

Inter-American Development Bank

Office of the Chief Economist

Working Paper 310

Washington, D.C.

October 1995

The Macroeconomics of Capital Flows to Latin America: Experience and Policy Issues

Michael Gavin, Inter-American Development Bank

Ricardo Hausmann, Inter-American Development Bank

Leonardo Leiderman, Tel-Aviv University

- This is a revised version of a background paper for a seminar on "International Capital Flows: Prospects and Policy Issues" at the Annual Meetings of the Inter-American Development Bank, in Jerusalem, April 3, 1995.

© 1997

Inter-American Development Bank

1300 New York Avenue, N.W.

Washington, D.C. 20577

The views and interpretations in this document are those of the authors and should not be attributed to the Inter-American Development Bank, or to any individual acting on its behalf.

Introduction

After a hiatus of nearly a decade, the flow of international capital to Latin America resumed at the beginning of the current decade. Having adjusted to scarcity, Latin America soon found itself faced with the relatively unfamiliar challenge of managing an abundance of international capital.

Though often characterized as a problem, the renewed flow of capital was also widely and no doubt correctly perceived as an international vote of confidence in the liberalization and stabilization measures undertaken by most Latin American economies in preceding years, and a valuable opportunity to deploy international savings to promote development of the domestic economy. The most serious concerns about the capital flows stemmed not from the inflows themselves, but from the possibility that they might, for reasons internal or external to the recipient countries, abruptly slow or even reverse themselves, thus forcing a potentially abrupt and painful macroeconomic and financial adjustment.

These concerns were proven legitimate during the course of 1994 when, after a series of domestic political shocks in Mexico and a substantial tightening of United States monetary policy, the rate of capital flow to Mexico slowed sharply and toward the end of the year reversed itself. By the beginning of 1995 the reduction in capital inflows became more generalized, contributing to financial instability in much of the region, and major financial crises in Mexico and Argentina, crises that have persisted the recovery of capital flows that has taken place in mid-1995.

This paper reviews recent experience with international capital flows in Latin America, and discusses the policy issues that surround them. The paper is predicated on three basic premises:

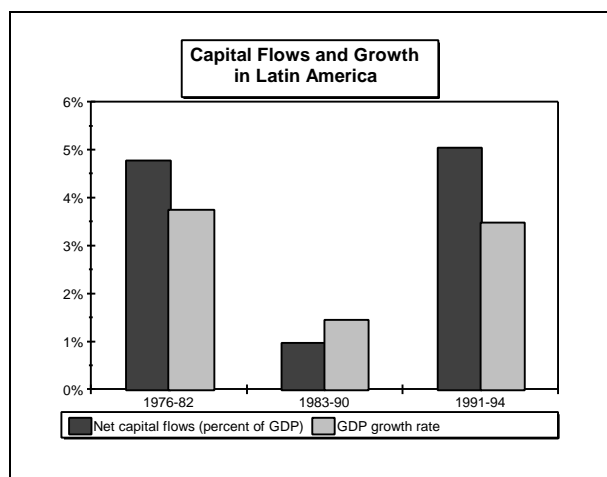
1. capital flows to the region are an important source of macroeconomic disturbance;

2. capital flows are very volatile, and the large fluctuations in these flows are due in substantial part to factors external to Latin America; and,

3. the fluctuations require a policy response. Policy should respond to sudden inflows or outflows of capital. And it can also create institutions and policy regimes to reduce the economy's vulnerability to volatile international capital.

1. Capital flows are important

As illustrated in the following chart, there is a strong empirical correlation between economic growth in Latin America and flows of capital to the region. During the inflows episode of 1976-1982 (henceforth referred to as "the 1970s"), Latin America grew nearly 4 percent per year, while receiving net capital flows of nearly 5 percent of GDP. During the period of capital scarcity that began in mid-1982 and ended around 1990, growth fell to less than 1.5 percent per year, while net capital flows to the region declined to less than 1 percent.



