regarded as speculative and destabilizing at the aggregate level. Long-term flows, by contrast, are usually considered to be more closely related to the real economy and hence more stable and desirable. It is not always straightforward to distinguish between short-term and long-term flows in an economically meaningful way. Figures 1–9 illustrate developments in key economic indicators during these episodes. Part II, Chapter V, provides further details of the country experiences.

### Motivations for Capital Controls on Short-Term Inflows

In all five countries, capital controls to limit short-term inflows were imposed in response to concerns about the macroeconomic implications of the increasing size and volatility of capital inflows, within the broader context of abundant capital flows to emerging economies during the 1990s. Longer-term inflows generally reflected structural factors, notably wide-ranging economic reform (Chile, Colombia, and Malaysia) or the liberalization of external transactions (Brazil, Colombia, and Thailand). Short-term inflows reflected high domestic interest differentials in the context of pegged (Thailand) or heavily managed exchange rate regimes (Brazil, Chile, Colombia, and Malaysia), which had often given markets a false sense of security. The large and persistent inflows complicated the implementation of monetary policy, at times owing to a lack of adequate monetary instruments (Thailand). In most cases, sterilization operations were the first policy response to the inflows. However, such operations typically entailed costs to the central bank owing to differentials between the cost of issuing securities and the return on foreign assets. Furthermore, sterilization operations may have attracted further inflows as they tended to keep interest rates high.

Controls on capital inflows were imposed to reduce reliance on sterilization, and in some cases to postpone other adjustment. These controls were typically accompanied by other policies, including a liberalization of outflow controls (Chile and Colombia), an adjustment or progressive increase in the flexibility of the exchange rate (Chile and Colombia), and a further strengthening of the prudential

### Box I. Types of Capital Controls

Capital controls have generally taken two main forms: direct or administrative controls, and indirect or market-based controls.

Direct or administrative capital controls restrict capital transactions and/or the associated payments and transfers of funds through outright prohibitions, explicit quantitative limits, or an approval procedure (which may be rule-based or discretionary). Administrative controls typically seek to directly affect the volume of the relevant cross-border financial transactions. A common characteristic of such controls is that they impose administrative obligations on the banking system to control flows.

Indirect or market-based controls discourage capital movements and the associated transactions by making them more costly to undertake. Such controls may take various forms, including dual or multiple exchange rate systems, explicit or implicit taxation of cross-border financial flows (e.g., a Tobin tax), and other predominantly price-based measures. Depending on their specific type, market-based controls may affect only the price or both the price and volume of a given transaction.

- In dual (two-tier) or multiple exchange rate systems, different exchange rates apply to different types of transactions. Two-tier foreign exchange markets have typically been established in situations in which the authorities have regarded high short-term interest rates as imposing an unacceptable burden on domestic residents, and have attempted to split the market for domestic currency by either requesting or instructing domestic financial institutions not to lend to those borrowers engaged in speculative activity. Foreign exchange transactions associated with trade flows, foreign direct investment, and usually equity investment are excluded from the restrictions. In essence, the two-tier market attempts to raise the cost to speculators of the domestic credit needed to establish a net short domestic currency position, while allowing nonspeculative domestic credit demand to be satisfied at normal market rates. Two-tier systems can also accommodate excessive inflows and thus prevent an overshooting exchange rate for current account transactions. Such systems attempt to influence both the quantity and the price of capital transactions. Like administrative controls, they need to be enforced by compliance rules and thus imply administration of foreign exchange transactions of residents and domestic currency transactions of nonresidents to separate current and capital transactions.

- Explicit taxation of cross-border flows involves imposition of taxes or levies on external financial transactions, thus limiting their attractiveness, or on income resulting from the holding by residents of foreign financial assets or the holding by nonresidents of domestic financial assets, thereby discouraging such investments by reducing their rate of return or raising their cost. Tax rates can be differentiated to discourage certain transaction types or maturities. Such taxation could be considered a restriction on cross-border activities if it discriminates between domestic and external assets or between nonresidents and residents.
- Indirect taxation of cross-border flows, in the form of non-interest-bearing compulsory reserve/deposit requirements (hereafter referred to as unremunerated reserve requirement (URR)) has been one of the most frequently used market-based controls. Under such schemes, banks and nonbanks dealing on their own account are required to deposit at zero interest with the central bank an amount of domestic or foreign currency equivalent to a proportion of the inflows or net positions in foreign currency. URRs may seek to limit capital outflows by making them more sensitive to domestic rates. For example, when there is downward pressure on the domestic currency, a 100 percent URR imposed on banks would double the interest income forgone by switching from domestic to foreign currency. URRs may also be used to limit capital inflows by reducing their effective return, and they may be differentiated to discourage particular types of transactions.
- Other indirect regulatory controls have the characteristics of both price- and quantity-based measures and involve discrimination between different types of transactions or investors. Though they may influence the volume and nature of capital flows, such regulations may at times be motivated by domestic monetary control considerations or prudential concerns. Such controls include provisions for the net external position of commercial banks, asymmetric open position limits that discriminate between long and short currency positions or between residents and nonresidents, and certain credit rating requirements to borrow abroad. While not a regulatory control in the strict sense, reporting requirements for specific transactions have also been used to monitor and control capital movements (e.g., derivative transactions, non-trade-related transactions with nonresidents).

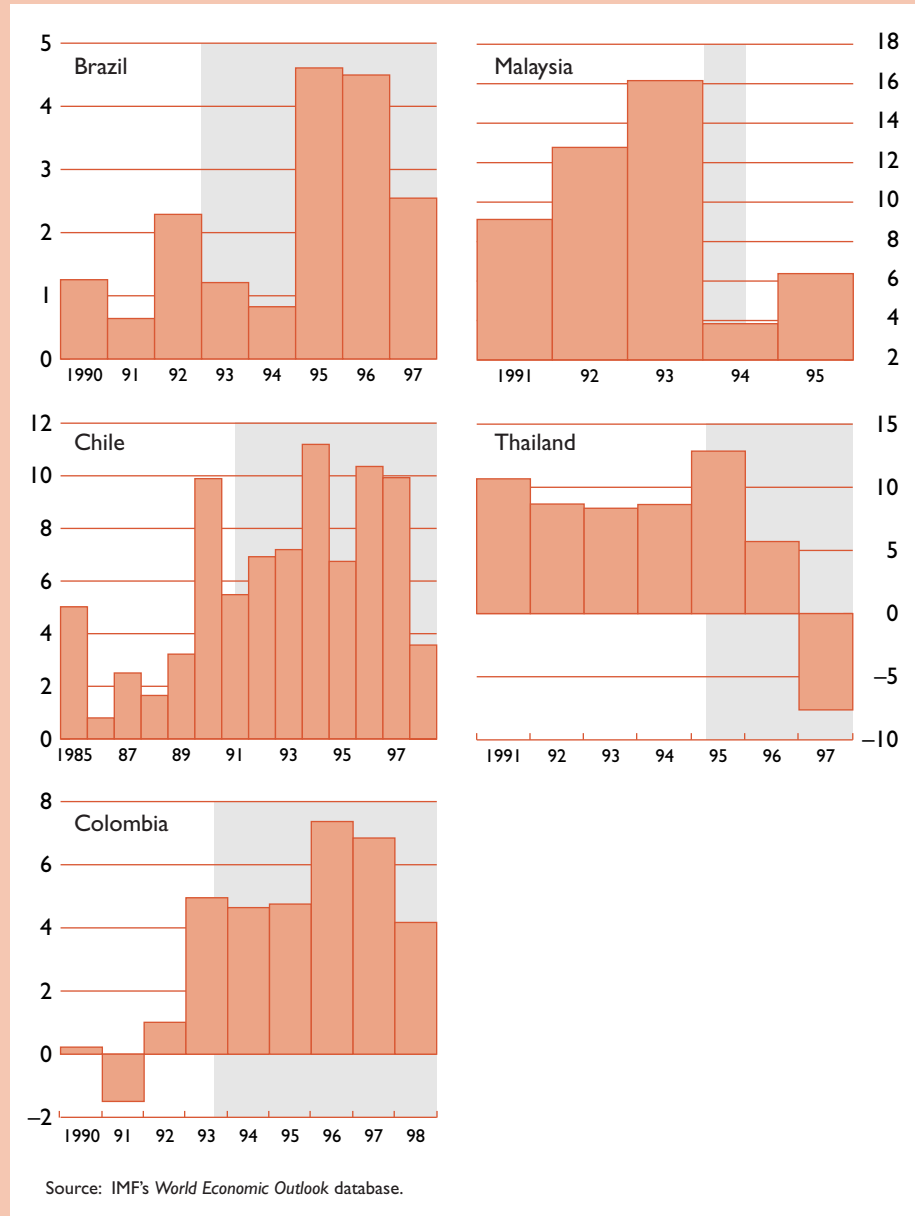
framework for the financial system (Chile, Colombia, and Malaysia). In some countries, fiscal policy remained tight (Chile and Malaysia); in others, further tightening was limited (Brazil and Thailand);

and in some it remained loose, putting even greater pressure on monetary policy (Colombia).

All five countries used inflow controls to preserve or enhance monetary policy autonomy. The controls

**Figure I. Countries with Controls on Short-Term Capital Inflows:  
Net Private Capital Flows**

(In percent of GDP; episodes examined in the paper are shaded)



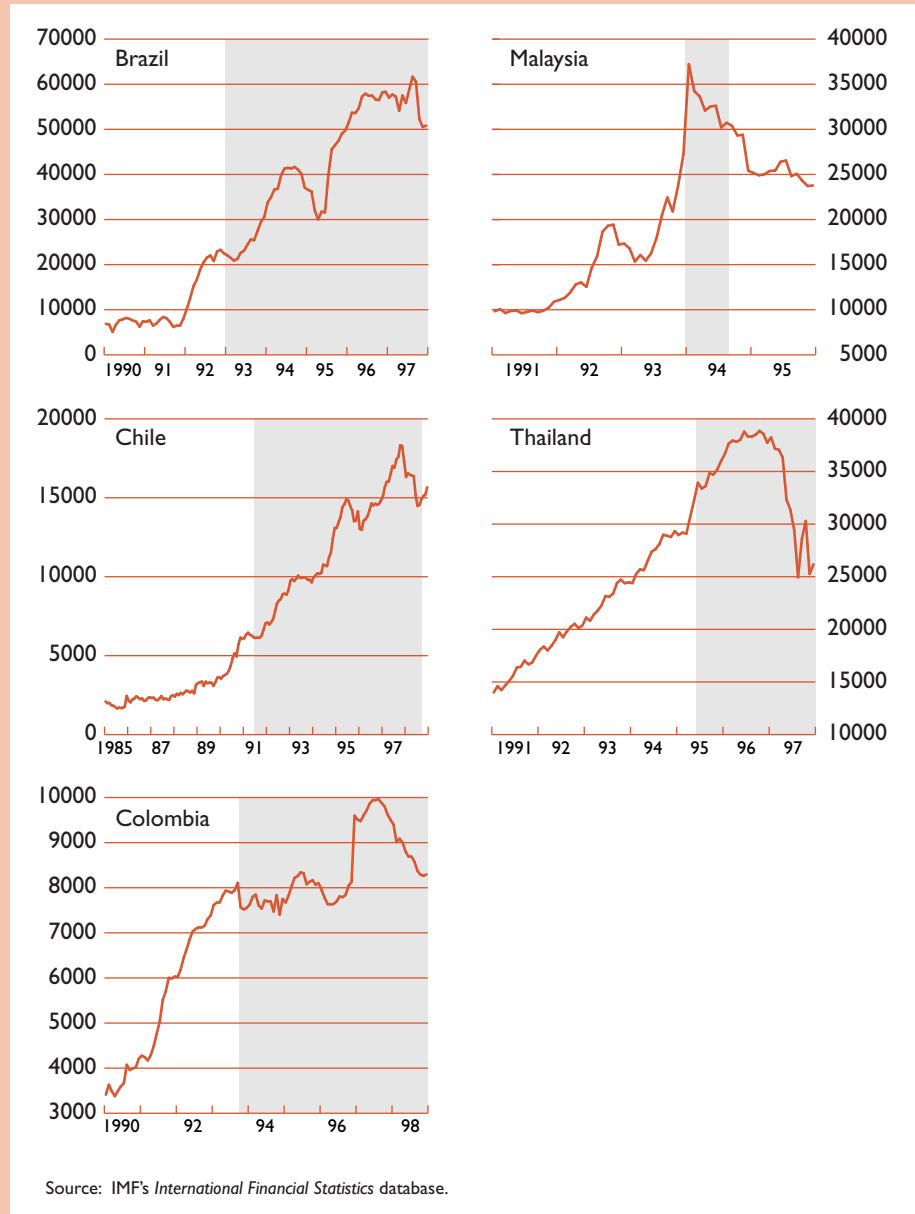
were seen as a means of resolving the classic policy dilemma that results from having more objectives than independent policy instruments. Typically, monetary policy was oriented toward reducing inflation while also attempting to stabilize the exchange rate under relatively free capital movements that

made it difficult to set monetary and exchange rate policies independently.

Prudential concerns also motivated the adoption of controls on capital inflows, though in most cases, macroeconomic considerations appeared to be dominant. The controls were intended to alter the

**Figure 2. Countries with Controls on Short-Term Capital Inflows: Foreign Exchange Reserves**

(In millions of U.S. dollars; episodes examined in the paper are shaded)

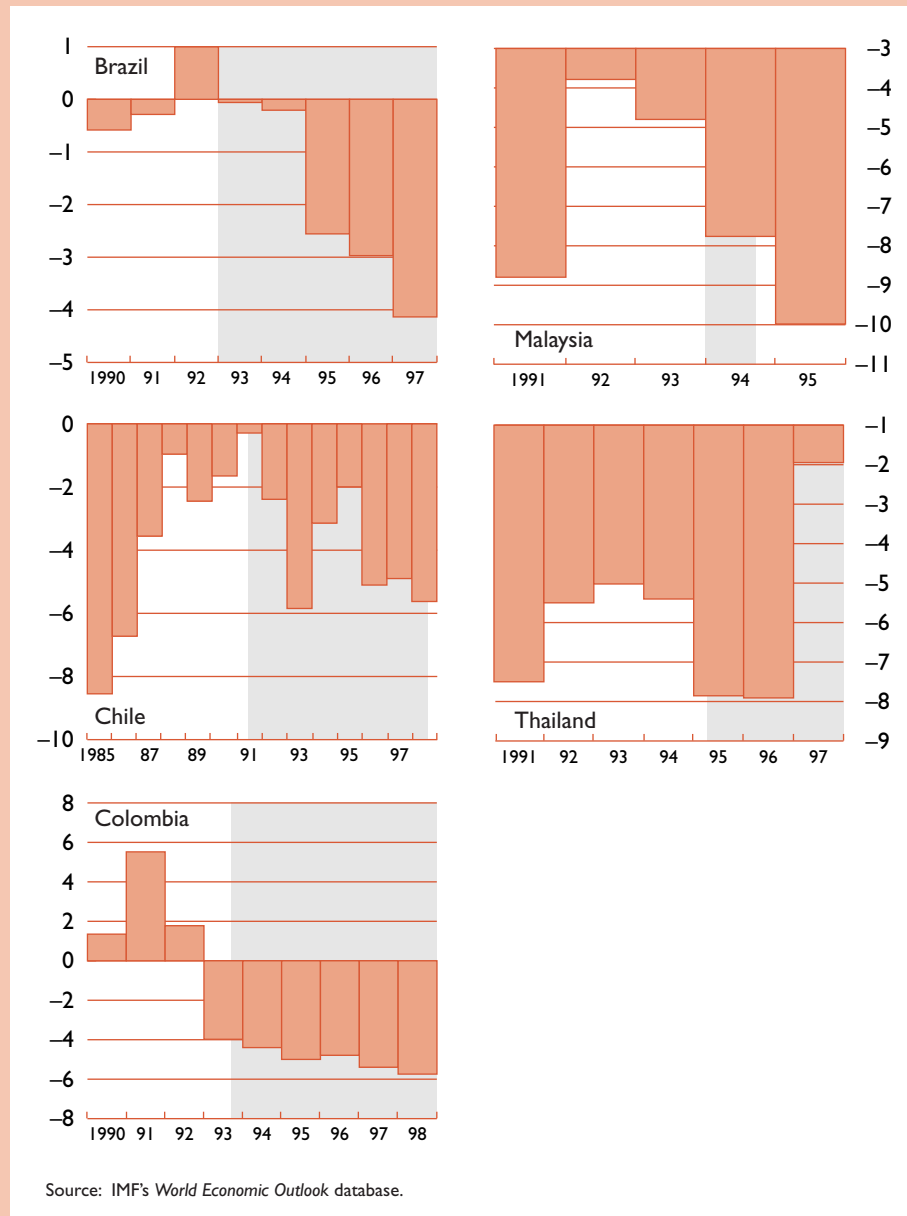


maturity composition of the inflows toward less volatile flows, in addition to reducing their overall volume. Short-term flows were seen to have potential adverse effects on macroeconomic and financial system stability, particularly as the ability of financial institutions to safely intermediate the

inflows was uncertain (Colombia, Malaysia, and Thailand). The case has also been made that these countries faced a “systemic” shock (owing to the abundance of capital flows to emerging economies) that could not be addressed by conventional policies (Chile).

