

POLICY ARENA

CAPITAL FLOWS IN CHILE: FROM THE TEQUILA TO THE ASIAN CRISES

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Abstract: Latin America experienced sharp swings in net capital inflows in the last two decades, with significant effects on the domestic economy. Chile, in particular, recorded the highest rise in external debt in the years up to 1981, and in 1982 exhibited the sharpest drop in GDP (15 per cent) in all of Latin America. This took place in an already deeply liberalized and privatized economy, with a persistent fiscal surplus.

In the early 1990s, already in transition to democracy, Chile was at the head of the 'emerging economies' facing a return of external finance. This renewal of supply took place in an international atmosphere of strong pressures from multilateral institutions, and the US authorities, for across-the-board capital account opening in recipient nations.

Chile moved against the stream, with a selective opening, including the introduction of regulations on short-term and other volatile inflows. The outcome has been highly successful, particularly at the time of the Mexican and Argentinean crises of 1995. But also Chile, in spite of some untimely relative weakening of the regulations in 1996–97, has been facing in rather good shape the Asian crisis, notwithstanding a severe worsening of her terms of trade. Here we review the policies implemented by Chile in the 1990s and their effects. Copyright © 1999 John Wiley & Sons, Ltd.

1 INTRODUCTION

The regulation of capital inflows in Chile has become a paradigmatic case in recent years. After the Tequila crisis, the Chilean economy remained nearly immune. Net private capital flows to Chile declined, but since it had a moderate deficit on current account and relatively illiquid external liabilities, the macroeconomy performed quite well: GDP rose 10 per cent in 1995. In the opposite policy approach, GDP in Mexico decreased 6.6 per cent as it did in Argentina; capital formation kept rising in Chile,

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while in Mexico and Argentina it fell between 30 and 16 per cent respectively. All three countries had already made deep market reforms, exhibited fiscal surpluses (including Argentina until mid-1994), and were considered to be 'successful emerging economies'.¹ The main difference between the three countries was the treatment of capital movements, with Chile discouraging short-term inflows, implementing an exchange-rate policy resisting the appreciation accepted elsewhere in Latin America, and (last and not least) tough prudential supervision of the financial system. (It must not be forgotten that in many countries the majority of the inflows have not been intermediated directly by domestic banks.)

A shortage of capital inflows prevailed for most Latin American countries (LACs) in 1995, with the consequence of a drop in GDP per capita. Partly, flows were redirected by financial investors to East and South-East Asia, where a restrictive policy *vis-à-vis* portfolio inflows and short-term lending was being drastically reversed. Financial opening in that region was matched with a sharp capital surge that lasted up to mid-1997. In 1996 and 1997 the new capital surge returned to Latin America; exchange-rates and deficits on current account rose once again. When the Asian crises exploded in 1997 and spread to the rest of the world, Latin America faced both financial and trade shocks. Contrary to 1995, when world trade was most dynamic and the terms of trade of the region improved, (Ffrench-Davis, 1998), in 1997–98 trade had been losing momentum and the terms of trade had worsened sharply for exporters of natural resources. Chile's exports continue to have a concentration in this sector.

Additionally, until mid-1998, Chile kept the regulations on capital inflows mostly unchanged. In the face of a surge stronger than in 1992–94, most inflows actually complied with the reserve requirement deposit, but this had become insufficiently restrictive as the external pressure mounted. In a policy shift, the Central Bank had become more sensitive to inflation, and self-confident given the immunity to the Tequila Effect that they had observed. Thus, the Bank allowed the exchange rate to appreciate and the deficit on current account to rise persistently in 1996–97. However, the disequilibrium was mild. Fortunately, the surge was short-lived under the contagion of the Asian crisis, and appreciation was reversed after late 1997. Only a moderate stock of volatile liabilities had accumulated, while reserves represented one full year of imports, and long-term FDI in the pipeline continued to exhibit high inflows. The Treasury, moreover, had saved proceeds from a high price of copper exported by the State company so that funds were available to compensate when that price dived in 1998. Given the scarcity of volatile funding, by mid-1998 the Central Bank reduced to zero the rate of the reserve requirement on capital inflows, while leaving the tool available for use in future surges.

This paper studies the phenomenon of massive capital inflows in Chile in the 1990s, the policy approaches utilized to deal with it, and its effects on the domestic economy. Section 2 summarizes some effects of capital inflows, and describes their volume and composition. Section 3 discusses the measures implemented to deal with inflows and the policy effects on the national economy. Section 4 draws some policy lessons for developing economies.

¹ In mid-1994 we completed a project on *Coping with Capital Surges*, published in 1995 (Ffrench-Davis and Griffith-Jones, 1995). That book examines the origin of the funds and includes country cases on Argentina, Chile and Mexico. There we discuss in detail the Chilean case (Ffrench-Davis *et al.*, 1995).

2 SURGES AND DROUGHTS

Capital inflows to LACs were extremely vigorous from the mid-1970s until 1982. Then, for nearly a decade, there was a severe drought that became a binding external restriction on economic activity and productive investment. By 1990, a new private capital surge started to develop (see Calvo *et al.*, 1993; Ffrench-Davis and Griffith-Jones, 1995; and Ocampo, 1994). Chile was one of the first countries to attract the renewed inflows and one of the countries that faced a larger supply in relation to its size. The reversal of the drought of the 1980s undoubtedly relaxed the binding foreign exchange constraint under which most LACs labored during the debt crisis. However, both the large magnitude of the inflows and their composition (prone to volatility) have caused problems for which the recipient countries have been, by and large, poorly prepared.

2.1 Some Macroeconomic Effects of Capital Surges

In the first place, there is the problem of domestic absorption. If capital inflows are to contribute to long-term development, they should lead to a significant increase in the investment rate, something which, with the exception of Chile, has not taken place in most countries in the region. In Chile, it will be argued that one reason for the greater degree of success in channeling foreign capital to investment has been the discouragement of short-term flows and the large share of foreign direct investment (FDI) in recent capital inflows. The Chilean experience does indeed suggest that, when capital inflows take the form of FDI, there is a greater likelihood that the investment rate will rise than when foreign capital is in more liquid or short-term forms.

Secondly, large inflows pose difficult dilemmas to policy makers. Without intervention on foreign exchange markets, and in the absence of regulations on capital inflows, the real exchange rate will appreciate. This appreciation may well be undesirable from the point of view of other important policy objectives (e.g., encouraging export growth and diversification, attaining higher domestic investment rates, or meeting targets for the current account deficit consistent with sustainable capital inflows). As reported in Ffrench-Davis (1992), most LACs were appreciating their exchange rates by early 1992 and the trend persisted until 1994; it then resumed in 1996 until the Asian crisis spread to other regions. On the other hand, intervention in the foreign exchange market tends to swell the domestic money supply and increases the difficulties in controlling inflation.