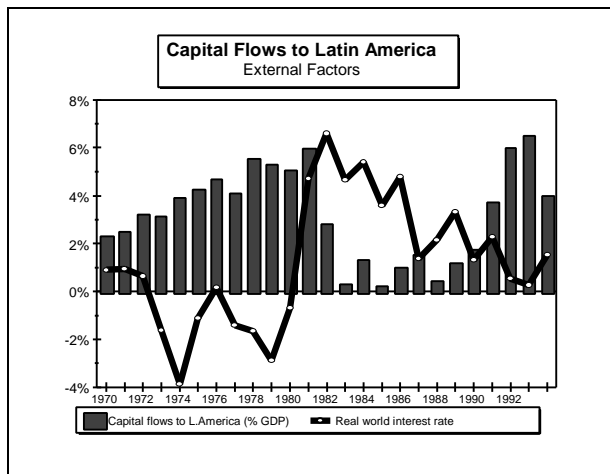
And in 1991-1994, growth of about 3.5 percent per year was accompanied by capital inflows amounting to roughly 6 percent per year.

This relationship is of course in part noncausal, as both growth and capital inflows depend largely upon similar aspects of the policy and nonpolicy economic environment, and the causality that does exist clearly runs in more than one direction, as international investors tend to search for regions in which rapid growth can be expected. But the chart nevertheless illustrates what theory and Latin American experience would lead one to expect: capital inflows can provide a strongly expansionary impulse to the domestic

economy, and sharp reductions in the rate of inflow can be strongly contractionary, at least in the short run.

2. *Capital flows are volatile and in large part exogenous to the region.*

The following chart shows the recent behavior of net capital flows to Latin America since 1970, and compares it with movements in world real interest rates. Two lessons emerge from this comparison. First, the flow of capital to Latin America is very volatile. From a peak of about 6 percent of GDP in 1981, net capital flows to Latin America abruptly dropped to

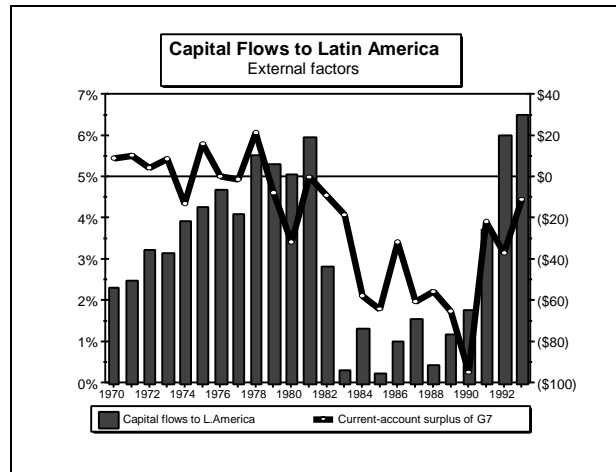


roughly nil in 1983, and stayed close to that level until around 1990, when they increased almost as abruptly to about 4 percent of Latin America's GDP in 1991 and 6 percent of GDP in 1993 and 1994.¹

Second, the flow of capital to Latin America is very largely determined by developments in the world economy that are essentially exogenous to Latin America. The above chart shows that net flows to the region are highly correlated with the world interest rate, over which economic developments in Latin America have little influence. The turning point of each major phase of the capital-flows cycles experienced since the 1970's can be correlated with a substantial movement in world interest rates.²

A comparison of capital flows to Latin America and the current account surplus of the major industrialized economies also highlights the link

between



fluctuations in the availability of international capital and realized capital flows to the region. The chart shows that capital flows to Latin America were low in the 1980's, when the large industrial countries were running substantial current-account deficits, and the surge of inflows to Latin America during the 1990s was associated with a sharp reduction in the G7 current-account deficit. The most plausible interpretation of this chart is that shifts in the industrial countries' saving-investment balance are reflected in fluctuations in realized capital flows to Latin America (and, of course, elsewhere).

This does not mean that capital flows are unaffected by the domestic policy environment. In Latin America during the 1990s, countries that liberalized aggressively, reduced inflation, and maintained or created an open trading and financial system received larger capital flows than those that did not. It does mean that, almost whatever the domestic policy environment, international capital flows are likely to remain an important mechanism through which to the industrialized economies are transmitted to Latin America, and that those shocks will necessarily require important macroeconomic adjustments, for which the region needs to prepare.

3. *Capital flows are a policy issue*

A sudden shift in the availability of external finance will require important macroeconomic adjustments. A reduction in capital flows will typically generate an increase in domestic interest rates and a decline in asset values. This will help secure the reduction in

domestic expenditure that is required for consistency with the new, lower supply of foreign finance, but it will also have adverse implications for domestic investment, and may generate a sharp contractionary impulse to the economy. The reduction in capital flows will also require a depreciation of the real exchange rate, with implications for employment and production in the tradeables and the nontradeables sectors, and creating the need for costly reallocations. Through its effect on the exchange rate and the balance of payments, the shock to capital flows will affect domestic prices and monetary aggregates, with potentially adverse implications for inflation.