**Figure 3. Countries with Controls on Short-Term Capital Inflows: Current Account Balance**

(In percent of GDP; episodes examined in the paper are shaded)



**Design of the Short-Term Capital Inflow Controls**

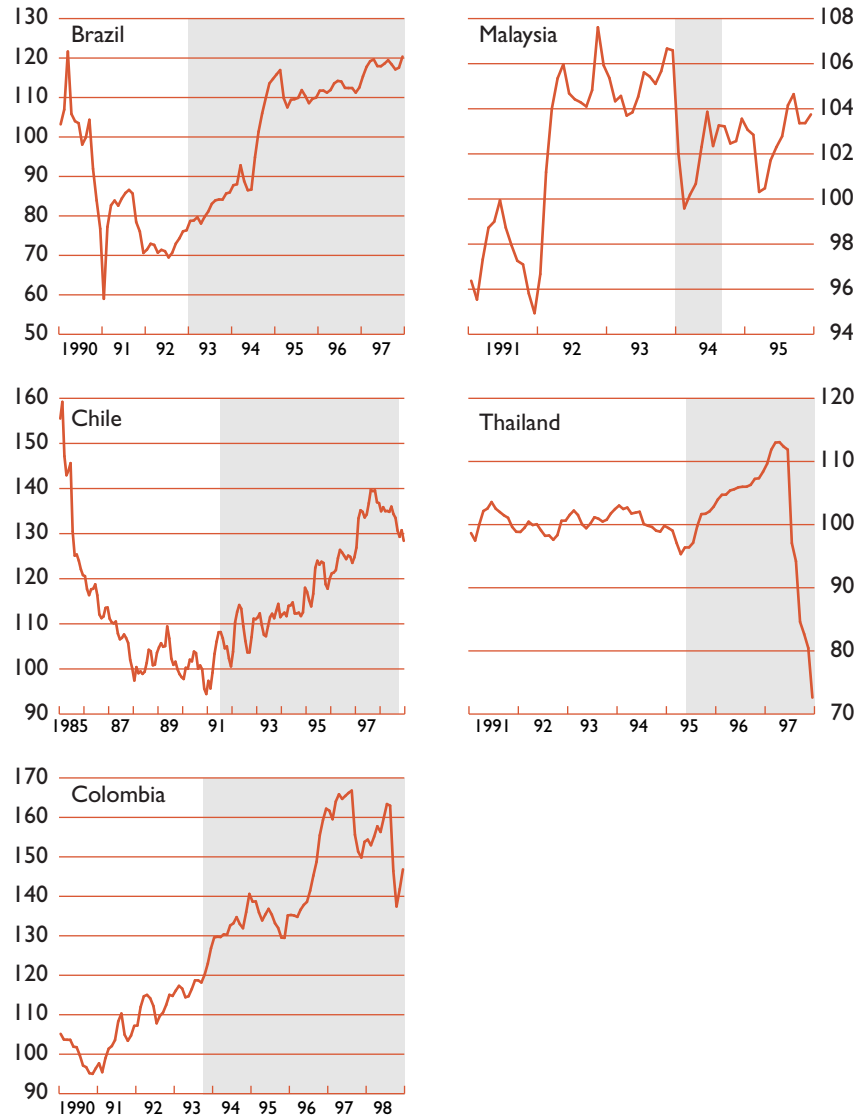
Although in all cases the controls were adopted for broadly similar reasons, the design of the measures varied. All five countries used some form of

market-based controls (mainly in the form of direct or indirect taxation of inflows and other regulatory measures, such as asymmetric open position limits and reporting requirements). In some cases, these controls were supplemented by administrative or direct controls (Brazil, Chile, and Malaysia).



**Figure 4. Countries with Controls on Short-Term Capital Inflows: Real Effective Exchange Rate**

(Index, 1990 = 100; episodes examined in the paper are shaded)



Source: IMF's Information Notice System database. Based on relative CPIs. Increase means an appreciation.

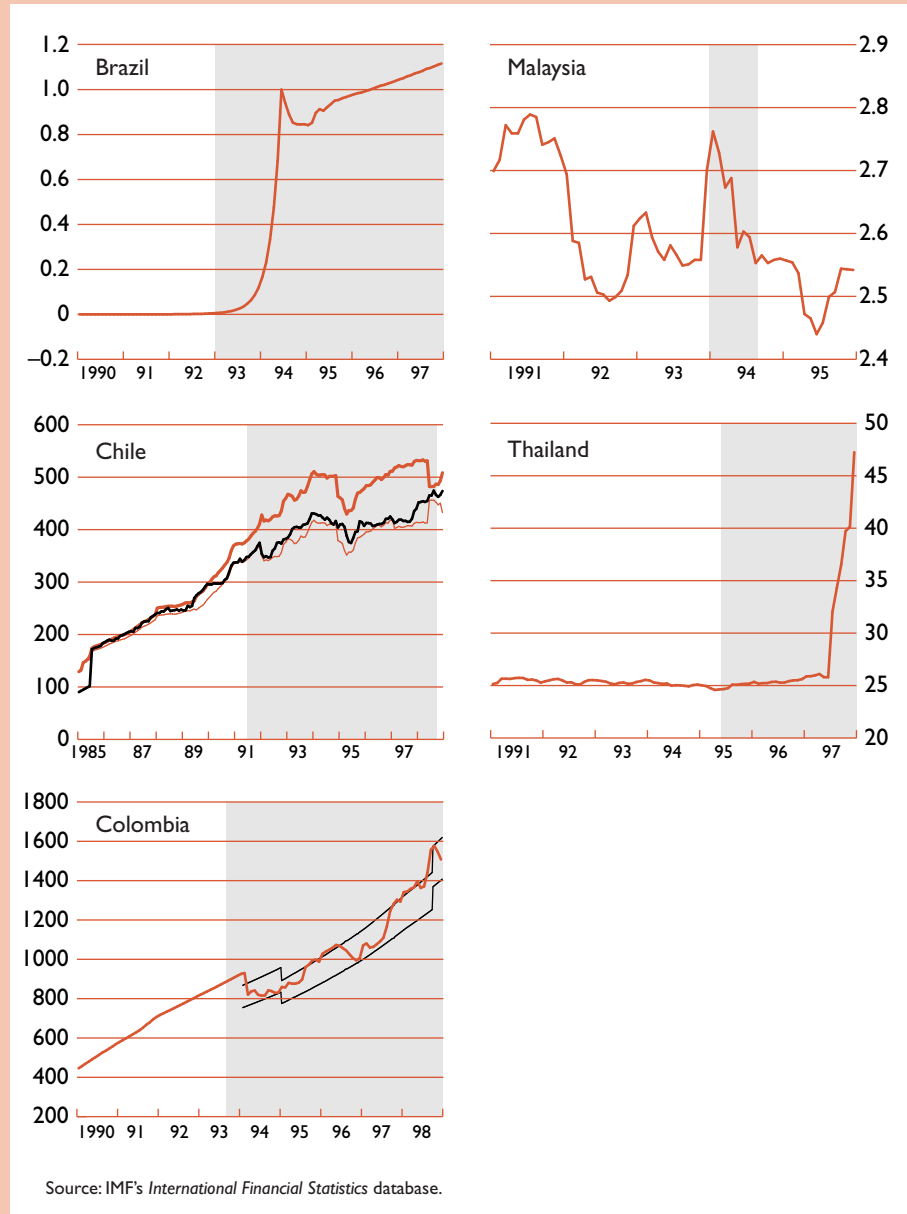
Brazil adopted an explicit tax on capital flows (the “entrance tax” on certain foreign exchange transactions and foreign loans),<sup>3</sup> in combination with a

<sup>3</sup>This tax resembles the “Tobin tax,” which proposes a uniform levy on all foreign exchange transactions to discourage short-term speculative position-taking in foreign currency.

number of administrative controls (outright prohibitions of or minimum maturity requirements on certain types of inflows). The coverage of the measures was extended as the market adopted derivatives strategies based on exempted inflows to circumvent the controls; and the tax rates were successively raised or differentiated by maturity to target short-

**Figure 5. Countries with Controls on Short-Term Capital Inflows: Nominal Exchange Rate**

(In domestic currency units per U.S. dollar; episodes examined in the paper are shaded)



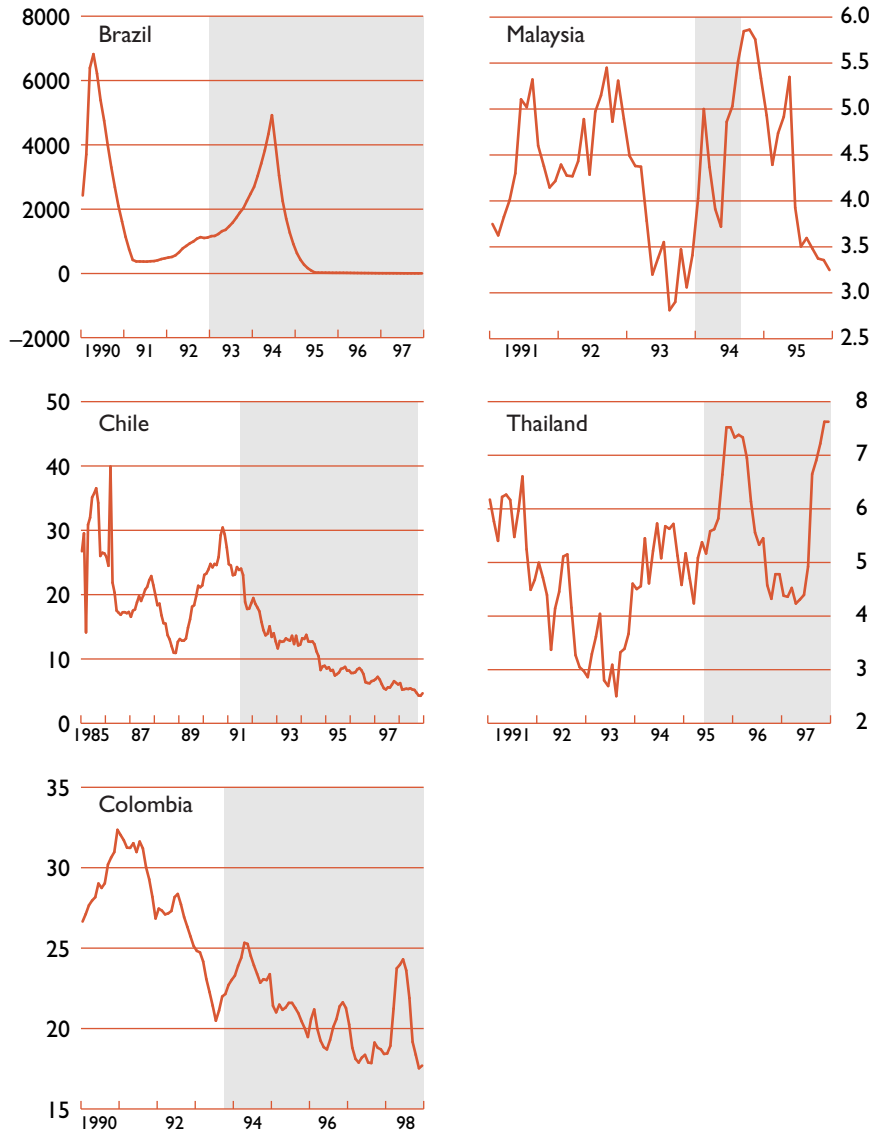
term inflows. The regulations were also adjusted at times of downward pressures on exchange rates, to reduce pressure on the capital account (for example, during the Mexican and Asian crises).

Chile combined market-based controls (indirect taxation of inflows through an unremunerated reserve requirement (URR)) with direct (minimum

stay requirement for direct and portfolio investment) and other regulatory measures (minimum rating requirement for domestic corporations borrowing abroad and extensive reporting requirements on banks for all capital account transactions). The URR was initially imposed on foreign loans (except for trade credits), but subsequently rates were raised and

**Figure 6. Countries with Controls on Short-Term Capital Inflows: Inflation**

(In percent, 12-month rate; episodes examined in the paper are shaded)



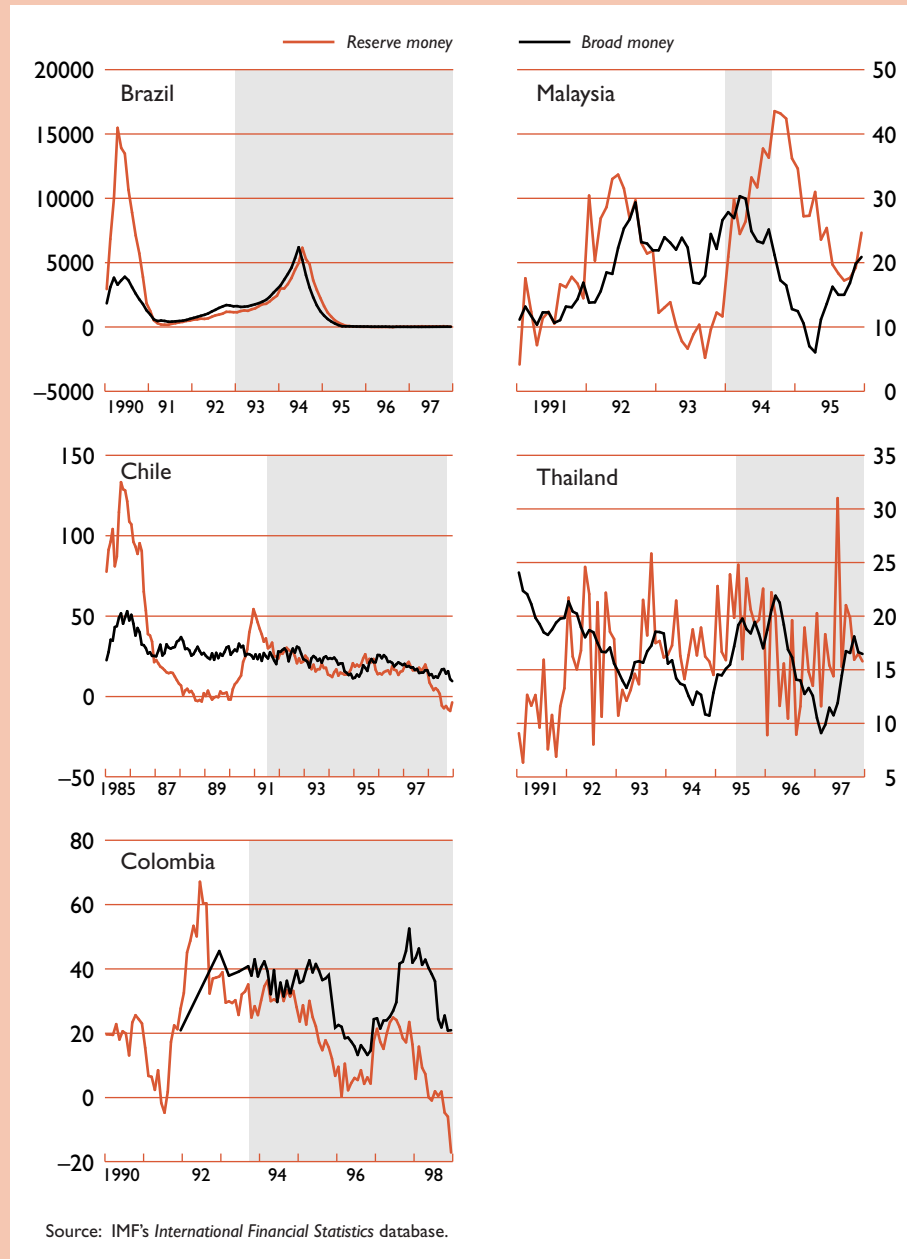
Source: IMF's International Financial Statistics database.

coverage extended to those inflows that became potential channels for short-term inflows, including foreign direct investment of a potentially speculative nature. Similarly, in Colombia, the URR was imposed on external borrowing with a maturity of less than 18 months (including certain trade credits), but

was later adjusted by imposing higher rates for shorter maturities, changing the deposit term, and extending the coverage of inflows subject to the URR. Malaysia adopted a combination of administrative (prohibition of nonresident purchases of money market securities and non-trade-related swap

**Figure 7. Countries with Controls on Short-Term Capital Inflows: Monetary Aggregates**

(In percent, 12-month percentage change; episodes examined in the paper are shaded)

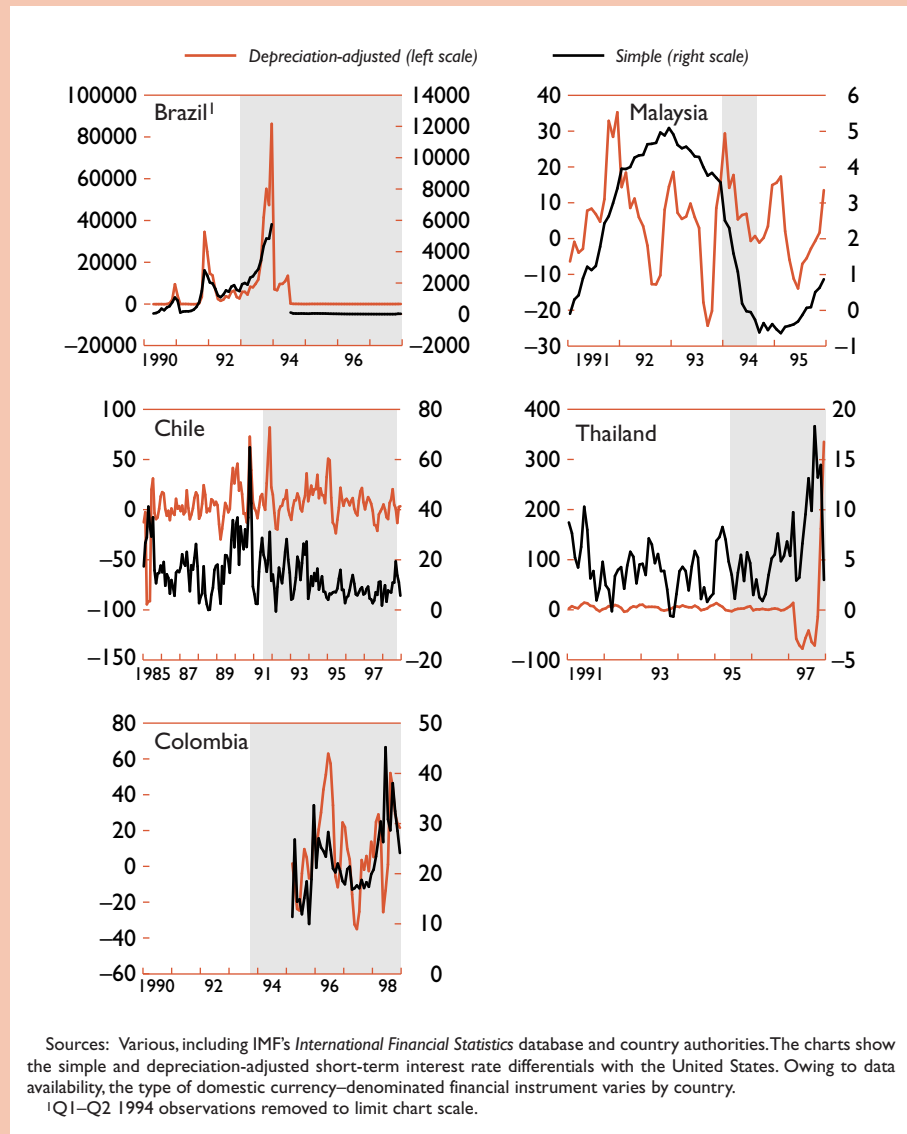


transactions with nonresidents) and regulatory measures (asymmetric limits on banks' external liability positions for nontrade purposes and reserve requirements on ringgit funds of foreign banks). And Thailand adopted a number of indirect, market-based

measures (asymmetric open position limits, detailed information requirements, and reserve requirements on nonresident bank accounts and baht borrowing, finance company promissory notes, and banks' off-shore short-term borrowing).