Third, a significant proportion of the recent inflow to emerging markets has taken the form of short-term or liquid capital. There have been two components that are clearly of a short-term nature: short-term credits and deposits, on the one hand, and portfolio flows, on the other. Portfolio inflows are rather new to the emerging economies. Flows to stock markets began in the early 1990s, jumped in 1993–94; disappeared altogether in 1995 as a consequence of the Mexican peso crisis, and reappeared vigorously in 1996–97. Portfolio flows are not usually thought of as short-term capital, but in practice they are. Portfolio investments can be liquidated at a moment's notice and, therefore, may be just as short-term in nature as short-term indebtedness. Typically, portfolio investors operate with imperfect information, they seek short-term capital appreciation, and are prone to bandwagon effects, either in

taking positions or in liquidating them. This has been clearly in evidence in the financial crises that have struck first Mexico (December 1994) and more recently the Asian economies (since mid-1997, and still unfolding at the time of writing). In both cases the original crisis spread to other 'emerging markets': investors lost confidence not only in the economy where the crisis had started but also in those of other developing countries that had received large capital inflows. Large portfolio inflows were thus followed by large outflows, sharp reversals of initial appreciations in exchange rates and declining stock market prices.²

The Chilean policy response during the current surges in the supply of foreign capital can be described as an attempt to discourage short-term capital inflows while maintaining liberal policies toward long-term inflows. Particularly, policies have been geared to increasing the cost of short-term inflows via non-interest-bearing reserve requirements and the introduction of greater uncertainty as regards the exchange rate. The authorities have also resorted to sterilized intervention in order to slow down real exchange rate appreciation and thus protect a development strategy whose main elements are export growth and diversification. The policy was effective in achieving its targets for most of the 1990s.

In 1996–97, however, the policy mix and the intensity with which it was applied remained unchanged in the presence of a new vigorous surge in capital flows to most countries in the region. As a consequence, and despite heavy intervention in foreign exchange markets, the Central Bank was unable to prevent a sharp real exchange rate appreciation and rise of the deficit on current account. Evidently, the new surge should have been met with an increased reserve requirement or other equivalent measures. Nonetheless, the benefits of the active regulation in previous years had left large international reserves, a low stock of foreign liabilities and a small share of volatile inflows.

During 1998, the contagion effects of the Asian currency crisis made themselves felt. The large inflows of financial capital that had taken place in 1996–97 gave way to outflows, and the nominal exchange rate had started to depreciate. But, in our view, the depreciation to date has been towards a sustainable equilibrium, partly correcting the disequilibrium generated in 1996–97. There is thus a need to assess policy options further to improve the management of financial flows which, by discouraging excessive future inflows, would protect the economy from excessive exchange rate volatility. A more flexible use of a comprehensive policy mix, matching the intensity of surges, should be at hand.

2.2 Volume and Composition of Capital Inflows

It is important to place recent capital inflows in historical perspective. This is done in Table 1, which shows total receipts in the period 1960–97 as a proportion of GDP, both in current prices and in 1986 prices. The transformation of the data to a constant dollar basis was undertaken because the real exchange rate has experienced very wide

² Nationals of the countries concerned have been observed to behave much in the same way as foreign portfolio investors. In fact, it is believed that, in Mexico, the first ones to lose confidence in the peso and to shift to dollar-denominated assets were Mexican investors. Thus the ultimate cause for exchange rate and asset price volatility appears to be the openness of the capital account and the ease of moving into and out of assets denominated in foreign currency, rather than just the behaviour of foreign investors.

Table 1. Net capital inflows and deficit on current account (as a percentage of GDP). *Source:* Central Bank of Chile.

	Net capital inflows		Deficit on current account Current prices
	Current prices	1986 prices	
1960–70	2.6	4.3	2.5
1971–73	1.2	2.1	2.9
1974–81	9.0	12.4	5.0
1982–89	5.3	6.3	6.2
1990–97	6.5	7.2	3.3

(a) Excluding debt prepayments in 1995–96. The constant price series was derived by deflating the dollar inflow series by an index of foreign prices faced by the Chilean economy. As for the denominator, GDP at constant 1986 prices was transformed to 1986 dollars using the 1986 peso–dollar exchange rate.

fluctuations which distort the meaning of changes in the ratio in current dollars. In Table 1, we use a periodization that we maintain below in the analysis of growth, saving, and investment data. We take the period before 1971 to reflect a sort of long-run steady rate for the Chilean economy, before the wide policy swings that followed. The 1971–73 period corresponds to the socialist experiment. The period from 1974 to 1981 represents the first complete business cycle of the military government, during which the authorities introduced most of the free-market reforms with which Chile is associated. It begins with the deep recession of 1974–75 and ends with the peak of the boom of the late 1970s and early 1980s. The 1982–89 period coincides with the debt crisis and is also of a somewhat greater pragmatism in economic policy. The first four years are marked by depressed economic conditions, followed by quick recovery in 1986–89. This latter year also represents a cyclical peak. Finally, the period since 1990 corresponds to the return to democratic rule and is roughly coincident with the latest episode of foreign capital abundance. During this entire period of the 1990s, the economy has been expanding briskly and has been close to capacity output.³

The data show that capital inflows, as a proportion of GDP, were substantially larger in the 1990–97 period than in the 1960s and, surprisingly, only slightly higher than during the debt crisis (1982–89). In the mid-1980s, with the debt crisis, the disappearance of voluntary bank lending was partly compensated by substantial support from the multilateral financial institutions. Thus, flows from public sources became the main form of international financial funding available to the Chilean economy during the 1980s.

The story of the return of private foreign capital inflows has been told before (see Agosin and Ffrench-Davis, 1998; Ffrench-Davis *et al.*, 1995), so that a brief summary will suffice. FDI represents a large part of the capital inflows into Chile over this decade. About 60 per cent of FDI through regular channels has gone into copper mining, the remainder concentrating in services. As already noted, short-term private inflows have also figured prominently in the recent capital surge, though at a much lower scale than FDI. For interest-arbitraging capital inflows to take place, the domestic interest rate must exceed the international rate by a margin that is more than

³ In 1990, there was a policy-induced slowdown in economic growth, as the economy was overheated (for electoral reasons) during the last year of military rule (1989). Thus one can distinguish a ‘mini’ business cycle with a peak in 1989, a trough in 1990, and a subsequent peak in 1992, a year of exceptional economic growth.

sufficient to compensate for the expected rate depreciation and the country risk premium. These conditions have prevailed in Chile since the late 1980s. On the one hand, domestic interest rates have remained high, owing to lingering inflation and restrictive monetary policies. On the other, in 1992 and 1993, international dollar interest rates reached a 30-year low, and, while they have risen since then, they have remained moderate and are still much lower than they were in the 1980s.