Many of these adjustments are normal and desirable aspects of adjustment to the changed external environment. Policy makers cannot, however, afford to assume that adjustment will be trouble-free. In the world, adjustment to sharp fluctuations in capital flows is a policy issue because:

P International financial markets are incomplete, and do not provide insurance against possible risks associated with the fluctuations in the magnitude of the flows.

P International financial markets may be subject to "fads", "bubbles", or "contagion" effects, in which international investors make sudden revisions about prospects for an economy that are unwarranted by underlying fundamentals. Because many of these "fundamentals" depend upon the degree of an economy's access to international capital markets, there is the possibility of multiple equilibria - sudden shifts in market sentiment can be self-fulfilling.

P Labor and product markets may be subject to externalities that distort the process of adjustment to changes in capital flows, making the private response suboptimal.³

P Domestic financial markets may be subject to information or policy-generated imperfections that cause it to intermediate capital inflows suboptimally, thus increasing the economy's vulnerability to subsequent reductions in the rate of inflow.

P Sharp fluctuations in international capital flows may interfere with the effectiveness of other government policies, including attainment of price stability and management of aggregate demand.

These considerations raise two related types of policy problem. The first is the formulation of appropriate policy responses to increases and decreases in the flow of international capital as they materialize: for example, should fiscal policy expand or contract when international capital becomes more scarce? The second is the design of appropriate institutions and policy regimes to reduce the economy's vulnerability to fluctuations in international capital flows, and to minimize adverse effects of their volatility on the real economy. Here we might ask: what exchange-rate regime provides a better adjustment to sharp changes in the availability of foreign capital? Can the regulatory environment within which domestic and international investors operate affect the magnitude of such shocks, and their impact on the economy?

The remainder of the paper takes up these and related issues in more detail. Section II lays out the points of macroeconomic contact between international capital flows and the macroeconomy, with the aim of highlighting those aspects of the transmission mechanism that create policy problems, and outlining ways in which policy can alleviate the problems. We also examine the recent historical experience of Latin America with capital inflows, focusing on the most recent inflows episode and the lessons that emerge from the response to the reduction of those flows toward the end of 1994. Section III brings lessons from these discussions to bear on a discussion of specific policy questions surrounding the flows.

II. Capital flows and the macroeconomy

In this section we outline the ways in which capital flows and policy interact to determine macroeconomic outcomes, in order to highlight policy issues that are discussed in the subsequent section. The discussion is organized around a simple schematic approach that is summarized in chart 1, below.

We begin with a discussion of sources of shocks to the availability of international capital. We then

discuss how such shocks and policy toward capital inflows interact to determine the magnitude and composition of the flows. Next we discuss how the realized capital inflows interact with monetary, exchange-rate and fiscal policy to determine macroeconomic outcomes such as: whether the capital inflows finance reserve accumulation or current-account deficits; whether the current-account deficits that do emerge are generated by increased investment or lower savings; and other macroeconomic consequences of the flows, including effects on money and prices, on interest rates and asset prices, and on growth and real activity.

This diagram does not, of course, fully capture all the relevant macroeconomic interrelations, and variables in the upper part of the diagram are not in general exogenous to those listed in the lower part; for example, exchange rate intervention and sterilization policy may well affect the magnitude of the change in capital flows to which the economy is subject. But the framework does help to clarify certain important channels of influence, and in any event provides a guide for the discussion that follows.

1. Shocks:

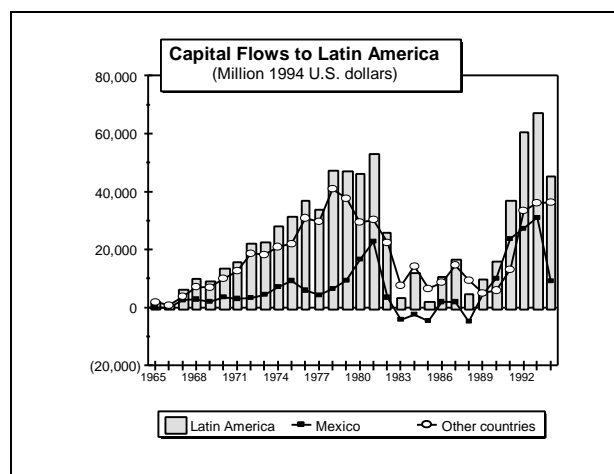
Observed fluctuations in the rate of capital inflow or outflow may be due to either internal or external factors. Domestically-generated shocks may come from dislocations to the real economy, such as a transitory productivity shock or a sudden shift in macroeconomic policy that generates an abrupt change in the balance between domestic savings and investment. Domestically-generated shocks may also come from financial markets, such as when news about political outcomes alters domestic and foreign investors' confidence in the economy and induces capital inflows or capital flight.