**Figure 8. Countries with Controls on Short-Term Capital Inflows: Short-Term Interest Rate Differentials**

(In percent; episodes examined in the paper are shaded)



**Effectiveness and Costs of Controls on Short-Term Capital Inflows**

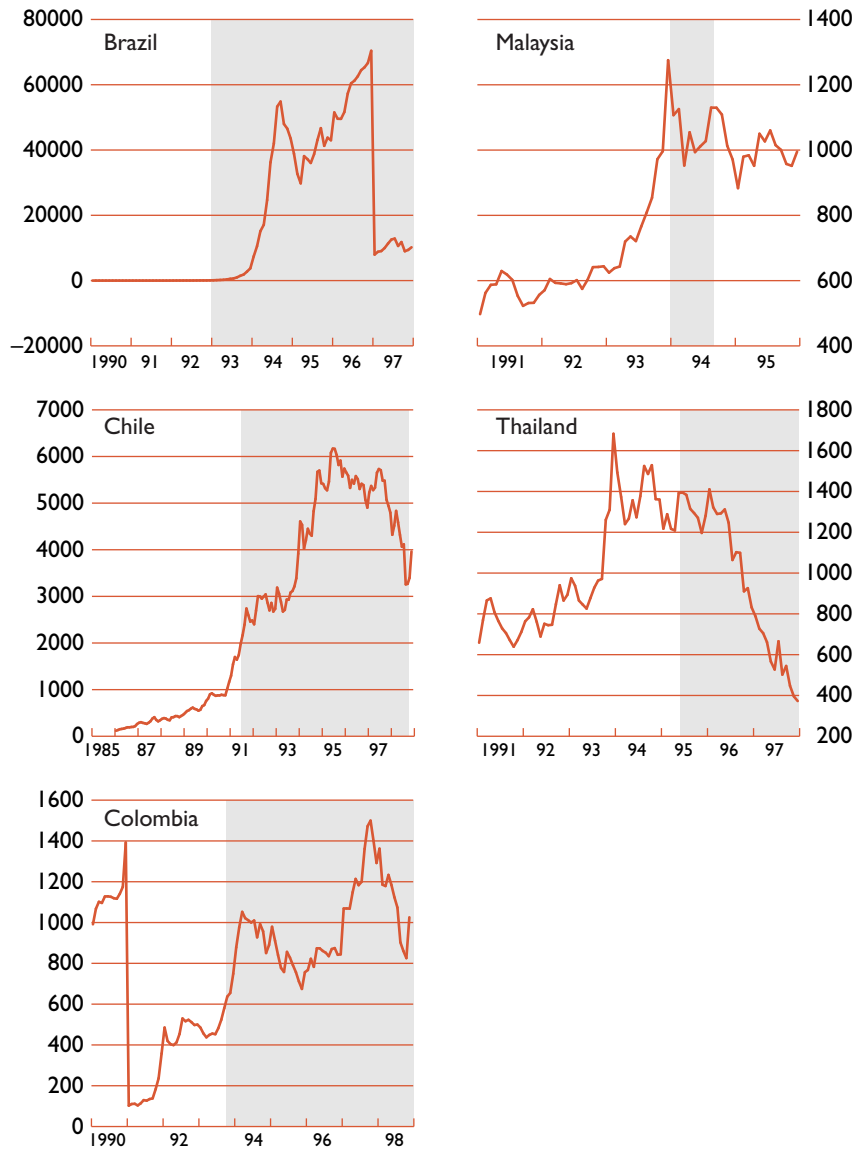
The effectiveness of the controls in achieving their intended objectives was mixed.<sup>4</sup> The principal

<sup>4</sup>This assessment is complicated by large differences in the extent of previous research. The Chilean experience with capital controls has by far received the greatest attention in the economic literature; Part II, Chapter V, and Appendix I review these studies.

macroeconomic motivation for inflow controls was to maintain a suitable wedge between domestic and foreign interest rates while reducing pressures on the exchange rate. Controls seem to have had some effect initially, but in none of the five countries do they appear to have achieved both objectives. Most countries were able to maintain a large interest rate differential, but some had to adjust their exchange rates gradually under sustained upward market pressures (Brazil, Chile, and Colombia). Real exchange rates

**Figure 9. Countries with Controls on Short-Term Capital Inflows:  
Local Stock Exchange Index**

*(Episodes examined in the paper are shaded)*



Source: International Finance Corporation's Emerging Markets database.

appreciated significantly in all five countries (to a lesser extent in Thailand and Malaysia), with more or less deterioration in the external current balances. The controls did not seem to be effective in reducing the total level of net inflows (except in Malaysia and Thailand), but seemed to be at least partly successful

in reducing short-term capital inflows. Sterilization operations also had to continue in some countries to absorb the continuing inflows, with their associated costs to the central bank (Brazil and Chile). In sum, there is some evidence that the inflow controls were partly effective (1) in Malaysia and Thailand, in re-

ducing the level and affecting the maturity of the inflows while curtailing sterilization operations, and (2) in Colombia and possibly in Chile, in maintaining a wedge between domestic and foreign interest rates and affecting somewhat the composition of the inflows.<sup>5</sup> The controls maintained by Brazil appear to have been largely ineffective in achieving their stated objectives (as detailed in Part II, Chapter V).

A number of factors may have played a role in the effectiveness (or lack thereof) of the controls in realizing their intended objectives, though it is not possible to be certain. In Brazil, well-developed and sophisticated financial markets (with active trading of currency futures and other derivatives) seem to have reduced the cost of circumventing the continuously widening coverage of the regulations. Incentives to do so were strong owing to large interest rate differentials and expectations of a stable exchange rate. Similarly, in Chile, the dynamic response of optimizing agents in a sophisticated financial system seems to have reduced the effectiveness of the initial set of regulations and facilitated the exploitation of loopholes in the system. The Chilean authorities in turn were obliged to continuously extend the coverage of the regulations to the extent permitted by legal and political considerations. While strong enforcement capacity through a comprehensive information and disclosure system between the central bank of Chile and the commercial banks may have been instrumental in identifying the loopholes, the exemption of trade credits from the controls and political constraints on closing all potential loopholes seem to have weakened the effectiveness of the controls over time. In Colombia, subjecting certain trade credits to the URR may have eliminated a significant channel for circumvention, but the shift from debt creating inflows to other financing sources (e.g., foreign direct investment) opened another potential channel for circumvention.

Factors other than controls may also have played a role in reducing the volume of inflows or changing their maturity composition in some cases. These included (1) adjustments in monetary policy to narrow interest rate differentials and curtail sterilization operations (Malaysia); (2) a somewhat more flexible exchange rate arrangement to discourage speculative inflows (Chile and Colombia); (3) further strengthening of prudential regulations and supervision (Chile, Colombia, and Malaysia); and (4) a deterioration in investor confidence (Thailand). In addition, potential data problems—as well as an increase in

short-term inflows channeled through exempted inflows and thus not recorded as such (trade credit in Chile and foreign direct investment flows in the case of Colombia)—may potentially hide the magnitude of short-term inflows and give a misleading picture in terms of the effectiveness of the controls.

## Conclusions

The foregoing suggests the following tentative conclusions. First, to be effective, the coverage of the controls needs to be comprehensive, and the controls need to be forcefully implemented. Considerable administrative costs are incurred in continuously extending, amending, and monitoring compliance with the regulations. Even then, controls may lose effectiveness over time as markets exploit the potential loopholes in the system to channel the “undesired” inflows through the exempted ones. The effectiveness of the controls seems to be limited by sophisticated financial markets, which reduce the cost of circumvention relative to the incentives.<sup>6</sup> Second, although capital controls appeared to be effective in some countries, it is difficult to be certain of their role given the problems involved in disentangling the impact of the controls from that of the accompanying policies, which included the strengthening of prudential regulations, greater exchange rate flexibility, and adjustment in monetary policies. Third, inflow controls may not be ideally suited as instruments of prudential policy, as they are often imposed and modified for macroeconomic rather than microeconomic reasons, for example at times of downward pressure on exchange rates (Brazil during the Mexican and Asian crises and Chile and Colombia during the Asian crisis).

The experience of a number of countries (e.g., Brazil and Thailand) also suggests that the use of controls on inflows may not provide lasting protection against reversals in capital flows if they are not accompanied by necessary adjustments in macroeconomic policies and strengthening of the financial system. In these cases (as well as in Colombia), resorting to capital controls may actually have delayed the necessary policy adjustments, making the eventual adjustment more severe. Moreover, in countries

<sup>5</sup>National data support this conclusion. However, the evidence is mixed in the case of Chile, where more detailed examinations of the data have cast some doubt on the proposition that the controls affected the composition of flows. (See also Appendix I.)

<sup>6</sup>The experience here closely parallels earlier episodes in industrialized countries under an adjustable peg regime. For example, Germany during 1968–73 attempted to resist episodes of strong capital inflows by measures including minimum reserve requirements on the growth of liabilities to nonresidents. These measures contributed to disintermediation from the banking system, and obliged the Bundesbank to introduce an ever-broadening range of indirect and quantitative controls. Nonetheless, the controls were largely ineffective in preventing short-term capital inflows and ultimately the appreciation of the currency.

with weak prudential and supervisory frameworks, banking systems took on excessive risks despite the controls (Thailand).

### Capital Outflow Controls During Financial Crises

This section examines the experiences of Malaysia (1998–present), Spain (1992), and Thailand (1997–98) with the use and effectiveness of selective controls on capital outflows, with a focus on the role that the controls may have played in coping with crisis situations. Figures 10–18 illustrate developments in key economic indicators during these episodes, and Part II, Chapter VI, provides further details of the country experiences.

#### Motivations for Imposing Capital Outflow Controls During Financial Crises

The desire of the authorities to limit downward pressure on their currencies has been one of the most frequent motives in imposing controls on capital outflows. Earlier reviews of country experiences indicated that such restrictions have mainly been applied to short-term capital transactions to counter volatile speculative flows that threatened to undermine the stability of the exchange rate and deplete foreign exchange reserves. These restrictions have also served at times as an alternative to the prompt adjustment of economic policies and thus helped the authorities “buy time.” They have also been employed to insulate the real economy from volatility in the international financial markets (see Bakker, 1996, p. 20).

All three countries reimposed controls on capital outflows in the context of significant downward pressure on the exchange rate: Spain during the European currency turmoil of the fall of 1992, and Malaysia and Thailand in the context of the Asian financial crisis of 1997–99. Spain was a member of the European Monetary System’s ERM (exchange rate mechanism), where decisions on exchange rate realignments were subject to agreement with the other members of the system; Thailand was maintaining a pegged exchange rate regime when the controls were imposed; and Malaysia had been following a managed float, before fixing the ringgit vis-à-vis the U.S. dollar along with the imposition of the controls in September 1998. In all three countries, the controls aimed at containing speculation against the currencies and stabilizing the foreign exchange markets against a backdrop of sharply declining official foreign exchange reserves. Room to use interest rates in defense of the exchange rate was limited in all three countries—in Spain, by market concerns

about adverse macroeconomic fundamentals, including a large fiscal burden, and in Malaysia and Thailand, by concerns about the adverse impact of high interest rates on fragile domestic economies and banking systems. In Spain, the peseta had been devalued by 5 percent before the imposition of the controls, but market pressures had not subsided. A further realignment of the exchange rate appeared necessary but could not be carried out immediately given high tensions within the ERM, which also ruled out interest rate increases, while the authorities’ strong commitment to European Monetary Union (EMU) precluded an exit from the ERM.

In all three countries, the controls were imposed in an environment where capital account transactions had already been largely liberalized. Spain’s capital account had been completely liberalized seven months before the reintroduction of the capital controls, while those of the other two countries had been fairly open (mainly on the inflow side in Thailand). Malaysia had liberalized most portfolio outflows, except for corporations with domestic borrowing, and had adopted a liberal approach to portfolio inflows. Malaysia had also liberalized cross-border transactions in ringgit, including for trade-related transactions, and financial transactions with nonresidents; offshore trading of ringgit securities was tolerated. In Thailand, nonresidents were free to obtain baht credit from domestic banks and operate in well-developed spot and forward markets. As a result, an active offshore market had developed for both the ringgit and the baht.

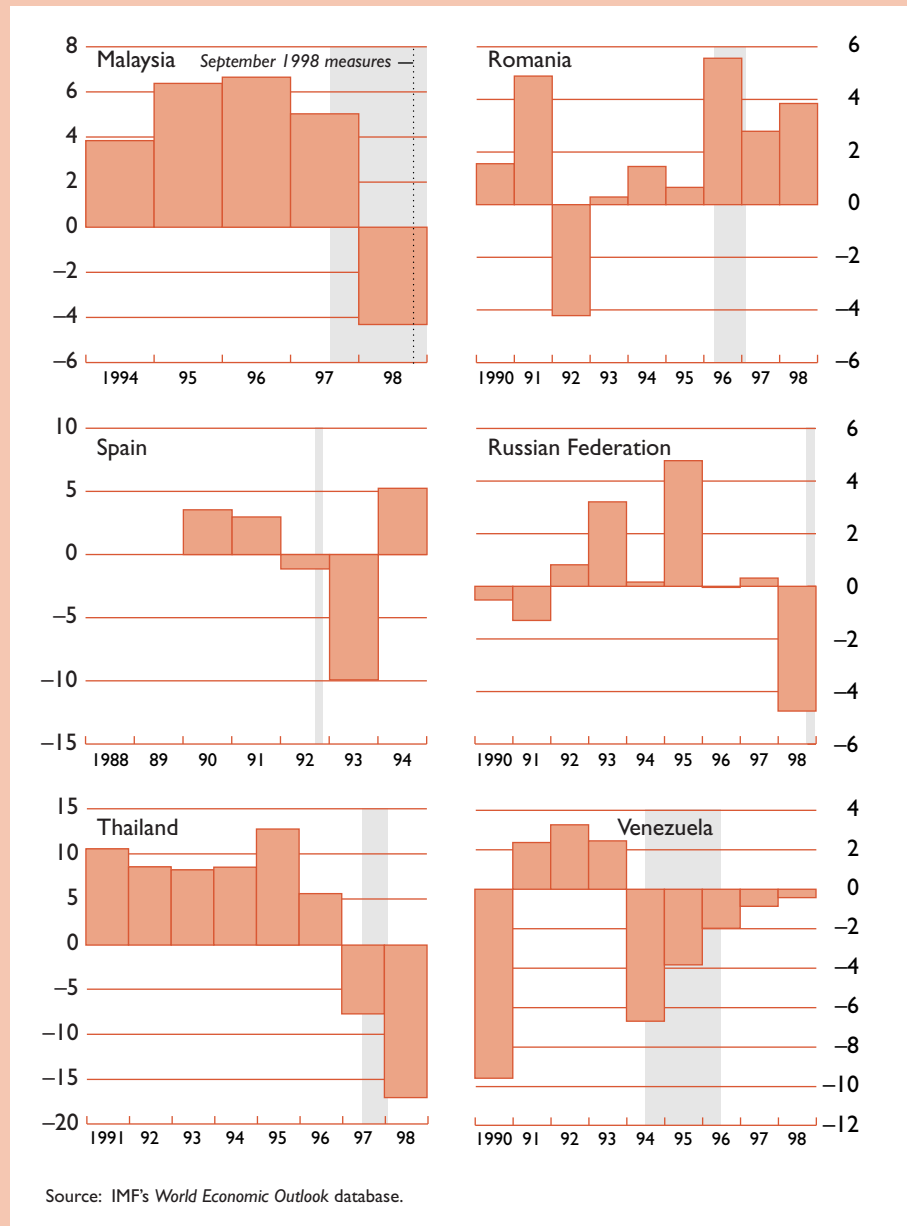
#### Design of Capital Outflow Controls During Financial Crises