The other two terms in the interest arbitrage condition have also been favourable to capital inflows. As Chile began to emerge from the debt crisis, expectations regarding the real exchange rate turned from depreciation to appreciation. Improving terms of trade also contributed to the change in expectations. Moreover, expectations of exchange rate appreciation, owing to the capital inflow itself and to an improved current account position, made short-term round tripping appear very profitable. Also, as in other countries in the region, there was a decline in the country risk premium. The 'emerging markets' mania of recent years in international stock markets can be interpreted as a dramatic reduction in perceived country risk. Chile's relatively developed domestic stock market, plus the burgeoning use of American Depositary Receipts (ADRs) for placing shares in the United States stock markets, made Chilean stocks a prime candidate for investors seeking new and more exotic financial vehicles. Short-term private flows were very important until 1993, when they began to fall off as a consequence of the measures adopted to stem them (see below).

Portfolio inflows have taken two forms: investments through mutual funds set up in the major international capital markets and the issuance of ADRs by a handful of large Chilean corporations. The ADR is a mechanism by which foreign corporations can issue new shares on the United States stock markets. The original or ('primary') issue of ADRs represents an opportunity for expanding the capital of firms at relatively low cost, since capital costs in international markets tend to be lower than in Chile. However, there is also what is known as the 'secondary' issue of ADRs through the purchase of the underlying stock in the Chilean market by foreigners and its subsequent conversion into ADRs (for a thorough discussion, see Ffrench-Davis *et al.*, 1995). This operation does not constitute an enlargement of the capital of the issuing company but only a change in ownership from nationals to foreigners. While there is nothing intrinsically negative about these operations, at a moment when foreign exchange is overabundant and there are significant pressures to appreciate the exchange rate,⁴ it may be necessary to discourage them. These shifts in ownership involve exposing the economy to an additional degree of uncertainty and volatility, since when foreign investors' mood changes they can easily reverse the operation and convert their ADRs into the underlying stock in national currency for sale on the domestic stock market.⁵

The Mexican and the more recent East Asian crises are illustrative of these dangers. In the case of Mexico, domestic policy failures, particularly the large increase in domestic credit that resulted from a poorly regulated domestic financial system, were

⁴ This paper follows the Latin American convention of defining the exchange rate as units of domestic currency per unit of foreign exchange. Therefore, an appreciation is a downward movement.

⁵ It has been argued that foreigners who become pessimistic about a country will sell their ADRs in the United States stock market, therefore having no impact on the domestic stock and foreign exchange markets. However, this argument ignores the fact that the issuance of ADRs implies that stock prices in the domestic and United States markets must tend to equality through arbitrage. This is in fact what has happened: movements in stock prices of Chilean companies that have issued ADRs in US stock exchanges are highly correlated with those in the Santiago exchange.

Composition of private capital inflows, 1983-97 (millions of US\$)

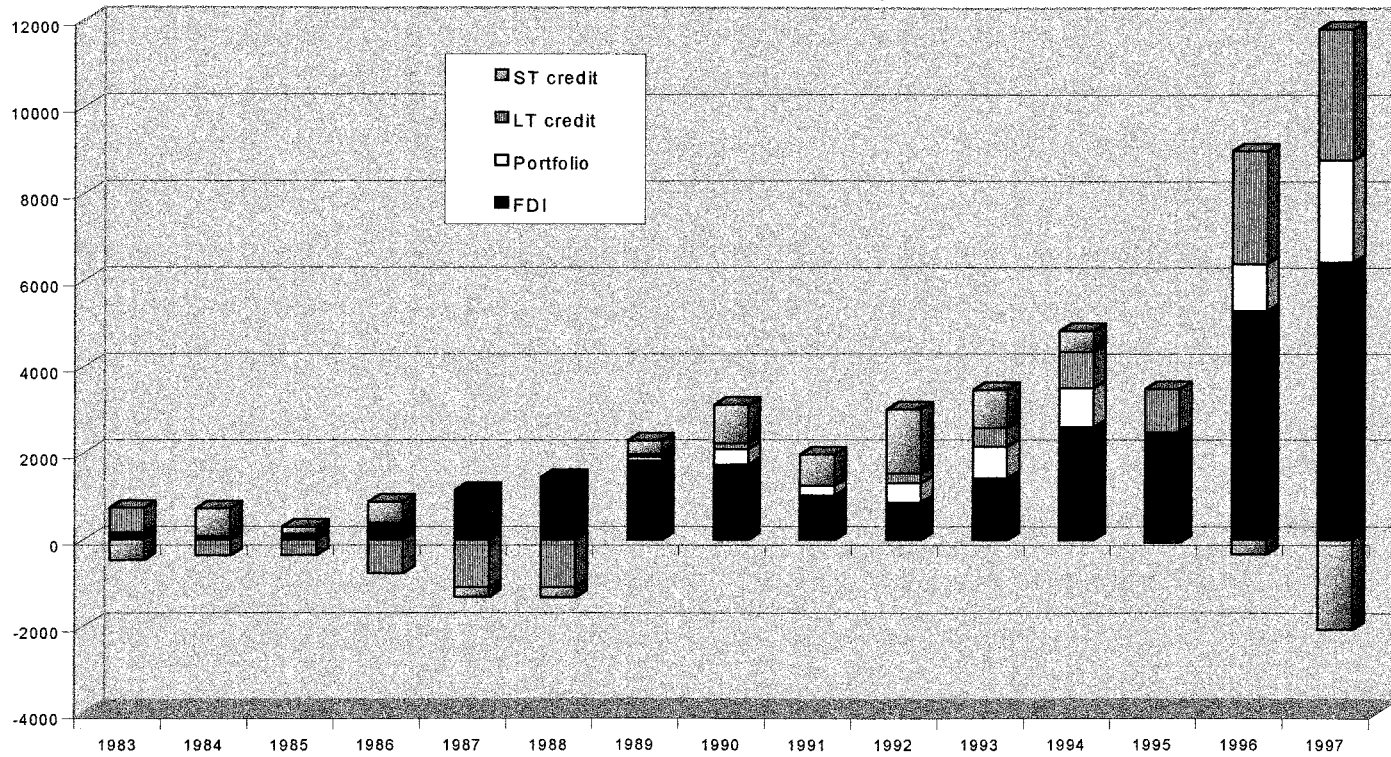


Figure 1. Composition of private capital inflows, 1983-97 (millions of US\$). *Source:* Author's calculations based on data of the Central Bank of Chile. Private figures in 1988-90 have a large share of debt-equity swaps. From 1991 they are totally effective net inflows to the capital account.