External factors can affect an economy directly, such as when interest rates in the world economy change, thereby increasing or reducing the relative attractiveness of domestic assets. They may also be the result of contagion, or bandwagon effects, such as when adverse news about one country's creditworthiness alters international investors' perceptions of others'.⁴

In the 1990s, external shocks have been an important determinant of capital flows to Latin America, and other emerging-market economies. Arguably the most important of these factors has been changing cyclical conditions in the major industrial countries, which largely determine world interest rates and economic activity. The correlation of capital flows to Latin America with world interest rates and with the savings-investment balance of the major industrial countries has already been noted. Low world interest rates affected the attractiveness of investment in Latin America both directly, and by raising the creditworthiness of those many emerging-market economies that are net debtors.

Fluctuations in international capital flows may also arise from changes in the portfolio preferences of international investors, which may in turn be caused by changes in the regulatory environment in which these investors operate, or in information technologies. Shocks to foreign investment may also result from actual or anticipated changes in regional trade arrangements; for example, the North American Free Trade Area may have created a substantial incentive to invest in Mexico to produce for the North American market.

Whatever their cause, shocks to the availability of international capital can be very big, relative to the economies of Latin America. The following chart shows recent fluctuations in capital flows to Latin America.



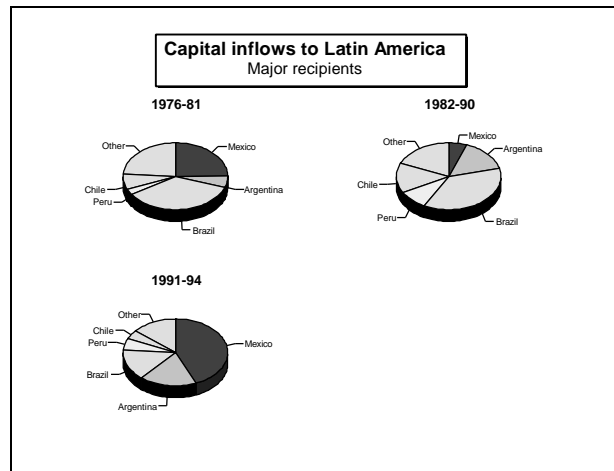
It reveals important similarities to and differences from the capital inflows episode of the 1970s. First,

the magnitude of the capital inflows in 1993 and 1994 were even larger than they had been at their peak in the early 1980s. The recent surge in the flow of capital was also substantially more abrupt than in the previous episode, though it appears to have lasted for a shorter period of time.

Also visible in the above chart is the fact that, in the years leading up to the 1982 onset of the debt crisis, net capital flows to countries other than Mexico had been declining for some years; this highlights the fact that the debt crisis of the 1980's was for many countries a crisis generated as much by domestic capital flight as by inappropriately high levels of net borrowing - a fact that distinguishes the most recent episode from the earlier one.

The above chart also illustrates that the inflows episode of the 1990s is to a very large extent a story about Mexico, and to a lesser extent Argentina (not shown in the chart.) Mexico's experience with international capital markets in the 1982-1989 period of capital scarcity was harsher than typical; in many of those years Mexico experienced net capital outflows, unlike the rest of the region.

But after that experience, renewed inflows began earlier in Mexico than in most of the region, presumably because Mexico resolved its debt problems, stabilized inflation, privatized aggressively and liberalized its economy relatively early. The recovery of international investment in Mexico was dramatic, and in the early years of the inflows episode, flows to Mexico accounted for well over half of the capital flows to the region, greatly in excess of Mexico's share in the regional economy.