While the design of the controls imposed by the three countries varied significantly, in all cases they mainly targeted the activities of nonresidents (identified as “speculators”), by restricting their access to domestic currency funds that could be used to take speculative positions against the domestic currencies. The controls explicitly exempted current international transactions, foreign direct investment flows, and certain portfolio investments. In Spain, the controls took the form of a compulsory, non-interest-bearing 100 percent deposit requirement on domestic banks, to discourage speculation by making it costly for banks to engage in certain transactions with nonresidents. The requirement initially applied to increases in banks’ long foreign currency positions, peseta-denominated deposits and loans to nonresidents, and peseta-denominated liabilities of domestic banks with their branches and subsidiaries. These requirements were subsequently limited to a single deposit requirement on increases in banks’ swap transactions with nonresidents (seen as the



**Figure 10. Countries with Selective Controls on Outflows (left column) and with Extensive Controls (right column): Net Private Capital Flows**

(In percent of GDP; episodes examined in the paper are shaded)

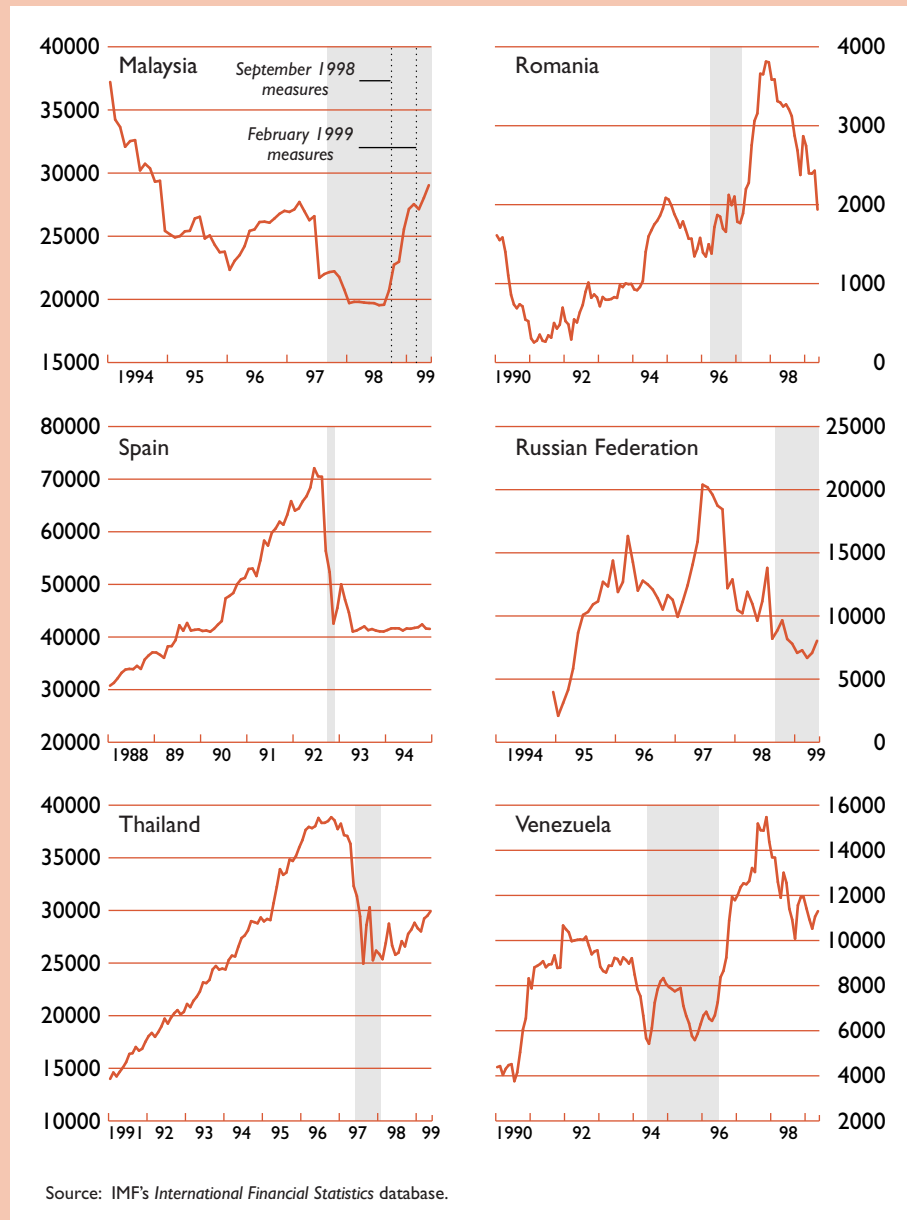


most likely avenue for speculation). In Thailand, a two-tier currency market was created, with the goal of segmenting the onshore market from its offshore counterpart through a mix of direct and market-based measures. In particular, the Thai banks were required to suspend all transactions with nonresi-

dents that could facilitate a buildup of baht positions in the offshore market (involving spot and forward sales, and lending via swaps); the repatriation of proceeds from asset sales in baht were prohibited and their conversion had to be on the basis of onshore exchange rates.

**Figure II. Countries with Selective Controls on Outflows (left column) and with Extensive Controls (right column): Foreign Exchange Reserves**

(In millions of U.S. dollars; episodes examined in the paper are shaded)



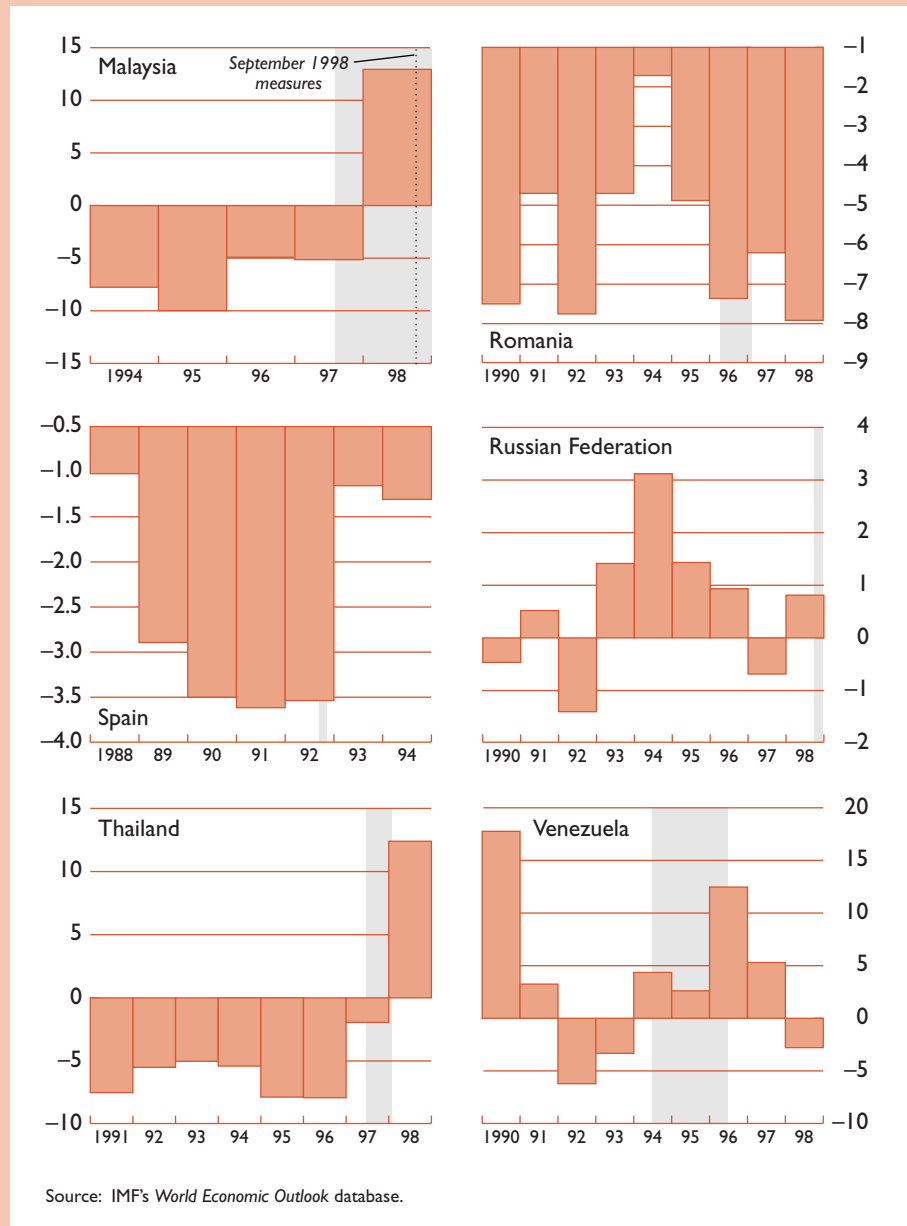
In Malaysia, the controls were more wide-ranging and combined capital controls with exchange controls, but without restricting payments and transfers for current international transactions and foreign direct investment. After an initial (and in effect unsuccessful) attempt in August 1997 to iso-

late the domestic market from the offshore market,<sup>7</sup> a number of direct controls were adopted

<sup>7</sup>The control took the form of swap limits on banks' non-trade-related offer-side swap transactions with nonresidents.

**Figure 12. Countries with Selective Controls on Outflows (left column) and with Extensive Controls (right column): Current Account Balance**

(In percent of GDP; episodes examined in the paper are shaded)

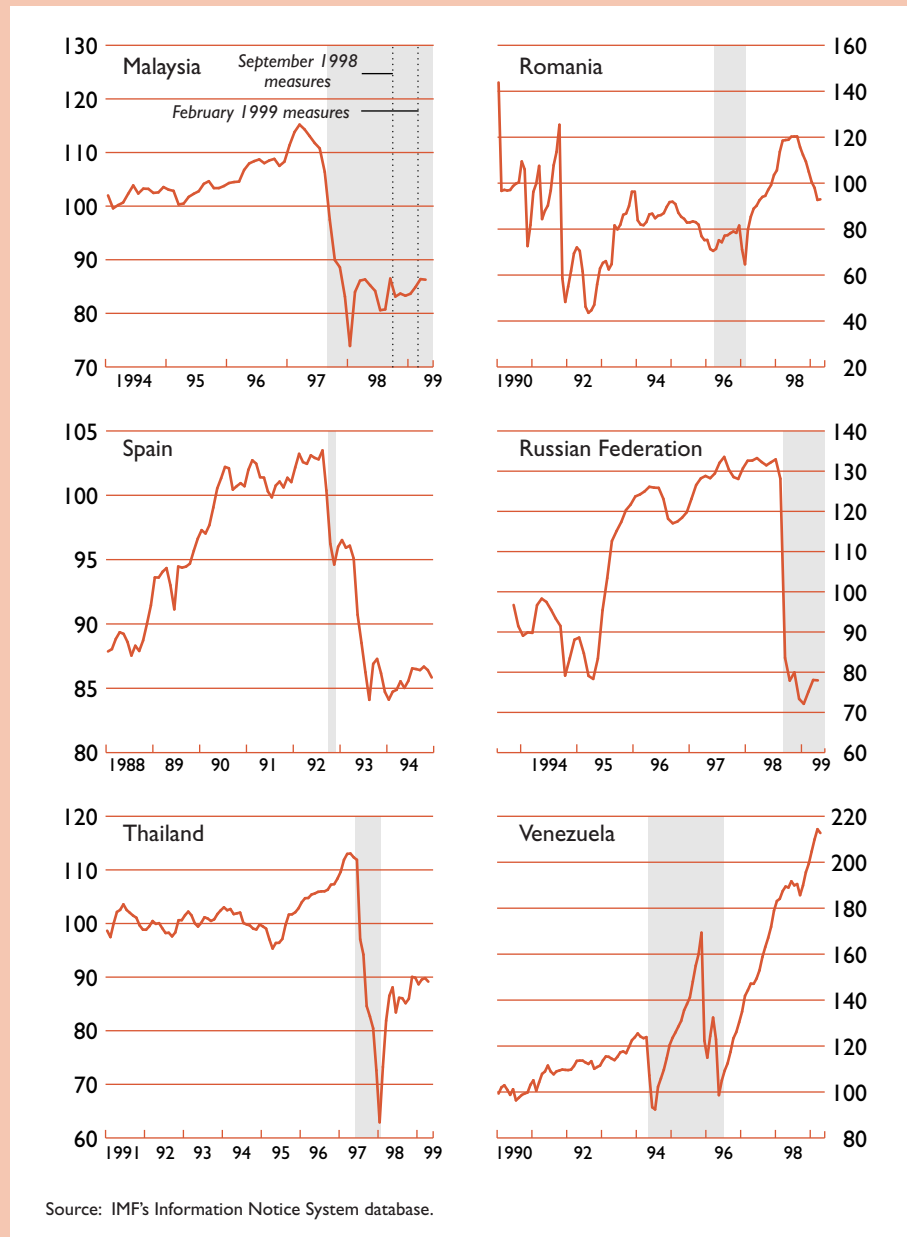


to stabilize the onshore ringgit market by eliminating its offshore counterpart, where speculative pressures on the ringgit had been putting pressure on domestic interest rates. Practically all legal channels for a possible buildup of ringgit funds offshore were eliminated. Offshore ringgit were re-

quired to return onshore, limits were imposed on imports and exports of ringgit currency, the use of ringgit in trade payments and offshore trading of ringgit assets were prohibited, and transfers between external accounts of nonresidents and ringgit credit facilities between residents and nonresidents

**Figure 13. Countries with Selective Controls on Outflows (left column) and with Extensive Controls (right column): Real Effective Exchange Rate**

(Index, 1990 = 100; episodes examined in the paper are shaded)

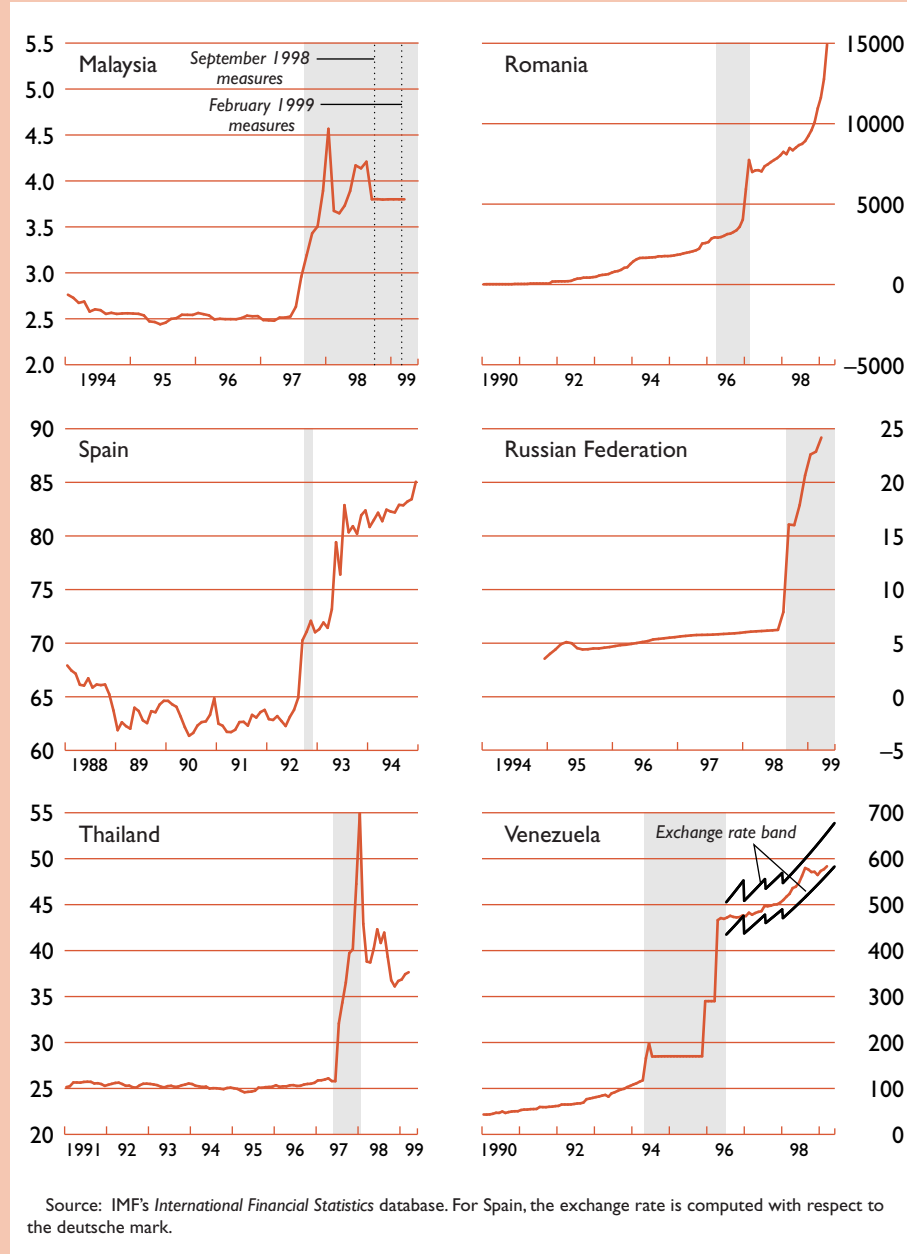


were prohibited. To contain the outflows, transfers of capital by residents were also limited, and repatriation of nonresident portfolio capital was blocked for 12 months. In February 1999, the latter measure was replaced with exit levies on the repa-

triation of portfolio capital that decline with the holding period of the investment. The controls were supported by additional measures to eliminate potential loopholes, including an amendment of the Company Act to limit distribution of dividends

**Figure 14. Countries with Selective Controls on Outflows (left column) and with Extensive Controls (right column): Nominal Exchange Rate**

(In domestic currency units per U.S. dollar; episodes examined in the paper are shaded)