important factors. Domestic credit booms were, however, in both of these crises, triggered by large capital inflows. The herding behaviour displayed by foreign portfolio investors has been increasingly recognized as a critical element in the crisis (Calvo and Mendoza, 1996). Since assets of firms from a particular developing country are normally a very small proportion of international investors's portfolios, it may not pay to go to the trouble of obtaining information, which is very costly. Therefore, they tend to go on 'signals'. The positive signal at the end of the 1980s was that Mexico was undertaking market-oriented reforms (and entering NAFTA) that would, in the eyes of the international banks, raise returns on Mexican corporate assets. However, the rush to invest in Mexico created conditions which turned the positive signal into a negative one. In the case of Mexico, the 'signal' for a reversal of the financial capital inflow was the notion that current account deficits had become 'unsustainable' and that the exchange rate had appreciated 'excessively'. Of course, the large current account deficits and outlier macroeconomic prices, particularly an appreciating exchange rate, had been principally a consequence of the exogenous (and collective) behaviour of foreign investors in the first place.

What this boils down to is that a large component of capital inflow, particularly portfolio capital, is not only volatile but is largely exogenous from the point of view of the recipient country. Even short-term credit has an exogenous component, since the so-called country risk premium has a large subjective element. Hence, paradoxically, a successful country can see its fundamentals—such as deficit on current account, exchange-rate, domestic savings and bank portfolio—worsened by a large capital surge (see Devlin *et al.*, 1995).

From a theoretical point of view, what we have here is the possibility of multiple equilibria: an appreciated exchange rate with large capital inflows and a depreciated exchange rate with capital outflows. Moreover, there are dynamics involved: capital inflows appreciate the real exchange rate, and the latter, if it is gradual, encourages additional inflows. This can proceed for several years, as happened in 1976–81 and 1990–94 in several LACs. After a while, when deficits on current account accumulate and the stock of external liabilities rise, the appreciation trend is replaced by expectations of depreciation. This, in turn, leads to a reversal of the direction of flows. This would suggest first, that there is a need for policies that reduce the more volatile components of capital inflows; and second, that the 'fundamentals' are not independent of policies toward inflows. Moreover, some equilibria are more 'desirable' than others, in terms of effects on economic growth and sustainability.

While private flows have increased, public debt has been reduced with public outflows. During 1989–91, these net outflows were caused mainly by the counterpart public debt operations involved in debt-equity swaps. More recently, they represent mostly debt prepayments which were particularly large after 1994. These prepayments have been undertaken to alleviate the large accumulation of international reserves by the Central Bank to relieve appreciating pressures on the foreign exchange markets, and to improve the balance of the Bank. Moreover, since 1991, several large Chilean corporations have been making direct investments abroad. These flows are now significant, accounting for almost 2 per cent of GDP, and are directed mainly at neighbouring countries. The largest investments have been in electricity generation and distribution (mostly in recently privatized companies, first in Argentina and then in other Latin American countries), but other sectors such as light manufacturing and retailing are also represented (Calderón and Griffith-Jones, 1995).

3 THE POLICY RESPONSE AND ITS EFFECTS

In the 1990s the Chilean monetary authorities have deployed a wide array of policies to regulate the surge in capital inflows. On the one hand, the Central Bank has attempted to discourage short-term and speculative capital inflows while maintaining open access to the economy for FDI. On the other, it has sought to insulate partially the domestic economy from the impacts of capital inflows by intervening in foreign exchange markets (to prevent an excess supply from unduly appreciating the real exchange rate) and by sterilizing almost completely the monetary effects of the rapid accumulation of international reserves (see Ffrench-Davis *et al.*, 1995).

Two other policy factors have contributed to the successes achieved in managing capital inflow. First, fiscal policy has been extremely responsible. Chile has been running a significant public sector surplus during the 1990s, amounting to one to two per cent of GDP. The prudent stance of fiscal policy, including the compliance with the rules of a copper stabilization fund, has eased the task of the monetary authorities in the management of capital inflows and in preventing undue exchange rate appreciation. Second, as a result of the 1982–83 banking crisis, prudential banking regulations were introduced and have been perfected over the years. This, again, prevented capital inflow from unleashing a lending spree by the commercial banks, which, in turn, eased the task of keeping the current account and the exchange rate within bounds.⁶

3.1 Management of Flows

The main consideration of exchange rate and inflow management policies has been to protect the growth model adopted by the authorities, which is one based on the expansion and diversification of exports. In order for exports to continue to be an engine of growth of the Chilean economy, the level and stability of the real exchange rate are crucial. This objective could have been placed in jeopardy if capital inflows caused excessive exchange rate appreciation and greater future volatility when the direction of net flows went into reverse.

The Chilean authorities opted to regulate the foreign exchange market in order to prevent large misalignments in the real exchange rate relative to its long-term trend. The option chosen to make the long-term fundamentals prevail over short-term factors influencing the exchange rate assumes (correctly, in our view) that there exists an asymmetry of information between the market and the monetary authorities. The latter have a better knowledge of the factors driving the balance of payments, and have a longer planning horizon than agents who operate intensely at the short-term end of the market. However, rather than maintaining a unique parity, recognizing uncertainty the authorities have used an exchange rate band centred on a reference

⁶ A tough bank supervision and regulatory environment prevented excess liquidity of banks from fueling a consumption boom and a deterioration in the quality of bank assets (as clearly took place in Mexico). Some elements of prudential supervision adopted over the years since the banking crisis of 1982–83 include the continuous monitoring of the quality of bank assets; strict limits on lending by banks to related firms; the existence of automatic mechanisms of bank equity adjustment when the market value of equity falls below the limits required by the regulators; and faculties to freeze banking operations, impede fund transfers outside of troubled banks, and restrict the payment of dividends to institutions that fail to comply with capital adequacy requirements (Aninat and Larraín, 1996).

price linked to a basket of three currencies. The dollar, the deutsche mark and the yen are represented with weights associated to their share in Chilean trade.