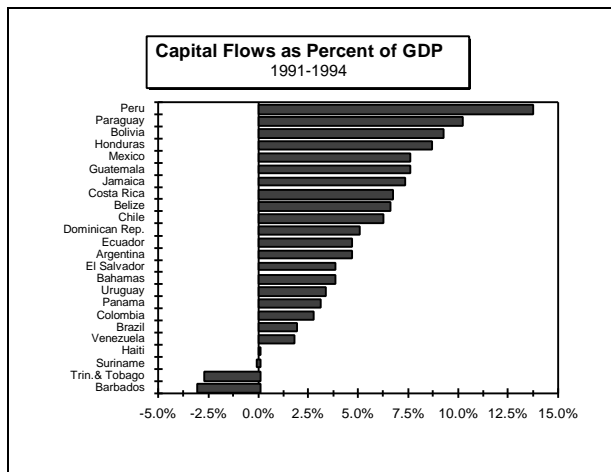


For the 1991-1994 period as a whole Mexico accounts for nearly 45 percent of the inflows, despite the sharp decline in flows to Mexico during 1994. Argentina accounts for another 18 percent of the inflows, somewhat larger than her size in the regional economy. Taken together, Mexico and Argentina account for over 60 percent of the net flows to the region, while Chile and Brazil - heavy borrowers during the 1970s - figure much less prominently during the 1990s.

Measured relative to the size of the recipient country's economy, a somewhat different picture emerges. Relative to GDP, Peru emerges as the largest recipient of capital flows, with inflows amounting to roughly 13 percent of GDP during the 1991-1994 period. Mexico still ranks very high, with inflows of nearly 8 percent of GDP, but inflows to Argentina are seen to average only about 4.5 percent of GDP, not much more than the average for the continent.⁵

Of the larger countries, Brazil, Colombia, and Venezuela have experienced capital inflows much smaller, in comparison with their size, than other major countries in the region. In Brazil and Venezuela, it seems that macroeconomic turbulence - stabilized in Brazil during 1994 and still ongoing in Venezuela - made international investors wary. Colombia, on the other hand, has made substantial efforts to insulate its economy from volatile

international



flows, and the relatively low rate of flow into the country during 1991-1994 may be seen as evidence that the authorities were at least partially successful in doing so.

This comparison illustrates the important point that policy and external shocks are not independent, but rather interact in the determination of capital inflows. In Latin America during the 1990s, nearly all countries participated in the capital inflows associated with low world interest rates, but countries that were on good terms with their international creditors, that had stabilized inflation and brought fiscal deficits under control, and that maintained open trade and financial regimes tended to receive more international capital than countries that had not. The relatively low rate of capital flow to Chile and Colombia despite generally good macroeconomic fundamentals is limited evidence that attempts to moderate the rate of capital inflow may have some success, at least in the short run.

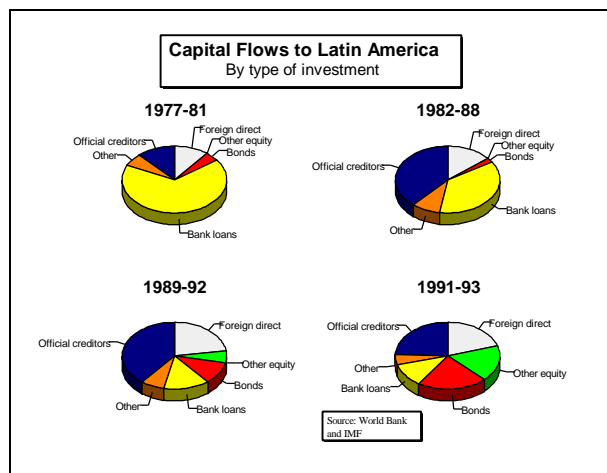
2. Composition of capital flows

The financial instruments used to effect the transfer of capital will have a substantial impact on the sharing of risk between residents of the recipient country and international investors, and may also have a significant impact on the volatility of international capital flows to which the economy is subject. Volatility is likely to be much higher if flows are of a short-term, purely speculative nature than it might be if they primarily reflect foreign direct investments that are presumably guided by medium or long-term

capital

fundamentals. This is particularly true of short-term debt instruments, the principal of which becomes payable frequently. Equity investment is liquid, and can be sold by international investors upon short notice, but owners of equity bear much of the price risk associated with a generalized flight of capital from the economy. The composition of the flows also determines their degree of sensitivity to interest-rate differentials.