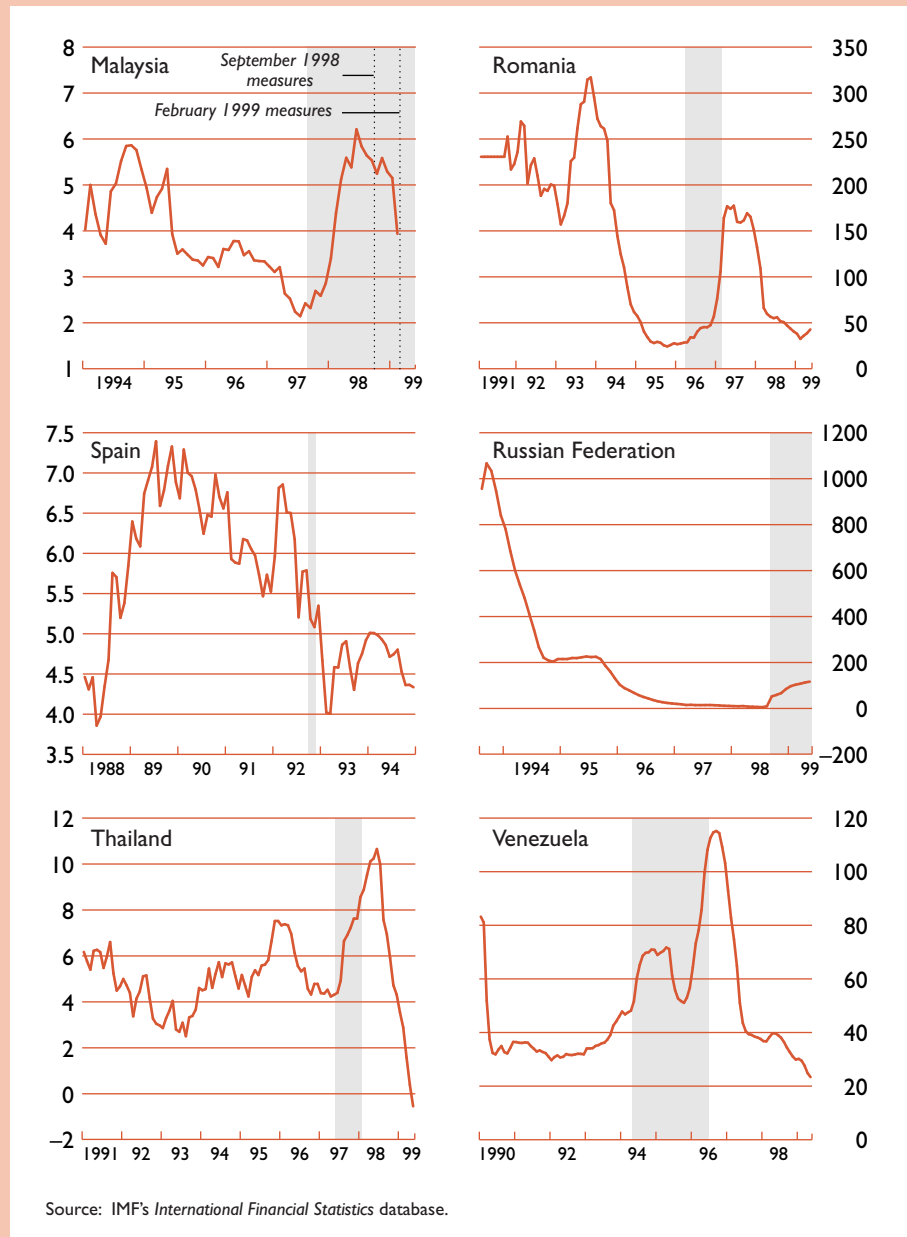
while still complying with Malaysia's obligations under Article VIII of the IMF's Articles of Agreement, and the demonetization of large denominations of ringgit notes to limit the outflow of ringgit funds.

### Effectiveness and Costs of Controls on Capital Outflows During Financial Crises

The effectiveness of the controls in realizing their intended objectives was mixed. In Malaysia, elimi-

**Figure 15. Countries with Selective Controls on Outflows (left column) and with Extensive Controls (right column): Inflation**

(In percent, 12-month rate; episodes examined in the paper are shaded)

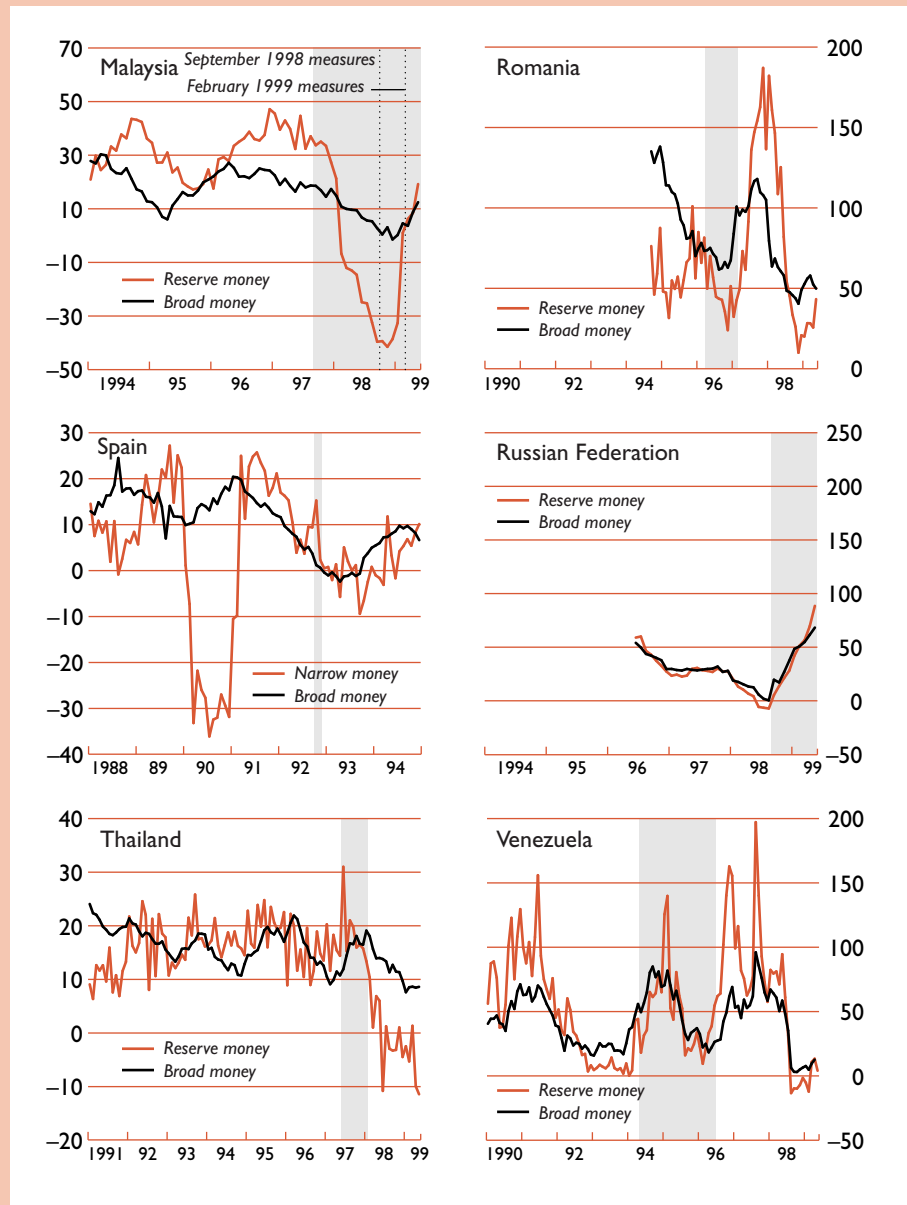


nation of most potential sources of access to ringgit by nonresidents effectively eliminated the offshore ringgit market, and, together with the restrictions on nonresidents' repatriation of portfolio capital and on residents' outward investments, contributed to the

containment of capital outflows. In conjunction with other macroeconomic and financial policies, the controls helped to stabilize the exchange rate. Since the introduction of the controls, there have been no signs of speculative pressures on the exchange rate,

**Figure 16. Countries with Selective Controls on Outflows (left column) and with Extensive Controls (right column): Monetary Aggregates**

(In percent, 12-month percentage change; episodes examined in the paper are shaded)



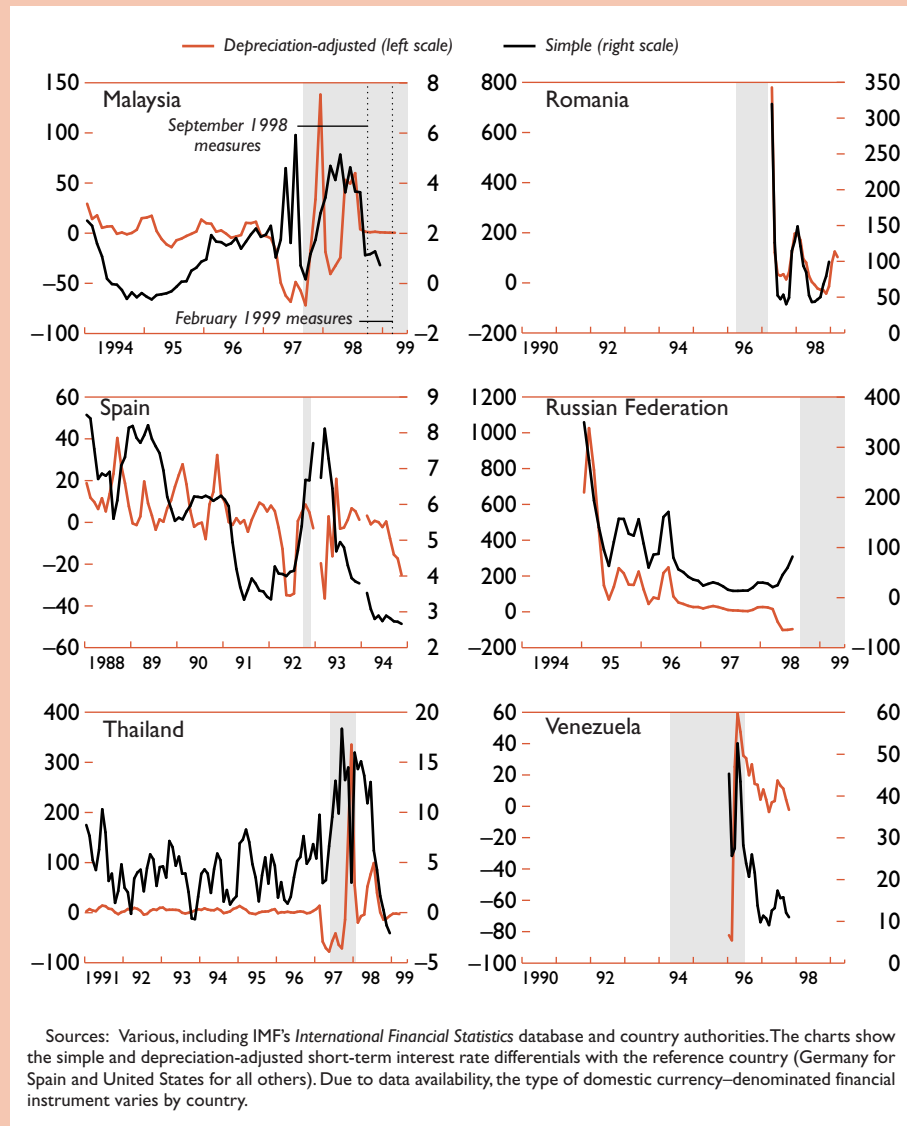
Source: IMF's International Financial Statistics database.

despite the marked relaxation of fiscal and monetary policies to support weak economic activity. Nor have there been signs that a parallel or nondeliverable forward market is emerging; and no significant circumvention efforts have been reported. In Spain,

initially the large deviation of onshore from offshore interest rates and the stabilization of the peseta within its ERM bands suggested that the controls had succeeded in curtailing access to peseta funds by speculators, in segregating the onshore and offshore

**Figure 17. Countries with Selective Controls on Outflows (left column) and with Extensive Controls (right column): Short-Term Interest Rate Differentials**

(In percent; episodes examined in the paper are shaded)



markets, and thus in limiting speculation against the peseta. However, once the scope of controls was reduced and clarified, the differentials narrowed. The peseta again came under pressure in November, which recurred as weekends approached until the peseta was devalued in a negotiated realignment of the ERM in late November 1992, after which the controls were lifted and the authorities moved to raise interest rates. In Thailand, large differentials initially emerged between offshore and onshore in-

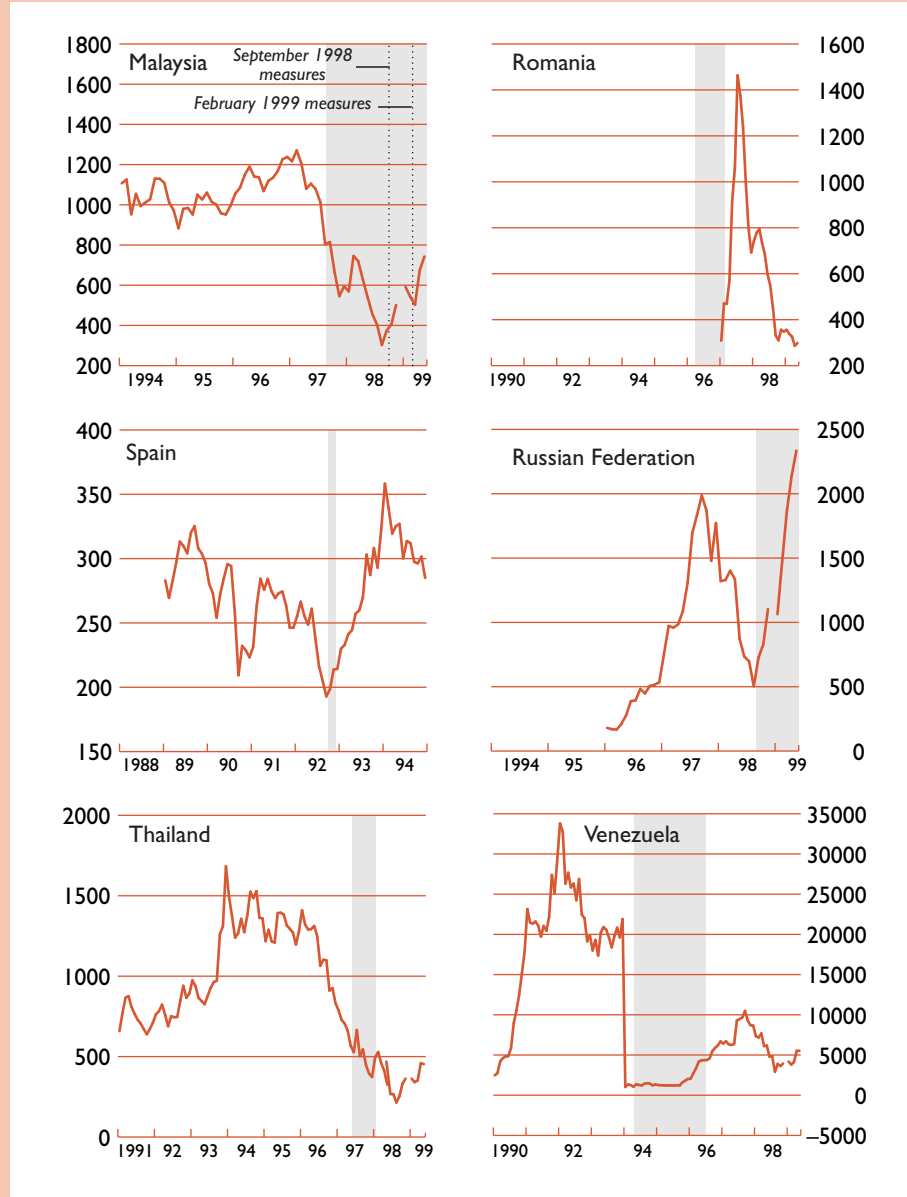
terest rates, trading in the swap market virtually stopped, and speculative attacks temporarily ceased. However, the controls soon began to develop leaks, pressure on the baht resumed, and within two months after the controls were imposed, the authorities floated the baht. Most of the controls were abolished or substantially modified at the end of January 1998; the prohibition of banks' noncommercial transactions with nonresidents was replaced with limits; and the two-tier market was unified.



**Figure 18. Countries with Selective Controls on Outflows (left column) and with Extensive Controls (right column):**

**Local Stock Exchange Index**

*(Episodes examined in the paper are shaded)*



A number of factors may have played a role in the relative effectiveness of the measures. In Spain, the wide-ranging and restrictive measures as first introduced effectively curbed not only speculative activities, but a much broader range of transactions, in-

cluding financial operations associated with the hedging of exchange rate risk by nonresident importers and exporters. Initial uncertainty about the precise scope of the measures may also have dampened activity in the market. The authorities subse-

quently clarified the regulation and narrowed the coverage of the deposit requirement to swap operations, which were identified as the preferred method of speculative financing. Market participants took advantage of additional loopholes, given the expectations of further peseta depreciation. Similarly, the controls seem to have been initially effective in Thailand, reflecting the absence of extensive sales by domestic holders of baht assets and the strict application of the controls by the central bank and commercial banks. The effectiveness of the measures was eventually undermined by the persistently large return differentials in the still active offshore market and expectations of baht depreciation. The controls may have delayed the implementation of a comprehensive structural reform and stabilization package, and thus worsened the crisis.