The excess supply of foreign exchange began in mid-1990. Here we give an analytical account relating policy changes to the events that elicited them. The changes taking place in global markets, the increasing international approval of Chilean economic policies, high interest rates in Chile, and a smooth transition to democracy stimulated a growing inflow of capital.

In June 1991, a non-interest bearing reserve requirement of 20 per cent was established on external credits (covering the whole range of foreign credits, from those associated with FDI to trade credits). The reserves had to be maintained with the Central Bank for a minimum of 90 days and a maximum of one year. At the same time, a stamp tax on domestic credit, at an annual rate of 1.2 per cent on operations of up to one year, was extended to apply to external loans. In July, an alternative to the reserve requirement was allowed for medium-term credits which involved a payment to the Central Bank of an amount equivalent to the financial cost of the reserve requirement. The financial cost was calculated applying LIBOR plus 2.5 per cent (at an annual rate) to the amount of the reserve requirement. The reserve requirement, the option of paying its financial cost and the tax on foreign credits all have a zero marginal cost for lending which exceeds one year, and, as discussed below, the first two are particularly onerous for flows at very short maturities (see evolution of policies in Agosin and Ffrench-Davis, 1998, Table 2; Budnevich and Le Fort, 1997).

With continuing capital inflows, over time the system of reserve requirements was tightened and extended to most international financial transactions. Since May 1992, reserve requirements on external credits stand at 30 per cent and were extended to time deposits on foreign currency and to purchases of Chilean stocks ('secondary ADRs') by foreigners.⁷ The period during which the deposit must be maintained was extended to one year, regardless of the maturity of the loan. The spread charged over LIBOR in the option of paying the financial cost of the reserve requirement was increased from the original 2.5 per cent to 4 per cent. In order to close a loophole through which the reserve requirements were being evaded (since equity investment is exempt), the authorities are now screening FDI applications. Permission to enter into the country as FDI exempted from the reserve requirement is denied when it is determined that the inflow is disguised financial capital. In such cases, foreign investors must register at the Central Bank their funds as financial investments subject to the reserve requirement. With the Asian crisis, and the sharp scarcity of financial inflows, the reserve requirement rate was reduced to 10 per cent and then to zero. The authorities announced, however, that the policy tool remained available in case of future need.

Since 1991 an attempt has been made to ease capital outflows as a way of alleviating downward pressures on the exchange rate (see Ffrench-Davis *et al.*, 1995). In particular, Chilean pension funds have been allowed to invest abroad up to 12 per cent of their total assets. The policy was effective in encouraging significant flows of FDI and purchases of foreign firms by Chilean companies in neighbouring countries (Calderón

⁷ It is not difficult to impose reserve requirements on foreign portfolio investments. If the funds that will be used for the investment are deposited with a Chilean bank, the foreign deposit is liable to reserve requirements. For those funds that do not use a Chilean bank as intermediary, the reserve requirement can be imposed at the moment the asset is registered in the name of an agent with a foreign address. In order to be converted into ADRs, they must also go through registration with the Central Bank.

and Griffith-Jones, 1995). However, higher rates of return on financial assets in Chile than abroad and expectations of peso appreciation discouraged foreign financial investments by Chilean pension funds and recently authorized closed-end mutual funds for international financial investment. These investments had been rising slowly as domestic firms and pension funds obtain more and better information about foreign financial assets. An immediate effect of liberalizing outflows has probably been to encourage additional inflows (Williamson, 1993; Labán and Larraín, 1997). Furthermore, outflows by pension funds rose sharply only when expectations changed from appreciation to depreciation from late 1997. Actually, net outflows by pension funds in January–September of 1998 climbed to the equivalent of 2 per cent of the GDP of that period.⁸

3.2 Exchange Rate Policy

Exchange rate policy has also experienced substantial change over time. The use of a fixed nominal exchange rate in 1979–82, in the context of an increasing and eventually complete liberalization of capital account transactions, was abandoned after the crisis of 1982 during which GDP declined by 15 per cent. In 1983 through 1989 the authorities utilized a crawling peg, with a floating band of 2 per cent (widened to 3 per cent in 1988 and ± 5 per cent in mid-1989). The ‘official’ rate was devalued daily, in line with the differential between domestic inflation and an estimate of external inflation. On a number of occasions, discrete nominal devaluations were added, helping to achieve a remarkable real depreciation following the 1982 crisis: 119 per cent between 1981 and 1988.

Since early 1992, the exchange rate band has been gradually widened (with the band standing at 12.5 per cent on either side of the official rate by mid 1998), and the official rate has been revalued discreetly on a number of occasions. The dollar peg of the official rate has also been replaced by a basket peg as the new benchmark exchange rate. Given the instability of international exchange rates, these measures were intended to make interest rate arbitrage between the dollar and the peso less profitable by introducing greater exchange-rate uncertainty for speculative capital flows that are denominated mostly in dollars. In order to lower the floor of the band, the authorities have tinkered in 1997 with the weights assigned to each currency, making the peg to a currency basket rather than the dollar less credible.⁹ In addition, they have factored in a 2 per cent annual appreciation into the calculation of the central rate, ostensibly to account for higher productivity growth in Chile than in its main trading partners.

Given that the market exchange rate has been for several years close to the floor of the band, with very little variation in the nominal dollar–peso rate, the policy of maintaining an increasingly wider band has lost effectiveness in dissuading speculative capital inflows. Indeed, speculators observe that, when they bet on peso

⁸ The approach to liberalizing capital outflows adopted by the authorities has been gradual. The essential idea is that a hasty financial liberalization risks leaving too many doors open for outflows, which could be massive in case of market nervousness and shifts to expectations of currency depreciation, as we advised in due time (see Ffrench-Davis *et al.*, 1995). This could make more difficult the achievement of exchange rate and macroeconomic stability. The recent international financial crises are clear examples of this.

⁹ In November 1994 the weight of the US dollar was reduced from 50 to 45 per cent, reflecting the falling incidence of that currency in Chilean trade. In January 1997, it was arbitrarily raised to 80 per cent.

appreciation, the authorities have frequently wound up lowering the band. With expectations overwhelmingly in favour of currency appreciation, the large interest rate differential between the peso and the dollar (together with good prospects for large Chilean companies) has given foreign portfolio and short-term investors what amounts to a very profitable one-way bet. This conclusion remains in spite of the toll they must pay for entering domestic financial markets in the form of the reserve requirement. The trend towards appreciation could have been softened by intensifying price restrictions on inflows (i.e. the height of the reserve requirement). Instead, by exploiting exchange rate appreciation to counter domestic inflation, there was some reversal in what had been a highly successful policy for sustaining macroeconomic equilibrium. Following the Asian crisis, by contrast, the authorities have experienced a respite from exchange rate appreciation. Incipient financial capital outflows and greater demand for dollar denominated assets by nationals have caused the market price for the dollar to rise, for the first time in five years, well above the floor of the band.