The mechanisms through which capital was channeled to Latin America differed dramatically in recent years from that which typified the late 1970's and early 1980's.



As the above chart illustrates, commercial bank lending was the dominant form of international intermediation during the 1977-1981 period, accounting for roughly two-thirds of total flows to Latin America.

In sharp contrast, commercial bank lending fell to barely more than 10 percent of the total in the 1991-1993 period, while foreign direct and equity investment rose to nearly 40 percent, and international bond issues increased to over 20 percent of the total.

These changes have important implications for the management of capital-account shocks. The much higher share of equity investment means that foreign investors are exposed more directly to and share more completely in country risk than would be the case if commercial-bank lending were still the dominant form of intermediation.⁶ It has been

estimated that roughly 20% of the Mexican stock market's capitalization was foreign-owned at the beginning of 1994: thus, of the more than \$140 billion reduction in the dollar value of the stock market that occurred between January 1994 and early March 1995, foreigner investors must have absorbed something approaching \$30 billion.

At the same time, management of international liquidity or solvency problems may have become more difficult than it was in the 1980s, as there is at present no obvious counterpart to the bankers' committees that were formed in that period to negotiate with countries over the terms of debt rescheduling.

Policy can affect the composition of capital inflows in several ways. First, sustainable and credible economic policies are likely to result in less volatile capital flows, as international investors will be more willing to make relatively irreversible commitments to the economy. Second, tax and regulatory policies can be designed to reduce the attractiveness of short-term, speculative inflows, relative to those investments that imply a larger degree of commitment to the recipient economy.⁷ In several countries, for example, there are taxes and restrictions on short-term foreign borrowing. And finally, various microeconomic policy measures can affect the attractiveness of the climate for foreign direct investment.

3. Balance of payments adjustment

Net capital inflows must by definition be matched by central bank reserve accumulation and/or increased current-account deficits, while outflows must necessarily be accompanied by a loss of reserves and/or movement of the current account toward surplus. Domestic macroeconomic policy play an important role in determining the pattern of balance of payments adjustment to sudden shocks to the capital account. The exchange rate regime is, of course, fundamental here.

Under fixed exchange rates the exchange-market intervention required to defend the parity in the aftermath of a positive shock to the capital account will lead to reserve accumulation in the early stages

of an inflows episode, while current-account deficits are likely to grow as the episode progresses. In the polar opposite case of a pure float, in which there is by definition no central bank intervention, any shock to the capital account must have as its counterpart an equal and opposite change in the current-account balance. In the intermediate and more realistic case of flexible exchange rates with intervention, the amount of reserve accumulation is a policy choice. The more aggressive is the reserve accumulation, the more thoroughly will the authorities insulate the nominal exchange rate from pressures generated by the capital flows.

Intervention will have important effects on the short-run adjustment to capital-account shocks, as can be seen most clearly by contrasting the short-run adjustment under fixed exchange rates with that which would occur under a pure float. In the former regime, the capital inflows will lead to immediate reserve accumulation which, with incomplete sterilization, will generate an increase in the domestic monetary base. This increase in liquidity will drive down interest rates and generate an expansion of bank credit generating, over time and in the context of an output boom, the increase in domestic consumption and investment that is required to make the current account adjust to the new and higher availability of external finance. The opposite would, of course, occur after a sharp decline in the rate of capital inflow.

Under flexible exchange rates with no intervention, a shock to the capital account generates, by definition, no change in central bank reserves and creates, instead, exchange-rate appreciation. This appreciation creates through various mechanisms a current-account deficit, in the context of depressed demand for domestic production.

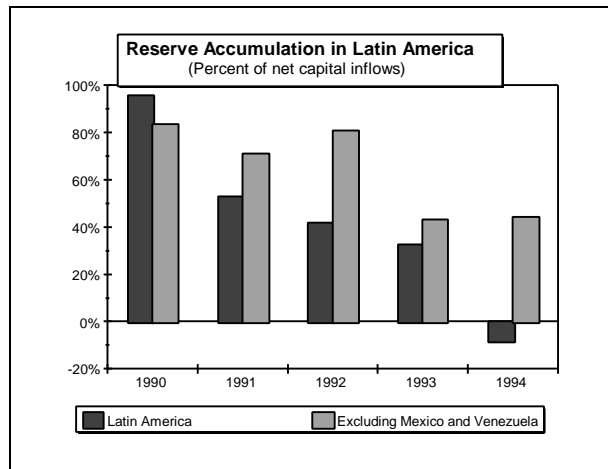
In intermediate cases where exchange-market intervention is not completely dictated by the requirement to defend the exchange rate, nor ruled out by definition, the short-run response of the macroeconomy will depend upon the authorities' intervention behavior, which will, in turn, depend in part upon how their reserve position compares with that which they consider optimal. If reserves are low

at the beginning of an inflows episode, central banks may be expected to accumulate reserves in its initial stages, even if not required to do so by a formal exchange-rate commitment. Over time, the tendency to accumulate reserves may decline.