In Malaysia, the wide-ranging nature of the measures and their strict and effective enforcement by the authorities and the commercial banks seem to have been instrumental in effectively eliminating the offshore ringgit market and thus in contributing to the containment of the speculative pressures. The relatively favorable economic fundamentals of Malaysia at the outset, the authorities' efforts to disseminate information to increase the transparency of the controls, and their efforts to accelerate the strengthening of the financial sector also seem to have played an important role in improving the acceptability of the measures both domestically and internationally. The general return of confidence in the region, the sharp improvement in Malaysia's external balance, and the ex post undervaluation of the ringgit following its peg to the U.S. dollar (while other currencies in the region started to appreciate) also seem to have reduced the incentives for circumvention. It is too early to judge at this stage whether the controls will have long-run adverse effects on investor sentiment.

### Conclusions

In short, the reimposition of controls on capital outflows during episodes of financial crisis seems to have provided only a temporary respite of varying duration to the authorities. The controls gave the Malaysian authorities some breathing space to address the macroeconomic imbalances and implement banking system reforms. In Spain, the measures did not avoid a second realignment of the peseta, though they may have provided some additional time in negotiating the realignment within the ERM. The experiences of the three countries suggest that (1) to be effective, the controls must be comprehensive, strongly enforced, and accompanied by necessary reforms and policy adjustments; (2) controls do not provide lasting protection in the face of sufficient in-

centives for circumvention, in particular attractive return differentials in the offshore markets and strong market expectations of exchange rate depreciation; (3) the ability to control offshore market activity may have been instrumental in containing outflows and stemming speculative pressures; and (4) effective measures risk discouraging legitimate transactions, including foreign direct investment (Malaysia) and trade-related hedging transactions (Spain), and may raise the cost of accessing international capital markets (as indicated by the rise in Malaysia's relative risk premium following the controls). The effectiveness of Malaysia's controls was probably further enhanced by the strengthening of controls over residents' outward investment.

### Extensive Exchange Controls During Financial Crises

This section draws on the experiences of three countries, Romania (1996–97), Russia (1998–present), and Venezuela (1994–96), that resorted to extensive systems of controls on both current and capital transactions in connection with crises. These crises entailed severe downward pressure on exchange rates and a sharp reduction in foreign exchange reserves owing to extensive official foreign exchange intervention. Part II, Chapter VII, provides further details of the country experiences.

### Motivations and Design of Extensive Exchange Controls During Financial Crises

All three countries resorted to extensive exchange controls to stabilize their foreign exchange markets. The controls involved administrative measures to close or significantly restrict access to the foreign exchange market for both current international payments and transfers, and capital movements. Romania and Russia had been maintaining fairly restrictive capital account regimes prior to the imposition of the controls. By contrast, Venezuela's capital account was highly liberalized; and the imposition of controls was thus a sharp reversal of policy. Both Russia and Venezuela had achieved current account convertibility prior to the episodes under consideration.

In Romania, the measures took the form of a suspension of the foreign exchange dealer licenses of all but four state-controlled banks, and limits on the overnight cash position of foreign exchange bureaus, which severely constrained the operation of the foreign exchange market. In Venezuela, the measures consisted of restrictions on the availability of foreign exchange for import and export payments, and for invisible transactions; surrender requirements on export receipts and certain capital inflows; and a prohi-

bition on the repatriation of nonresident investments and all other capital transactions, except for the repayment of external debt.

In Russia, the measures were even more extensive, and combined a reintensification of capital controls (tightening of existing restrictions and reimposition of inflow controls) with restrictions on current international transactions (temporary closing of the interbank foreign exchange market and creation of a dual market), and debt default. The combination of capital controls with debt default may have been motivated by concerns about a massive capital outflow, the accompanying depreciation of the ruble, and a fragile banking system with large unhedged foreign exchange positions. The authorities abandoned the exchange rate band as downward pressures persisted after the adoption of the measures. By contrast, in Venezuela and Romania, the controls were accompanied by a temporary fixing of the exchange rate.

### Effectiveness and Costs of Extensive Exchange Controls During Financial Crises

It is not fully clear whether the controls achieved their intended objectives. In Romania and Venezuela, the controls seem to have contained some of the initial pressures in the foreign exchange market, allowing the authorities to maintain relatively stable exchange rates for some time. Access to foreign exchange was severely constrained and parallel foreign exchange markets emerged. These markets were characterized by substantial premiums over the official rate, reflecting continued macroeconomic imbalances and problems in the financial system. In Russia, the full impact of the control measures remains to be seen, as the economic situation has not yet been durably stabilized. Despite the pervasiveness of the measures, foreign exchange market pressures did not subside until the first quarter of 1999, reserves continued to decline, and outflows increased sharply. This deterioration took place against the background of continued fiscal problems and a further weakening of the banking system. The sharp depreciation of the ruble contributed to a full-scale financial crisis, as banks' large unhedged foreign currency positions, which had been accumulated under the tightly managed exchange rate regime, caused large foreign exchange losses. In none of the three countries did the measures fully succeed in stemming capital outflows.

It seems, however, that in Venezuela the controls increased the degree of monetary policy autonomy in the context of a fixed exchange rate system. The lower interest rates associated with the controls may have enabled the government to reduce the immediate cost of the banking crisis and improve its fiscal balance, possibly at the expense of higher external

debt service and more limited access to international financial markets. In this regard, it is noteworthy that Venezuela's share in total foreign direct investment in Latin America fell while the controls were in effect, and increased when they were lifted. However, these developments may also reflect foreign investors' views on the banking system and the political situation. Similarly, the interest rate differential on Venezuela's Brady bonds fell sharply following the lifting of the controls. Difficulties in accessing foreign capital were also observed in Romania, and foreign direct investment declined relative to other transition economies. More severe problems of this type were observed in Russia, where access to international capital markets halted, foreign direct investment inflows fell sharply, and the yield differential on Russian securities rose significantly, though these developments may have largely reflected the chilling effect of debt default.

### Conclusions

Extensive controls on capital and current international transactions may temporarily relieve pressures on the balance of payments, but they do not provide lasting protection when the fundamental causes of the imbalances remain unaddressed. As with the more targeted controls discussed in the section on capital outflow controls during crises, the controls in Romania, Russia, and Venezuela may have reduced access to foreign capital. Difficulties of this sort seem to have motivated the authorities in Romania and Venezuela to remove the restrictions (with Venezuela opting for a big bang approach), and to address macroeconomic and financial sector imbalances.

### Long-Standing and Extensive Controls and Their Liberalization

While China and India were not been immune to the Asian crisis of 1997–98, they were less affected by it than other countries in the region. The relatively closed capital account regimes of these two countries have been credited with helping to limit vulnerability to financial contagion, though other factors may have played a role as well, including most notably large and relatively closed economies and strong foreign exchange reserves positions. While the Asian countries most affected by the crisis suffered severe recessions and major banking problems, both India and China experienced only a minor slowdown in their strong growth, and the impact of the crisis on their financial systems was limited. China was able to maintain the de facto peg of its currency to the U.S. dollar. India continued to follow a flexible exchange rate policy, which appears to

have further reduced the impact of the crisis. Part II, Chapter VIII, provides further details of these country experiences.

### Initial Circumstances

Given the relatively early stages of financial market development and some structural shortcomings in their financial systems, both countries have followed a gradual and cautious approach to liberalizing their capital accounts. The restrictive capital account regimes in India and China have historically been just one facet of a generally closed and heavily state-controlled economic system. Nevertheless, economic liberalization, including external liberalization, has become an important medium-term goal in both countries. India in particular has made large strides toward reversing several decades of state domination of the economy, though the financial sector is still largely publicly owned and directed lending remains extensive. Capital controls have been quantity based, rather than price based, and have been administratively enforced. In both countries, the capital control regimes in place during the 1990s encouraged longer-term flows (in particular, foreign direct investment) over short-term ones, with the controls oriented toward limiting reliance on short-term and debt-creating flows. As a result, capital controls in both countries have shifted the composition of measured capital inflows toward longer-term flows and more creditworthy borrowers, partly by curtailing access of noncreditworthy domestic borrowers to foreign financing.

### Effectiveness and Costs of Controls

While the capital controls in both China and India are believed to have been effective in limiting measured capital flows, there also seems to be some evidence of evasion and avoidance, for example, through the misinvoicing of trade transactions or large errors and omissions in the balance of payments statistics. In both countries, the extensive restrictions gave rise to significant administrative costs, burdened legitimate transactions, and may have reduced the efficiency of resource allocation.

While the effects on India of the Asian crisis in 1997–98 have not been severe, the country has nonetheless proven vulnerable to external shocks during periods of large domestic imbalances (in 1980 and 1990–91), though this vulnerability may have been lessened by the reorientation of capital controls since 1991 to discourage volatile foreign financing. In China, the authorities have noted that illegitimate current account transactions had facilitated substantial capital flight (about \$11 billion during the first half of 1998), reflecting the outbreak

of the Asian crisis. Concerns about large outflows—driven in part by fears of an imminent devaluation of the renminbi, the falling interest rate differential, and increased evasion—prompted the authorities to intensify the enforcement of the existing controls during the second half of 1998. Administrative screening of capital account transactions was enhanced and documentation and verification requirements for current international transactions were tightened. The authorities considered these measures to be necessary in view of their commitment to a stable exchange rate. In mid-1999, the authorities restricted overseas yuan transactions by prohibiting domestic banks from accepting inward remittances in domestic currency. The measure may have helped to prevent the illegal movement of yuan out of China, and to clamp down on offshore trading of the yuan by Chinese financial institutions. These measures were accompanied by other initiatives to facilitate the efficient operation of exchange controls, and in particular reduce the delays in approving legitimate transactions. The regulatory framework was made more transparent, and new technology was adopted to facilitate screening and enforcement.

### Conclusions

The experiences of China and India seem to suggest that the long-standing and extensive controls on capital transactions may have had some role in reducing the vulnerability of these countries to the effects of the recent regional crisis. In particular, they helped shift the composition of capital inflows toward longer-term flows. However, other factors may have played a role as well in reducing their financial vulnerability. These include, for both countries, a strong external position with ample foreign exchange reserves; larger sizes of the domestic markets; relatively weak trade and financial linkages with the rest of the world compared with the other countries in the region; relatively earlier stages of financial market development, with a lower level of financial intermediation by the banking systems; and a flexible exchange rate policy in the case of India. In both India and China, enforcement of the controls was facilitated by strong administrative capacity.

### Rapid Liberalization of Capital Controls

This section draws on the experiences with capital account liberalization of Argentina (1991), Kenya (1991–95), and Peru (1990–91)—all of which implemented a relatively rapid liberalization of the capital account. Argentina and Peru liberalized all

capital transactions using a big-bang approach, and in Kenya the liberalization was also relatively rapid but spread over five years. Part II, Chapter IX, provides further details on these country experiences.

Earlier reviews of country experiences with the capital account liberalization have suggested that orderly liberalization required not only a proper sequencing and pace of changes in capital account regulations, but also strong and consistent supporting policies. The speed and sequencing of capital account liberalization have generally reflected a country's initial conditions and its broader economic development and restructuring. As a consequence, countries have followed diverse approaches. Big-bang approaches have usually been part of programs intended to signal a strong commitment to reform.

### Initial Circumstances and Motivations for Rapid Liberalization of Capital Controls

In all three countries, the liberalization of the capital account was preceded by a period of severe imbalances in the domestic economy. In the case of Argentina, liberalization took place following a period of hyperinflation, an almost complete loss of policy credibility, and a collapse in demand for money and banking services. These developments prompted the authorities to adopt the Convertibility Plan in 1991, which involved the establishment of a currency board, and the elimination of all restrictions on current and capital account transactions. Similarly, in Peru, liberalization followed a period of hyperinflation, depletion of foreign exchange reserves, and a sharp decline in output and investment in the late 1980s. In Kenya, liberalization followed a period of large fiscal deficits, a deteriorating balance of payments, severe shortages of foreign exchange reserves, high inflation, and a slowdown in economic growth.

Capital account liberalization was intended to signal a strong precommitment to reform and was motivated by a desire to create conditions that would attract foreign financing and achieve sustained growth. In all three countries, the liberalization of the capital account was just one part of a wide-ranging liberalization program that included the deregulation of the financial system (in particular, of interest rate and credit controls), trade liberalization, and privatization of public enterprises. In Argentina and Peru, attempts have also been made to strengthen the supervisory and regulatory frameworks for the financial system, maintain tight monetary and fiscal policies to make further progress in reducing inflation, and enhance labor market flexibility.

### Effects of Rapid Liberalization of Capital Controls

Liberalization of the capital account was followed by an increase in foreign investment in Argentina and Peru, but only to a lesser extent in Kenya, where some initial pickup in capital inflows was reversed sharply from 1992. In Argentina, foreign direct investment and portfolio inflows reached 11 percent of GDP in 1993, compared with less than 1 percent in 1990. Subsequent capital outflows related to the Mexican crisis of 1994–95 were managed without resort to capital controls, with the authorities instead opting to tighten fiscal policy and provide some liquidity assistance to the banking system within the confines of the currency board. Further measures were also taken to strengthen the banking system and lengthen the maturity structure of the public debt.

In Peru, significant capital inflows were associated with an appreciation of the exchange rate and some deterioration in the current account. Current account deficits were financed partly by an increasing share of short-term inflows in total inflows. The increased reliance on short-term financial credit by banks made the financial system somewhat vulnerable, as evidenced by a weakening in the financial condition of several institutions. However, the authorities' efforts to strengthen prudential regulations helped increase the resilience of the banking system. In the period following liberalization, growth resumed and inflation was reduced sharply.

The liberalization of the capital account failed to prevent a sharp economic downturn in Kenya, with the onset of an economic crisis, a significant rise in money supply and inflation, the emergence of external payment arrears, and a sharp depreciation of the currency. The crisis took place against the background of inconsistent economic policies ahead of the election period in the early 1990s, with governance problems in the financial system, weaknesses in prudential supervision, and delays in structural reform.

### Conclusions

The experiences with rapid liberalization of the capital account highlight the importance of sound macroeconomic policies combined with ongoing efforts to strengthen the financial system and implement associated reforms. In the absence of adequate macroeconomic and financial policies, capital account liberalization may increase vulnerability to external and domestic shocks.

### III Prudential Framework for Managing Risk in Cross-Border Capital Flows

One major objective of capital controls is to manage the various risks associated with capital flows.<sup>8</sup> Capital control measures focus on specific types of transactions and attempt to manage and reduce risk by influencing the composition of parties to, and the volume of, such transactions. Chapter II examined a number of measures adopted by various countries, ranging from quantitative restrictions to a Tobin tax–like mechanism. The predominant motivations for the use of capital controls were macroeconomic, mainly to facilitate the pursuit of both monetary policy and exchange rate objectives.

An alternative approach to managing the risks associated with capital flows is not to attempt to control the flows directly, but to limit the vulnerability of the economy to the risks associated with such flows. Prudential policies applied to financial institutions can contribute to this goal by influencing risk-taking on the part of financial institutions and by improving the robustness of the financial system to external shocks. As seen in Chapter II, a number of countries have recognized this and taken steps to strengthen bank supervision to cope with capital flows (for example, Argentina, Chile, and India), but it is only recently that the potentially crucial role of prudential policies in managing the risks associated with capital flows and financial intermediation generally has been widely appreciated. The understanding of how prudential policies may affect macroeconomic performance is still at an early stage, and statistical or econometric analysis of such links is a largely uncharted field. This chapter therefore highlights a number of important issues rather than reaching definitive conclusions.

Financial institutions are major parties to international capital transactions. They accept cross-border and foreign currency deposits, initiate external borrowings, make foreign loans and investments, and

generally intermediate cross-border transactions. It has sometimes been observed that financial institutions are prone to excessive risk-taking. When this happens in connection with cross-border and foreign currency transactions, sudden and large reversals of capital flows or large currency movements can have damaging consequences on the health of individual financial institutions. Moreover, shifts in sentiment, leverage, and liquidity problems can multiply and transmit shocks throughout the financial system, and in extreme cases they result in financial panics. By requiring more effective risk management in individual institutions, prudential policies can help dampen transmission and contagion, and contribute to stemming the development of a major financial crisis. The experience of the Asian economies since 1997 has underscored the role that a weak financial system can have in accentuating a crisis.<sup>9</sup>

The distinction between prudential policies and capital controls is not always clear-cut. A rapid and large buildup of foreign assets and liabilities by financial institutions driven by periods of “irrational exuberance” followed by pessimism and a retrenchment of positions can itself be a source of excess volatility of currency prices and capital flows. If prudential regulation and supervision can make individual institutions manage the risks associated with external assets and liabilities more prudently, then the volatility of capital flows may be reduced or the consequences of volatility limited. A targeted prudential measure that seeks to limit a particular risk, for example, banks’ foreign currency exposure, may influence specific types of capital transactions. Moreover, if banks’ activities dominate capital flows in and out of a country, as is often the case, then constraining the risks that can be taken by banks may effectively limit the overall size of capital flows, as well as their riskiness. Thus, measures that are typically considered as prudential may in fact be used for capital control purposes.

<sup>8</sup>Capital controls in many instances may be regarded by the authorities as serving other important purposes, including strengthening national sovereignty, protecting national security, and achieving specific social objectives.

<sup>9</sup>Baliño and others (1999) reviews how inadequate prudential policies and weak banking systems contributed to and deepened the crisis in countries such as Indonesia, Korea, and Thailand.

Conversely, capital control measures may have prudential effects, for example by restricting banks' short-term borrowing and thus limiting liquidity and other risks to banks associated with such borrowings. As was seen in Chapter II, countries including Chile, China, and India have on occasion used capital control measures to pursue prudential objectives. The effective use of such measures rests on the existence of an adequate administrative capacity.