3.3 Effectiveness of Policy Measures

What have been the financial costs imposed on foreign borrowing by the system of reserve requirements and taxes on foreign lending? The total tax consists of the extra interest costs imposed by the reserve requirements and the tax on foreign credits.¹⁰ As a result of the lengthening (in late 1992) of the reserve requirement holding period to a full year, regardless of the maturity of the financial transaction, the implicit tax rate on foreign borrowing increases dramatically as maturities shorten. This characteristic of the system, which likens it in its effects to a unilateral Tobin tax (Tobin, 1978), is the rationale behind the requirement that reserves be held for an entire year. Before its imposition, the implicit tax rate (on an annualized basis) was identical on transactions as short as a quarter (the minimum holding period up to late 1992) or as long as a year. These very large estimates of the implicit tax rate on short-term operations suggest that, if the regulations were not evaded, they must have discouraged short-term and portfolio flows.

How effective has been the reserve requirement (together with exchange rate management) in deterring short-term flows and preventing excessive exchange rate appreciation? There are two kinds of evidence to which one can resort. The first kind is qualitative. Chile faced a larger supply of external finance (relative to its GDP) than other countries in the region, because of its better economic performance and greater political stability. However, exchange rate appreciation and the current account deficit (as a share of GDP) have both been smaller than in other LACs that have been large recipients of foreign capital. In addition, FDI has been a much larger proportion of inflows in Chile than in other countries.

These achievements during the boom were rewarded during the subsequent crisis. In 1994, The Mexican 'Tequila' crisis produced a sharp reduction in the inflows toward Latin America as a whole. Consequently, Mexico and Argentina — previously considered 'successful' countries — were forced to implement a costly downward adjustment that, as said above, resulted in a significant fall in GDP (5.5 per cent and

¹⁰ See the calculations for different terms of the inflows in Agosin and Ffrench-Davis (1998).

Table 2. Argentina, Chile and Mexico: Indicators. *Source:* ECLAC.

	Real exchange rate 1987–90 = 100			Deficit on current account as % of GDP			External debt on exports		
	Argentina	Chile	Mexico	Argentina	Chile	Mexico	Argentina	Chile	Mexico(a)
1991	67.3	100.1	81.3	0.3	-0.3	5.1	4.1	1.6	2.4
1992	62.6	96.6	74.8	2.5	1.7	7.3	4.0	1.5	3.2
1993	60.1	97.9	71.2	2.8	4.7	6.4	4.5	1.7	3.3
1994	63.3	97.8	73.1	3.4	1.2	7.8	4.3	1.5	3.2
1995	70.3	93.6	108.0	0.9	-0.2	0.6	3.8	1.1	2.9
1996	71.9	89.3	97.6	1.3	5.2	0.6	3.7	1.2	2.3
1997	69.8	77.4	91.1	3.1	5.3	1.8	3.8	1.3	1.9

	GDP growth (%)			Urban unemployment (%)			Gross fixed investment as % of GDP in CH\$ 1990		
	Argentina	Chile	Mexico	Argentina	Chile	Mexico	Argentina	Chile	Mexico
1991	10.0	8.0	4.3	6.5	9.3	2.7	16.7	21.3	19.0
1992	9.5	11.4	3.8	7.0	7.0	2.8	20.4	23.7	20.3
1993	5.7	6.6	1.9	9.6	6.2	3.4	22.4	26.3	19.5
1994	7.5	5.6	4.7	11.5	8.3	3.7	25.4	26.4	20.1
1995	-5.0	10.1	-6.6	17.5	7.4	6.2	22.4	29.6	15.3
1996	3.6	7.3	5.3	17.2	7.0	5.5	23.4	30.3	16.9
1997	8.4	6.9	7.3	14.9	7.1	3.7	27.5	32.0	19.1

(a) Exports do not include maquila.

6 per cent, respectively), a sharp decline in fixed investment, and a rise in unemployment rates. In contrast, despite the implementation of similar policies in the years prior to 1994, Chile showed much stronger performance than its Latin American counterparts in the wake of the 'Tequila' effect. Unlike Mexico and Argentina, Chile exhibited a 10 per cent growth in GDP, a rise in capital formation as a share of GDP, and a fall in unemployment rates.

Thus, the successful experience of Chile post-crisis can be attributed to macro-economic policies related to the external sector that worked to protect the economy. Principally, the less volatile composition of inflows, more intensive in non-reversible components of long-term FDI, functioned to reduce vulnerability and to create confidence among investors and creditors. Second, there is econometric evidence that policies towards the capital account have worked rather well. Recent studies indicate that the combination of disincentives to short-term inflows with the reforms in the exchange rate régime, at least up to 1994, had been able to reduce significantly the inflow of short-term, interest-arbitrage funds (Agosin, 1995, 1998; Larrain *et al.*, 1997). As noted below, the situation has changed markedly in more recent years, in the face both of a new capital surge toward the emerging economies and restrictions that, paradoxically, were kept unchanged by the autonomous Central Bank.

Some observers have claimed that the efficacy of measures to discourage capital inflows is only temporary, as private sector operators find ways to evade them (for an example of this literature, see Valdés-Prieto and Soto, 1996). In principle, this can be done through several mechanisms. One is the underinvoicing of imports or the overinvoicing of exports. The second is to delay payment for imports or accelerate

export receipts. Thirdly, it is possible to bring in funds through the informal foreign exchange market. Fourth, there is also the possibility of registering short-term funds as FDI. However, this could be a costly option, since Chilean law requires that FDI remain in the country for at least one year before repatriation.¹¹ Nonetheless, it was becoming a significant loophole, which, as already noted, the authorities have moved to close. Fifth, it is possible for agents to arrange back-to-back operations in which, for example, an agent pays for imports with a bank deposit in Chile rather than with foreign exchange; at the same time, the exporter is paid in foreign exchange by a bank in his country. All of these (and other forms of evasion, as well) are possible, but they are not costless, and some of them may have undesirable effects on tax liabilities. While some evasion is inevitable, there is no hard evidence that the measures to discourage short-term capital inflows have been massively evaded.