### Design of Prudential Policies for Managing Risks Associated with Capital Flows

Cross-border capital flows involve the same fundamental categories of risks as do purely domestic transactions, but with added dimensions in each category. Box 2 provides an overview of the principal risks that arise in the context of an open capital account. Many of these relate to the use of foreign exchange, but some also arise from differences in other institutional arrangements.

The basic similarity between the risks of international capital flows and the risks of purely domestic transactions means that they can be addressed within the overall prudential framework by adapting and extending regulations and supervision used in the domestic financial market. Best practice prudential regulations would seek to manage the additional risks inherent in international capital flows by limiting the institution's risk exposure relative to its risk-taking and management capacity. Thus, while prudential regulations do not target capital flows directly, they can influence their volume, composition, and volatility. Such regulations would include enhanced monitoring, disclosure, and reporting; prudential limits (in the form of certain balance sheet ratios); rules for loan classification, asset valuation, provisioning, and income recognition; norms requiring strong internal risk management procedures; and accounting and control systems.

Prudential standards need to give particular attention to banks, given their large (though somewhat diminished) role in the provision of credit, their central position in the payments system, the systemic implications of their high leverage, and the mismatch in the liquidity of their assets and liabilities. Also, capital inflows are often intermediated by the banking system, and their reversal may be associated with a banking crisis if banks are not adequately prepared. Even when financial crises were triggered by events in nonbank financial institutions, the eventual severity and duration of the crisis was largely determined by the ability of the banking system to withstand shocks. The public good aspect of the banking system's services and the potential cost of resolving a

banking crisis provide a further rationale for focusing on banks.

Recent experience in Asia has highlighted how vulnerabilities can increase under a weak prudential regime (Baliño and others, 1999). Capital inflows into the banking sector helped fuel rapid credit expansion, with banks being increasingly exposed to credit and foreign exchange risks and to maturity mismatches in foreign currencies. Banks' foreign currency lending to corporate borrowers that did not have secure foreign exchange revenue streams created major problems once the currencies started to depreciate. More generally, rapid growth of assets also strained banks' capacity to assess risk adequately. Prudential regulation and supervision that might have mitigated these problems had serious deficiencies, including with respect to foreign currency mismatches.<sup>10</sup>

Considerable work has been undertaken in international forums to develop principles for prudential regulation and supervision.<sup>11</sup> Reflecting the heightened interest and concern about international capital flows, prudential standards and procedures are being updated to reflect the risks in bank intermediation of cross-border capital flows. The Basel Committee has proposed revisions to the capital adequacy framework, the development of methodologies for credit risk and interest rate risk management and modeling, banks' interactions with highly leveraged institutions (notably, hedge funds), sound practices for loan accounting and credit risk disclosure, bank transparency and internal control systems, and operational risk management. The Basel Committee has also issued papers on authorization procedures and principles for the supervision of banks' foreign establishments, the information flow between banking supervisory authorities, and the relationship between bank supervisors and external auditors.

Ensuring an adequate capitalization of banks is central to limiting banking system risks, including

<sup>10</sup>In Korea, for example, the crises in the banking and corporate sectors, and the related external payments crisis, were to a large extent rooted in excessive lending of foreign currency to corporate borrowers with inadequate foreign exchange earnings. These exposures were not adequately monitored and controlled, either by the banks themselves or by the supervisory authorities.

<sup>11</sup>A comprehensive review of work in this area was provided in Annex IV to the October 1999 *International Capital Markets* report, "Proposals for Improved Risk Management, Transparency, and Regulatory and Supervisory Reforms." The Basel Committee on Banking Supervision has played a central role in this area. Work is also under way in the context of the Financial Stability Forum, which has established working groups on capital flows, off-shore financial centers, and highly leveraged institutions. The Joint Forum on Financial Conglomerates—which comprises the Basel Committee, the International Organization of Securities Commissions (IOSCO), and the International Association of Insurance Supervisors (IAIS)—has also issued a report on the supervision of financial conglomerates.

**Box 2. Risks in Banks' Cross-Border Transactions**

The opening up of the capital account and cross-border activities of banks introduce additional risks that may increase the magnitude, or complicate the management, of the risks that banks typically face in their domestic activities. The key risks with an open capital account and how to cope with these risks are discussed below.<sup>1</sup>

1. Credit risk is the failure of a counterparty to perform according to a contractual arrangement. It applies not only to loans but also to other on- and off-balance-sheet exposures such as guarantees, acceptances, and security investments. Additional dimensions of credit risk in cross-border transactions include

- transfer risk: when the currency of obligation becomes unavailable to the borrower;
- settlement risk: risk in the settlement of foreign exchange operations that arise because of time zone differences; and
- country risk: risk associated with the economic, social, and political environment of the borrower's country.

2. Market risk is the risk of losses in banks' on- or off-balance-sheet positions arising from movements in market prices that change the market value of an asset or a commitment. This type of risk is inherent in banks' holdings of tradable securities, financial derivatives, open foreign exchange positions, and interest-sensitive bank assets and liabilities.

Foreign exchange risk refers to the risk of losses in on- or off-balance-sheet positions arising from adverse movements in exchange rates. It tends to be most closely identified with cross-border capital flows. Banks are exposed to this risk in acting as market makers in foreign exchange by quoting rates to their customers and by taking unhedged open positions in foreign currencies.

Interest rate risk refers to the exposure of a bank's financial condition to adverse movements in interest rates; it arises as a result of a mismatch (gap) between a bank's interest-sensitive assets and liabilities and affects both the earnings of a bank and the economic value of its assets, liabilities, and off-balance-sheet instruments. Excessive interest rate risk may erode a bank's earnings and capital base. The primary forms of interest rate risk are

- repricing risk, which arises from timing differences in the maturity and repricing of bank assets, liabilities, and off-balance sheet positions;
- yield curve risk, which arises from changes in the slope and shape of the yield curve; and
- basis risk, which arises from imperfect correlation in the adjustment of the rates earned and paid on different instruments with otherwise similar repricing characteristics.

Risk also exists in derivatives transactions. Derivatives are an increasingly common method of taking or hedging risks. The actual cost of replacing a derivative contract at current market prices is one measure of a derivative position's exposure to market risk. Since many of these transactions are registered off-balance-sheet, supervisors need to ensure that banks active in these transactions are adequately measuring, recognizing, and managing the risks involved.

3. Liquidity risk arises from the inability of a bank to accommodate decreases in its liabilities or to fund an increase in its assets at a reasonable cost or liquidate its assets at a reasonable price in a timely fashion. Inadequate liquidity, then, affects profitability and, in extreme cases, can lead to insolvency. There are no internationally agreed prudential standards on bank liquidity, but supervisors require banks to have adequate systems to monitor and control their liquidity needs and establish contingency plans for periods of liquidity stress. Regulation of liquidity risk focuses on the degree of mismatch between maturities of assets and liabilities and dependability of access to funds in future periods.

<sup>1</sup>This draws on Johnston and Ötoker-Robe (1999).

those arising from international capital flows. The central objective of the new draft capital adequacy framework (which would replace the 1988 Accord) is to promote safety and soundness in the international financial system, and it gives even more attention than in the past to the activities of large, internationally active banks (see Basel Committee, 1999a). The proposed framework would maintain a modified version of the existing accord as the standard approach to minimum capital requirements, but also considers the option of providing greater scope for the use of internal credit ratings and portfolio models in establishing minimum capital. The coverage of the framework would also be extended to fully cap-

ture the risks in a banking group, with a view to accurately representing an institution's risk profile. Supervisory evaluation and market discipline through increased disclosure are additional pillars of the capital adequacy regime. The revised framework does not propose to change the minimum capital adequacy ratio of 8 percent. This level is not likely to be sufficient for those institutions that are systematically exposed to greater risk, such as those in emerging markets, where the authorities are already in many cases requiring or encouraging banks to maintain higher capital. The advantage of higher capital adequacy ratios would be to make financial system failures less likely; and when failures do occur, a



higher portion of the cost would be borne by the private sector. The incentives of banks, as leveraged institutions, to “gamble for resurrection” would also decrease. The principal disadvantage of higher minimum capital ratios is that they raise banks’ costs and thus encourage further disintermediation. Differences in minimum capital ratios across countries can also distort competition among banks and influence decisions on where to incorporate, and thereby also possibly affect cross-border capital flows. The new framework proposes to address this issue by giving a larger role to supervisory review in setting capital requirements for individual financial institutions that appropriately reflects risks borne by the institution. Specific proposals affecting banks’ international activities include the following:<sup>12</sup>

- External risk assessments prepared by rating agencies would be used to establish risk weights for sovereign borrowers.<sup>13</sup> Under the 1988 Accord and its amendments, sovereign risk weights were based mainly on whether or not a country is a member of the OECD.<sup>14</sup> The draft proposes that only those countries rated most highly would be eligible for a zero risk weight (a minimum Standard & Poor’s rating of AA–), with the risk weight rising in stages to 150 percent for claims on countries with a rating of B– or below. Furthermore, sovereign risk could be weighted at less than 100 percent only if the country has subscribed to the Fund’s Special Data Dissemination Standard (SDDS).
- Subject to some limitations, external risk assessments would also be used to establish risk weights for exposures to banks, other governmental entities, securities firms, and corporates. Under the existing procedures, all claims on banks incorporated in OECD countries and short-term claims (i.e., up to one year) on banks incorporated in non-OECD countries have received a 20 percent risk weight, while longer-term claims on non-OECD banks were risk-weighted at 100 percent. This standard has been

criticized on the grounds that it may have biased credit flows to emerging markets toward shorter-term maturities.

Although the use of external risk assessments in assigning risk weights aims to better reflect the actual risk of assets than the current uniform and somewhat arbitrary risk weights, there is still considerable debate about the quality of external assessments. Credit ratings have come under close scrutiny since the outbreak of the Asian crisis, when a number of assessments proved to be far too favorable in retrospect.

Consideration is also being given to the need for prudential oversight of highly leveraged institutions (including hedge funds). There are concerns that the operations of highly leveraged institutions have contributed to the volatility of capital flows to emerging markets. Ongoing discussion has focused on whether the activities of highly leveraged institutions should be directly regulated, or whether their creditors, particularly bank creditors, need to be held to tighter prudential standards in their dealings with such institutions. The Basel Committee has emphasized the latter approach:

- Before conducting business with highly leveraged institutions, a bank should establish clear policies governing its involvement with these institutions consistent with its overall credit risk strategy. Sufficiently sophisticated risk management procedures need to be in place to identify and measure the specific risks associated with highly leveraged institutions, particularly the risks associated with derivatives. A preemptive approach rather than one informed mainly by net asset values is essential.
- Overall credit limits need to be established, and collateral and early termination provisions should take into account the ability of highly leveraged institutions to rapidly change trading strategies, risk profile, and leverage.

Sound practices for loan accounting, credit risk disclosure, bank transparency, and related matters will also help to mitigate the risks associated with international capital flows. The Basel Committee recently issued a paper listing 26 sound practices for loan accounting and recognizing credit risk exposure (Basel Committee, 1999b). The suggested practices reflect the judgment that capital adequacy standards lack meaning, and risk management is seriously impaired, if loans are not properly valued and loan losses are not adequately recognized and provisioned for in banks’ balance sheets. Generally good practices in this field are found in a number of advanced economies, but these may not be easily transferable to countries with less developed financial and regulatory infrastructures. In such countries, more mechanical approaches relying on simple quantitative criteria may be more appropriate. Box 3 discusses

<sup>12</sup>Other specific proposals that could influence banks’ international activities include those on risk weights for over-the-counter derivatives and securitized assets.

<sup>13</sup>National supervisory authorities would need to be satisfied that the risk assessment institutions meet minimum standards for transparency, objectivity, independence, credibility, and accuracy. Also, banks would be expected to follow a consistent approach in using such assessments (that is, cherry-picking ratings would not be permitted).

<sup>14</sup>For the purpose of the Accord, OECD countries include full members of the OECD and those countries that have concluded special lending arrangements with the IMF associated with the Fund’s General Arrangements to Borrow, but exclude any country that has rescheduled its sovereign debt during the previous five years.

**Box 3. The U.S. Supervisory Approach to Loan Classification and Provisioning<sup>1</sup>**

In determining the adequacy of loan valuation and loss provisioning, U.S. supervisors evaluate each bank's risk management capacity and internal policies and procedures (internal credit review procedures, loss evaluation techniques, and the adequacy of loan-loss provisions) relative to its individual portfolio composition and risk profile. Evaluations are performed according to general guidelines, which eschew the application of mechanical rules. The same principles and methodology are applied to both domestic and cross-border credit exposures but additional requirements are applied to a bank's internal policies and procedures for managing material cross-border transfer risk.<sup>2</sup>

**Loan Grading**

Supervisory guidelines establish five categories (pass, special mention, and classified credits, consisting of substandard, doubtful, and loss), based on a defined set of key factors, for grading the risk quality of loans.<sup>3</sup> Delinquent (overdue) credits are also distinguished but do not automatically determine the risk category, and performing (nondelinquent) loans with well-defined credit weaknesses may be adversely classified. Additional factors are taken into account in evaluating partially charged off or formally restructured credits, as well as guarantees and off-balance-sheet items.

Source: Board of Governors of the Federal Reserve System (1994), and various supplements updated through May 1999.

<sup>1</sup>As set forth in the "Interagency Policy Statement on the Allowance for Loan and Lease Losses" issued December 21, 1993.

<sup>2</sup>Transfer risk is a subset of country credit risk and refers to the borrower's capacity to obtain the foreign exchange required to service its cross-border debt.

<sup>3</sup>Banks' own loan grading systems, when different, must be reconcilable with the regulatory framework.

**Loan-Loss Provisioning**

Banks are required to establish a loan-loss reserve ("allowance for loan and lease losses" or ALLL), charged against current income. All loans, or portions of loans, recognized (classified) as "loss" must be charged off immediately.<sup>4</sup> For all loans not classified as loss, the ALLL must be increased by (1) losses estimated over the remaining effective lives of loans and leases classified as substandard or doubtful, (2) all losses estimated for the forthcoming 12 months on credits not classified, and (3) estimated losses from transfer risk exposures. A bank's management is responsible for grading the loan portfolio and making the necessary provisions or charge-offs at least quarterly. Estimated losses on individual credits should meet the criteria for accrual of a loss contingency set forth in U.S. generally accepted accounting principles (GAAP). In addition, supervisors evaluate the adequacy of the overall level of the ALLL based on an analysis of the bank's policies, practices, and procedures, its historical credit-loss experience and the reasonableness of the management's overall methodology. Reasonableness is assessed by comparing the actual level of the ALLL against the sum of 50 percent of doubtful and 15 percent of the substandard loans<sup>5</sup> plus estimated losses on other credit exposures (excluding those classified as loss) over the forthcoming 12 months. Shortfalls from this alternative calculation trigger a more intensive review of management's

<sup>4</sup>The value of credit (net of the realization of the net liquidated value of collateral or realization of guarantees) and the ALLL account must both be reduced by the amount of the loss. All applicable unpaid interest accrued during the current year should be charged against current income and unpaid interest accrued in prior years should be charged off to the ALLL.

<sup>5</sup>These weights are based on the industry average loss experience over time for these classifications.

the experience of the United States, with a particular emphasis on the treatment of cross-border loans.

International capital flows also generate additional risks for financial institutions in terms of market risk and liquidity risk. For market risk, the 1996 Amendment to the Capital Accord to incorporate market risks required internationally active banks to hold capital against risks related to exchange rate changes and movements in the price of assets held for trading purposes. For liquidity risk, the Committee's 1992 paper "Framework for Measuring and Managing Liquidity" provides a summary of practices and techniques employed by major international banks in measuring and managing liquidity,

and provides a benchmark for liquidity management by banks. Management of foreign currency liquidity is particularly important because, unlike in domestic currency, there are limits on the ability of central banks to provide assistance to banks to tide over temporary liquidity problems.

**Implementation of Prudential Standards**

To effectively manage the risks from international capital flows, authorities must establish adequate prudential standards in all markets. Recent fi-

analysis, but management's estimates are usually accepted when it has (1) maintained effective systems and controls for identifying, monitoring, and addressing asset-quality problems in a timely manner, (2) reasonably analyzed all significant factors affecting the collectibility of the portfolio, and (3) established an acceptable ALLL evaluation process.

#### ***Credit Exposures Involving Cross-Border Transfer Risk***

Banks are required to report quarterly on individual country exposures that are significant relative to their capital and the country's economic performance and to have in place additional procedures for managing associated transfer risk as well as for grading and provisioning against these exposures. An official Interagency Country Exposure Review Committee (ICERC) evaluates and classifies transfer risk exposures to specific countries based on criteria as set forth in the International Lending Supervision Act of 1983.<sup>6</sup> Banks are informed about classifications of only those loans specific to their portfolios and adequate safeguards are required to prevent such information being divulged to

<sup>6</sup>"Substandard" is applied to countries that (1) are not complying with external obligations; (2) are not in the process of adopting an IMF or other suitable economic adjustment program or adhering to such a program; and (3) the country and its bank creditors have not negotiated a viable rescheduling and are unlikely to do so in the near future. "Value impaired" is applied to a country with protracted arrearages as indicated by more than one of the following factors: (1) it has not fully paid interest for six months; (2) it has not complied, nor are there immediate prospects for complying, with an IMF program; (3) it has not met rescheduling terms for over one year; and (4) prospects for an orderly restoration of debt service in the near future are indefinite. "Loss" applies when the loan is considered uncollectible. This classification would apply, for example, if a country were to repudiate its obligations to banks, the IMF, or other lenders.

unauthorized personnel.<sup>7</sup> An ICERC classification takes precedence over the general classification guidelines only when it is more severe. The ICERC framework also includes a nonclassified category of exposures that supervisors incorporate into their general assessment of a bank's asset quality and adequacy of its reserves and capital. This category includes exposures to countries taking economic adjustment measures, generally as part of an IMF program, to restore debt service, or to countries where recent debt service performance indicates that an earlier classification is no longer warranted. The ICERC generally accords more favorable treatment to performing trade credits and bank credits. Measurement of country exposure is also adjusted for guarantees and collateral and the risk is re-allocated to the country where the guarantor resides, the collateral is held, or the issuer of stocks or bonds used as collateral resides. The International Lending Supervision Act of 1983 requires banks to set up a separate loss reserve "Allocated Transfer Risk Reserves (ATRR)" for loss provisions on transfer risk exposures classified as "value impaired." Required provisions are based on mandated percentages unless the loss is directly charged off. The ATRR must be segregated from the ALLL and cannot be considered as part of capital. Allocations to ATRR are not initially required when new loans are made in the context of an IMF-supported or other appropriate economic adjustment program that generally enhances the debt service capability of the country concerned. However, such allocations could be required subsequently on the basis of performance. U.S. branches of foreign banks are not subject to the regulations establishing the ATRR but are expected to have in place policies for recognizing and writing off losses on transfer risk exposures. U.S. supervisors evaluate their transfer risk and related procedures.