However, it is clear that maintaining the reserve requirement at an unchanged rate and/or failing to supplement it with other measures became insufficient in face of the new capital surge in 1996–97. Additionally depressed stock market prices in late 1995, and a real exchange rate that was widely expected to appreciate further, exerted an attraction to portfolio inflows such as the very heavy influx to the Chilean stock market in 1996–97. But large financial inflows are inevitably bound to turn into outflows at some point and contagion from the Asian crisis is currently having that effect. In addition, actual exchange rate management did not contribute to discouraging speculative inflows. In spite of its formal adherence to a crawling band in 1996–97, the Central Bank was in effect managing a quasi fixed nominal price for the dollar.

Since 1993, the secondary of issue of ADRs had become a large source of short-term capital inflow with particularly volatile characteristics. Thus the extension of reserve requirements to these inflows in 1995 can be considered to have been an attempt to deal with an incipient problem which was already causing difficulties in policy management and which could become even more important in the future. It is likely that, in the absence of reserve requirements, portfolio inflows would have been much larger. However, after a temporary lull in 1995, they regained momentum from early 1996. Most foreign investors, particularly into the stock market, complied with the reserve requirement. As already noted, the entry fee may very well have been perceived as cheap in the face of positive fundamentals and a strong likelihood of further real exchange rate appreciation.

Another line of attack against the use of disincentives to short-term capital inflows has been to claim that, as regards their behaviour, it is impossible to distinguish between capital inflows such as FDI or long-term lending, on the one hand, and short-term flows, on the other. Some neoliberal authors claim that balance-of-payments categories have little to do with the stability of flows themselves, long-term flows being just as likely to be unstable as short-term flows. In Agosin and Ffrench-Davis (1998) we checked this hypothesis for Chile. We found FDI to be considerably less volatile than other kinds of capital inflows, and that it is worthwhile to target policies on the latter. This is what the Chilean authorities have attempted to do, with more success in the early years of application than more recently. Undoubtedly, short-term and portfolio inflows would have been much larger in the absence of the reserve requirement. Second, sterilized intervention in foreign exchange markets prevented

¹¹ It should be noted that the loans associated with FDI have been subject to the reserve requirement. Since the average maturity of these loans is about seven years, the incidence of the restriction is low.

undue exchange rate appreciation and a consumption boom, thus keeping the current account deficit within reasonable bounds, (again with the exception of 1996–97).

The policy mix used also had financial costs for the authorities. The accumulation of large volumes of foreign exchange reserves imposes a social cost on the economy, since the returns on these assets have been inferior to the interest payments on Central Bank liabilities issued to sterilize the monetary effects of reserve accumulation. The resulting losses for the Central Bank are estimated at about one half of a percentage point of GDP per annum. Nevertheless, the disincentives on short-term capital inflows have lessened these costs thereby facilitating the task of sterilizing the monetary consequences of reserve accumulation.

3.4 Saving, Investment and Growth

The period since 1989 marks a clear-cut improvement in growth performance, not only in comparison with the 1971–89 period, but also to the more favourable 1960s (see Table 3). The ratio of gross fixed investment to GDP has risen steadily since its trough in the early 1980s, from about 15 per cent of GDP in 1983–84 to over 30 per cent in 1995–97. This increase in the investment ratio has allowed Chile to sustain a growth of GDP averaging close to 8 per cent per annum in the 1990s. The increase in the national saving rate was even stronger than the increase in the investment ratio, going from 13 per cent in the 1980s to 25 per cent in the 1990s. At the same time, foreign saving declined sharply, from 6 per cent of GDP to 3 per cent. This is indeed surprising, since, as discussed in Section 2 above, capital inflows averaged about 6 per cent of GDP in the 1990s. This shows that the policies of sterilizing capital inflow and fiscal austerity, by preventing undue real exchange rate appreciation, made the economy absorb less foreign capital than what was on offer. The counterpart of the difference between capital inflow and foreign saving (i.e. the current account deficit) was, of course, the accumulation of foreign assets by the Central Bank.

The rise in domestic saving and investment rates since their troughs in the mid-1980s has been remarkable. Moreover, it has taken place at the time of strong capital inflow and even stronger increases in the availability of foreign capital to the Chilean economy. In other countries (e.g. Mexico or Argentina), in the face of large capital inflows, investment rates have risen modestly and domestic saving rates have fallen, partly owing to the income and wealth effects of real exchange rate appreciation and sky-rocketing stock and real estate prices.

Table 3. Chile: investment, foreign saving and growth indicators, 1960–97 (as a percentage of GDP). *Source:* Authors' calculations, based on national accounts data of the Central Bank of Chile in 1986 prices.

	Gross fixed investment	Gross investment	Machinery & equipment	Foreign saving (a)	Per cap. GDP growth
1960–70	23.2	25.1	11.1	2.5	2.2
1971–73	18.4	16.9	8.5	2.9	–1.1
1974–81	18.4	22.2	11.0	5.0	1.2
1982–89	18.7	19.8	8.9	6.2	1.1
1990–97	27.6	31.4	15.7	3.3	6.0

(a) The foreign saving is the deficit of the current account of the balance of payments as a share of GDP, both in Chilean pesos of each year.

The Chilean policies to restrain capital inflow and to moderate exchange rate appreciation can be credited with at least part of the success achieved with regard to investment, saving and growth rates. On the one hand, the management of inflows has had a positive impact on macroeconomic stability and has contributed to keeping effective demand close to productive capacity, which is essential for investment expenditures to rise. On the other, there is evidence that foreign and domestic saving trend to have a high degree of substitutability, perhaps because foreign saving stimulates consumption through its exchange rate and asset price effects. Thus success in keeping the current account deficit within reasonable bounds contributed to the increase in saving rates (see Agosin, 1998; Agosin *et al.*, 1998).

4 SOME POLICY LESSONS FOR DEVELOPING ECONOMIES

The Chilean experience with the management of capital inflows leaves us with several important lessons. For developing countries, the swings in capital flows can be of extraordinary magnitude relative to the size of their economies. Over the last 15 years, LACs have gone from sharp scarcity of external financing during the debt crisis (and the shorter-lived Tequila crisis) to foreign capital abundance during most of the 1990s. Totally passive policy stances will inevitably result in enormous volatility in key domestic macroprices (exchange rates and interest rates) and economic aggregates. By depressing investment, these fluctuations have adverse effects on long-term growth.