<sup>7</sup>The approach for exposures to transfer risk parallels an approach used for credits to large domestic borrowers, the "Shared National Credit Program."

nancial crises have shown that prudential standards fell well short of best practices in many countries, even when judged against norms that do not take account of the more recent advances in this area. Although conforming to prudential standards is often in the self-interest of banks and other financial institutions, prudential standards are also designed to combat moral hazard and related incentives for excessively risky behavior. When prudential regulations and practices differ markedly across countries, this will create opportunities for regulatory arbitrage, reduce the effectiveness of the regulations, and increase systemic risks. In these circumstances, prudential standards in one country will need to

take account of the adequacy of prudential standards in other countries. As discussed previously, the Basel Committee's draft framework for banks' capital adequacy takes account of countries' implementation of the Core Principles in setting risk weights; but there may be scope for more systematically using information on countries' prudential standards. Prudential regulators and supervisors in both advanced economies and emerging markets might have been able to mitigate the Asian financial crisis—the former by taking adequate steps to discourage financial institutions and other investors from exposing themselves to excessive risks in the emerging markets; the latter by putting in place

sound and transparent prudential standards that would have limited and made clearer the risks facing international investors.

All countries (especially emerging markets that would benefit directly from reduced risk to their own financial systems) have an interest in establishing adequate prudential standards, but countries with large and advanced markets have a particular responsibility to ensure that their investors and financial institutions are heedful of the risks involved in cross-border transactions. The size of institutional portfolios in the major advanced economies is such that modest changes in their asset distribution can have a significant macroeconomic impact on smaller open economies. The magnitude and rapidity of such portfolio adjustment can be substantial, which leads to excessive inflows into smaller countries and to their later reversal. Rapid portfolio shifts have a number of causes, which fall into two major categories: a failure to draw adequate distinctions between different countries in a region, or different assets in a country; and a “run” on a country or region similar to a bank run.<sup>15</sup> Prudential authorities in the large advanced countries will have an interest in limiting these problems to enhance systemic stability. Establishing a regulatory and supervisory framework that obliges investors to more accurately analyze and differentiate countries and assets reduces the first type of shortcoming, generally helps to improve risk management, and may thereby also contribute to limiting the risk of runs.

The establishment and maintenance of prudential standards rest on three pillars: public regulation and supervision, internal practices and controls, and market discipline. Moreover, the prudential supervision and regulation framework must continually adapt to the evolving state of market development and internal governance in individual institutions. Especially in developing countries, one or more of these pillars may be weak. In mature markets, rapid innovations in financial technology pose particular challenges, in that management and supervision cannot sufficiently keep pace with these developments and fail to identify risks in the financial institutions and in the financial system. Large losses incurred by even the most sophisticated institutions in their derivatives and global trading activity point to the seriousness of the risks.

<sup>15</sup>In such a run, a rapid and large-scale sell-off of a country’s assets (and by implication its currency) has adverse effects on the real economy, further depressing asset values. Investors, expecting other investors to sell off, seek to be the first through the exits.

Countries with weak supervisory agencies often, but not always, also suffer from relatively weak skills in the private financial sector, and thus from serious shortcomings in the ability and incentives of financial institutions to adequately manage risk. Directed and connected lending, evergreening of loans, and excessive credit concentration are known to have been the immediate cause of major banking problems in countries, and they may be compounded by weaknesses in the legal system and other governance problems that impede effective monitoring by counterparties and shareholders as well as loan collection efforts. Such financial systems are sometimes said to suffer from a weak “credit culture.” The absence of satisfactory disclosure rules and the inability of the supervisory authorities to enforce them may further weaken the operation of market discipline in such systems. Resolution of these problems is usually not quick, and it must be viewed as part of the overall process of long-term economic development.

### Effectiveness of Prudential Measures in Limiting Risks Associated with Capital Flows and the Role of Capital Controls

Prudential policies could contribute importantly to reducing the risks associated with international capital flows, by strengthening the ability of the financial system to withstand volatile market conditions. They may also be useful in reducing the volatility of flows involving financial institutions, which may actually be a principal element of destabilizing capital flows. As discussed in Chapter II, countries that have made substantial progress in this field—for example, Argentina and Chile—have been quite successful in containing the risks from international capital flows.<sup>16</sup> On the other hand, a number of the most sophisticated financial institutions have exposed themselves to excessive risks in their cross-border transactions, which underscores the need to adapt prudential policies to innovation in the marketplace. Shortcomings in internal risk management proce-

<sup>16</sup>Chile’s prudential policies are discussed in Appendix I. Argentina’s financial sector reforms are discussed in detail in various issues of the IMF Staff Country Reports on Argentina. It is important to note that efforts to improve prudential policies in Argentina have been ongoing, and additional elements of best practice have been implemented almost continuously. In 1996–99, for example, minimum capital requirements were tightened through the introduction of more stringent criteria for calculating risk-weighted assets and by making minimum capital requirements a function of the degree of maturity mismatch between banks’ assets and liabilities.

dures and the failure of supervisors to detect and correct these problems were partly at fault. There may also have been an element of moral hazard in the actions of some financial institutions, brought on by expectations of a bailout. An important potential benefit of improved prudential standards and practices is that supervisors can more easily recognize and prevent financial institutions from engaging in behavior that may in the end necessitate a bailout by the public sector.

While prudential policies are intended to promote soundness, it must be recognized that prudential standards, if not carefully designed and applied, may have unintended and undesirable consequences by providing distorted incentives that result in excessive risk-taking in specific areas, as well as facilitating contagion. Notably, risk-weighting schemes in capital adequacy regulations that do not adequately reflect the riskiness of different borrowers could encourage banks to take on greater than warranted exposure to high-risk borrowers. Similarly, when investments made by institutional investors are required to carry a minimum credit rating, large amounts of capital may be pulled out from a country whose credit rating has been downgraded, thus generating a self-fulfilling downturn in that country. Sophisticated, statistically based risk management techniques, if used to maximize trading profits by exploiting correlations between markets without good judgment as to the limitation of such correlations, may prove to be quite vulnerable in periods of stress when historical relationships between markets break down. In such cases, a rush to close down loss-making positions may further accentuate market volatility.

Prudential policies must also strike an appropriate balance between reducing the threat of excessive risk-taking and constraining the freedom of institutions to take the normal risks inherent in financial intermediation. In this connection, care must be taken so that regulations are not oriented toward controlling capital flows at the expense of weakening the role of prudential policies in maintaining the safety and soundness of financial institutions. Although cross-border transactions often entail added dimensions of risk (such as foreign exchange risk), this does not necessarily mean that these transactions or assets are inherently riskier than domestic assets. Nor, for that matter, do the risks related to external transactions and assets usually comprise a major part of risks run by institutions. Indeed, prudential regulations based excessively on the foreign-domestic distinction will not be effective in addressing financial risks.

Although prudential measures and improved risk management at individual institutions can help to limit the risks associated with international capital

flows, they will not be able to discourage all unsustainable flows. Prudential measures cannot be so strict as to kill off risk-taking activity altogether, and carefully managed risk-taking strategies could unravel under unexpected shocks. Sentiments can also override the best prudential measures. Moreover, prudential measures target financial intermediaries that manage other people's money, and are not intended to regulate the portfolio decisions of individuals and nonfinancial corporations that invest their own funds.<sup>17</sup> For example, cross-border portfolio investment may lead to a speculative asset price bubble, just as a bubble may arise in domestic financial markets. The collapse of a bubble can have serious macroeconomic consequences, partly because declining asset prices affect wealth and private consumption. Prudential regulations may help to reduce the effects of an asset price deflation on financial institutions, thereby mitigating its consequences for real activity, but they may not be able to prevent such an event from occurring.

When prudential standards and practices are weak, and possibly when institutions that are outside the scope of prudential policies (such as nonfinancial firms) are an issue, other measures, including capital controls, may prove useful in managing the specific risks associated with international capital flows.<sup>18</sup> As discussed in Chapter II, capital controls differ in how effectively they perform a prudential function (when they are used for this purpose); and in how severely they distort resource allocation in financial and other markets. Capital controls also differ in how difficult they are to administer and how effectively they can be enforced. As with all types of economic regulation, including prudential regulation, unintended side effects may arise, and individual controls must be judged not in isolation but only in the context of a country's overall regulatory and institutional framework.

The design of a well-functioning system of capital controls to serve a prudential function is thus a complex task. Outright prohibitions of capital transactions may be easiest to administer and enforce, but only when controls are fairly comprehensive. If current payments and some capital transactions have been liberalized, such controls may be circumvented, for example by disguising controlled trans-

<sup>17</sup>Corporate governance and monitoring by creditors are expected to provide oversight, but the basic presumption would be that economic agents must be allowed to invest their *own* money as they see fit.

<sup>18</sup>Some countries with weak domestic prudential institutions have limited their resort to capital controls by encouraging foreign bank ownership, with supervision by the banks' home supervisors.

actions as uncontrolled ones; or by duplicating the payoffs of a restricted contract with an unrestricted one. The principal drawback of a blanket prohibition is that it will preclude sound as well as risky transactions, and may therefore be highly distortionary. Introducing elements of administrative discretion—such as a licensing system for capital flows—can alleviate this problem somewhat but is administratively more costly and may raise governance issues. Price-based controls modeled on prudential regulations, such as the unremunerated reserve requirement on inflows used by Chile, are less distortionary. However, such controls are generally more difficult to administer and enforce than outright prohibitions, and possibly than quantitative restrictions. Loopholes in their coverage will need to be identified and closed as they are progressively exploited by arbitrageurs. The ultimate complexity and demands on a country's administrative capacity of such controls may thus be similar to that of prudential regulation and supervision. They may nonetheless prove useful in countries where other pillars of a functioning prudential system (market discipline, transparency and internal controls in financial institutions) are weak.

## Conclusions

The use of prudential policies in coping with the risks associated with capital flows needs to be analyzed further, in terms of both understanding how they best function and studying actual implementation by countries. Despite the relatively favorable experiences of a number of countries that have strengthened their supervisory regimes, country experiences still offer only limited evidence on how well prudential measures can limit the risks associated with capital flows, and additional work is needed on this point. Nonetheless, the discussion above highlights the need for a careful design of policy, the risks of targeting capital flows at the expense of the safety and soundness of institutions, and the importance of implementation capacity—a particularly demanding challenge for emerging markets.

The use of capital controls in pursuing prudential objectives is more controversial. The positive role that controls may potentially play in an environment of weak supervisory systems is tempered by the difficulty of administering a sophisticated system of controls and the distortionary effects that simpler direct controls may have.

## IV Conclusions

This review of the use and liberalization of capital controls in 14 countries cannot be considered exhaustive. It illustrates the difficulty of precisely assessing the effects of capital controls, which may have benefits as well as costs. The analysis of the relationship between prudential policies and capital controls is a first step, and considerable further work would be needed to fully clarify their respective roles, interdependencies, and limitations. This paper nonetheless sheds some light on arguments previously advanced in the literature, on some of the operational issues related to the design of capital controls, and on the relationship between capital controls and prudential policies. Despite the diversity of the country experiences examined in this paper and the absence of a single best approach to capital account liberalization, a number of apparent regularities may prove useful in formulating policy.

The evidence presented in this paper supports the conclusion that capital controls cannot substitute for sound macroeconomic policies. Countries with serious macroeconomic imbalances and no credible prospect for improvement in the short run were regularly unable to address large-scale capital flows, or their adverse economic effects, with capital controls. Not even comprehensive and strictly enforced administrative controls have always protected countries from balance of payments or financial crises.

To what degree capital controls are effective in insulating a country from external shocks or in providing a breathing space in which to adopt sound policies is a more difficult question to answer from the country case studies. Countries have tended to employ a number of policy instruments in unison toward a policy goal, so that it is difficult to disentangle the contribution of capital controls in achieving a certain objective. More flexible exchange rate policies, prudential policies, and liberalization of outflows (in case of excessive inflows) are some of the policies that have been employed in conjunction with capital controls. Some countries that have employed capital controls appear to have been more successful than others in achieving their policy objectives, and one can draw a number of generally useful observations from the countries' experiences.

First, no single capital control measure is effective across all countries at all times. Effectiveness depends on a host of factors, including the seriousness of macroeconomic imbalances, which may give rise to strong incentives for circumvention of the controls.

Second, selective controls on a targeted range of transactions, while possibly effective in limiting those specific transactions, tend to be quickly circumvented as market participants find ways to achieve their desired ends through unrestricted channels. To achieve their objective, controls need to be widened as market participants find new ways of circumventing the restrictions. The ease with which restrictions are circumvented is mitigated somewhat in countries that have a strong monitoring and enforcement capacity and that are able to quickly adjust controls to close off avenues for circumvention. In most cases, however, regulators have encountered difficulties in anticipating and countering the market response to controls. This is particularly true for a country with well-developed financial markets. Countries' experiences also show that even current transactions and foreign direct investment have been vehicles for circumvention, which attests to the difficulty of targeting even at the broadest level. To be effective in the somewhat longer run, controls in most cases needed to be quite comprehensive.

Third, administrative capacity and the level of financial market development also have a bearing on the choice of controls and their effectiveness. Properly designed market-based controls are more likely to be the less distortionary choice for a financial market that is substantially developed or liberalized. Nevertheless, measures such as the Chilean URR demand a degree of administrative sophistication if they are to be effective. Direct controls have been applied with some success in relatively closed economies at an earlier stage of financial market development. However, countries such as India and China that took this course also possessed an effective administrative apparatus. While direct controls may be somewhat less administratively demanding than market-based controls, one cannot conclude that direct controls are, other things equal, more ef-

fective than market-based controls. Direct controls may also be circumvented when they are not sufficiently comprehensive, or when implementation capacity is not sufficiently strong. Also, discretionary controls open up governance issues related to their fair and transparent implementation.

The need for controls to be comprehensive in order to be effective implies that more effective controls are also more distortionary and hence more costly. The benefits of effective controls thus need to be carefully weighed against their costs. Comprehensive direct controls can allow a country with a less developed financial market to insulate itself to some extent from external shocks and pressures, but such policies may impede financial market development, and may lead to a loss of the efficiencies that derive from liberalized markets. In countries with more sophisticated financial (and other) markets, very strong controls may be needed to ensure effectiveness. At some stage it may become difficult to design a set of controls that can limit “undesirable” capital flows without unduly restricting “desirable” transactions, seriously disrupting financial markets, and reducing access to foreign capital. The unfavorable trade-off has prompted many countries to dismantle comprehensive controls, including those that were introduced during periods of stress.

The evidence is mixed on whether capital controls can be used to correct financial market imperfections and serve a prudential purpose. Capital controls, particularly on short-term inflows, may temporarily and partially substitute for full-fledged supervisory institutions. In particular, it is clear that building effective supervisory and regulatory institutions may take a long time. On the other hand, the experience of the countries reviewed here suggests that while prudential concerns sometimes played a role in the decision to use capital controls, macroeconomic considerations were typically more important and indeed decisive in many cases. When governments adopt and modify capital controls primarily in response to macroeconomic factors, this may detract from their usefulness in attaining prudential goals.

The converse of the previous question is whether prudential regulation and supervision of financial institutions can help in managing the risks from international capital flows, by influencing the volume, composition, and hence the volatility of such flows. The evidence on this point seems more persuasive. Strong prudential policies were found to play an important role in orderly and successful capital account liberalization and in reducing the vulnerability to external shocks, and such policies may, to some extent, be an alternative to capital controls, in addition to being an inherently valuable means of enhancing financial system stability. Of course, prudential policies alone will not be able to eliminate the risks associated with international capital flows. Properly used, however, they will contribute to lessening such risks, in conjunction with appropriate macroeconomic policies. With prudential policies, as with capital controls and other government intervention, there is a need to guard against misregulation and overregulation. Moreover, as countries differ in their ability to implement and enforce various types of policies, the appropriate mix of capital controls and prudential policies to be used in moving toward capital account convertibility will also need to be tailored to a country’s specific circumstances.

Finally, with regard to sequencing, both capital account liberalization and other financial sector reforms are ongoing and interrelated processes, which appear to be closely linked to the overall level of economic development. The impetus for necessary financial sector restructuring has often come from a more general opening of the economy, and improved financial sector stability is in turn conducive to further external liberalization. These processes are also complex, and involve changes in many dimensions, including market development, governance, prudential regulation and supervision, monetary operations—the entire infrastructure of finance. Against this background, it is difficult to prescribe in general the sequence in which capital controls on different types of flows should be liberalized.