Chile has held on to steady policies toward capital inflows and exchange rate management. By and large, these policies appear to have discouraged the more volatile forms of inflows and have prevented excessive exchange rate appreciation. However, in 1996–97, financial capital inflows overwhelmed the capacity of the authorities to limit them with the unchanged intensity of policy tools they were using. Inflows were very large relative to GDP, jumping to what we judge to be unsustainable levels.¹² Then, the Central Bank was unable to prevent a significant real appreciation of the peso, in spite of heavy purchases of foreign exchange. The ensuing real exchange rate appreciation contributed to a widening of the current account deficit that exceeded 5 per cent of GDP. There was clear evidence that a strengthening of the instruments to deal with financial surges had become necessary. Now the economy is experiencing the down side of large inflows: outflows of financial capital began in late 1997 and accelerated in 1998, with an over 12 per cent nominal exchange rate depreciation. However, in response to the active management of inflows in the first years of the 1990s, the accumulated deficit on current account was moderate, the stock of external liabilities was rather low and the share of volatile funds minor. Together with large international reserves, it allows Chile to face the sharp terms of trade shock brought on by the Asian crises.

The following general conclusions can be derived.

(i) *Market-based regulations can be effective and efficient.* Contrary to conventional wisdom, it is possible to discriminate between flows which are stable, of a long-term

¹² It might be reasonably argued that interest rates are too high in Chile, and that this was one of the causes for excessive capital inflows. Unfortunately, there was not much room for lowering interest rates, since the economy had been operating at close to potential output for several years. Nor is it easy to tighten fiscal policy. The need to increase spending on health and education, and professionalization of the government, precludes any significant decline in public expenditure. Regulations on capital inflows allows consistency of those policy targets.

nature, and that do contribute to the country's growth (such as FDI) and those which are basically speculative and lead to excessive domestic volatility. In the Chilean case, the market-based discouragements applied to speculative flows have had no adverse effects on FDI, which has continued to exhibit unprecedented levels even in the aftermath of the Asian crisis.

In order to regulate capital flows, it is best to use instruments which are as non-discretionary as possible. Non-discretionary and (semi) automatic instruments have the advantage that they minimize corruption and evasion. Some evasion is inevitable: any system of discouragements makes it attractive for some operators to attempt to circumvent them. In the Chilean case, it has been necessary to close loopholes as it became obvious that agents were using them. However, circumvention can be kept to a minimum with a well-designed, automatic and transparent system. Controls, of whatever type they may be, are often seen as inefficient and easy to get around, considering the increasing sophistication of transactions on the capital market. Some controls on capital can indeed be clumsy and costly, as was the case in Venezuela in 1994–95. However, as Williamson (1993) points out, statements about the ineffectiveness of controls on capital flows are highly exaggerated. Capital flows regulation tends to be effective as long as it is oriented to the predominance of mid-term forces over short-term fluctuations in domestic markets. The regulation will indeed have a microeconomic cost, but this cost should be balanced against the social benefits in terms of macroeconomic stability, investment and growth.

The objective of sustaining economic growth in the face of volatile capital flows (or volatile export prices, for that matter) requires the use of a battery of policy instruments. In the Chilean case, the combination of tax-like instruments to deter speculative inflows, increasing short-term exchange rate uncertainty, and sterilizing the monetary effects of capital inflow worked well for several years. It should be remembered that reserve requirements alone (or any other policy that increases the cost of external borrowing), while clearly useful, do not deter speculative attacks when large exchange rate changes are anticipated. Thus a flexible policy package, rather than a single rigid policy tool, is desirable when a new capital surge emerges.

(ii) *Level, composition and sustainable uses of flows.* It is important to ensure that the inflow of funds is directed to productive investment; allowing too much to drain off into investments on the stock exchange and consumption of imported goods will create bubbles and imbalances that would be unsustainable (French-Davis and Reisen, 1998). Additionally, fast rising stocks of external financial liabilities tend to be increasingly dangerous.

Opening up the capital account indiscriminately can be very detrimental to productive development and to the welfare of the majority of people, inasmuch as externalities and other imperfections of international capital markets give rise to frequent cycles of abundance and shortage of external financing.

FDI projects of the nature undertaken in Chile are large relative to the size of the economy. In addition, they are lumpy, with periods of heavy investments followed by others in which investment essentially disappears. This is typically an upward stock adjustment problem, which may involve heavy net inflows of FDI over a period of time. It may pay countries that suddenly become attractive to multinationals to try to spread out over time the adjustment to higher stocks of FDI. This can be done through the auctioning of FDI rights or some queuing mechanism for foreign investors. It also suggests that countries in this situation can be selective with FDI,

giving priority to projects with large development payoffs and that allow to capture for the host nation the economic rent of natural resources.

(iii) *Avoiding outlier prices and ratios.* The instability of exchange rates and of macroeconomic indicators that is usually associated with unrestricted openness is always very costly in terms of production and equity. As shown, effective, efficient regulation is possible.

Governments must ensure that capital flows do not generate atypical (outlier) prices or significant distortions of basic macroeconomic indicators, such as interest rates and real exchange rates, the composition of expenditure in terms of consumption and investment, and the production of tradable goods.

The fact that exports are growing vigorously does not justify the assumption that improvements in productivity will offset a lag in the exchange rate, as some economic authorities have repeatedly claimed. If imports are growing steadily, and at a faster rate than exports, there is reason to be concerned, and corrective measures should be taken in time to prevent an unsustainable accumulation of external liabilities.

Governments should not use capital inflows as the main tool for achieving a narrow or extreme objective related to a single domestic economic variable, especially over a long period of time; a case in point is the effort to halt inflation by appreciating the exchange rate. This tends to throw other major variables off balance. In particular, it is very risky to discard implementing an exchange rate policy by remaining bound to a fixed nominal rate. The methods to regulate exchange rate can be extremely diverse; several of them involve some form of an exchange-rate crawling-band, with some type of intramarginal intervention.

(iv) *Flexible selective regulation.* It is not wise to make an inflexible commitment to maintaining an open capital account particularly in light of the crucial importance of macroeconomic stability. This conclusion is emphasized by the disproportionate volume of the international capital markets compared with the small size of recipients' institutions and the serious shortcomings of both markets. As long as market movements depend to a significant extent on short-term transactions and domestic securities markets remain shallow, there will be a risk of great instability in this new modality of linkages with the international economy. In fact, Mexico's and Thailand's recent critical experiences attest to the wisdom of discouraging large financial inflows and increasing accumulation of short-term external liabilities. There is growing evidence that the greater the instability of flows (or deviation from the trend), the lesser the share directed to productive investment.

Finally, understanding better the working of domestic and international financial markets is at the core of the future of the world economy. More pragmatism and more systematic efforts should be at work.

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