The optimal degree of reserve accumulation also depends upon prospects for a reversal of the shock to the capital account. If there is a high probability that the capital that is currently flowing into the economy will want to leave in the near future, then it would be prudent to seek a higher level of reserves. Thus, when capital inflows are the result of very short-term and speculative investments, aggressive and prolonged intervention may be called for.

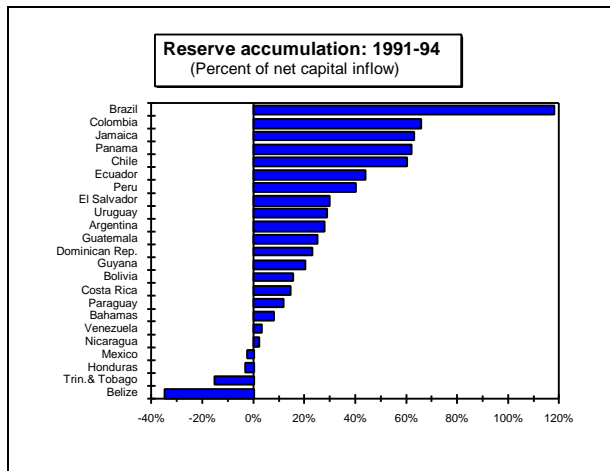
The capital inflows episode of the 1990s was accompanied by very substantial reserve accumulation, significantly larger than was observed during the 1970s. This was particularly true in the first years of the episode. In 1990 the accumulation of international reserves nearly matched the (still relatively small) net capital inflows, with the implication that the latter had no effect on the current account.

As the episode progressed, evidence of "reserve accumulation fatigue" materialized. For the region as a whole, the share of reserve accumulation in total capital inflows fell to 50 percent in 1991, 40 percent in 1992, and about 30 percent in 1993, with the implication that the capital inflows were associated with growing current-account deficits. In 1994 the region's reserves actually declined, despite continued inflows.



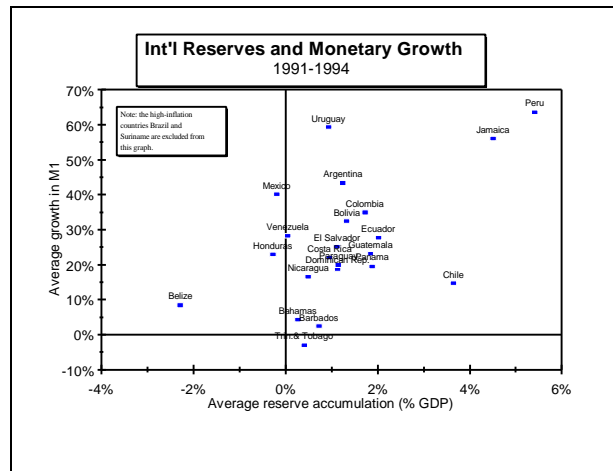
This sharp decline in the rate of reserve accumulation is largely attributable to developments in Mexico and Venezuela, in which countries reserves were run down in 1994 to cope with a macroeconomic and financial crisis associated with large capital outflows.⁸ In other countries reserve accumulation averaged about 75 percent of the capital inflows during the 1990-1992 period, declining to about 40 percent in 1993 and 1994.

Brazil accumulated reserves most aggressively during the recent inflows episode; indeed, its reserve accumulation totaled almost 120 percent of total capital inflows during the period. Reserve accumulation also accounted for a large proportion of capital inflows in Chile, Colombia, Ecuador and Peru. As noted above, reserve accumulation was quite low for Mexico and Venezuela, though this is largely attributable to events that transpired in 1994. In particular, in Mexico the central bank accumulated reserves on a large scale during the first years of the inflows episode, but lost those reserves and more during 1994, when it responded to a sharp reduction in the rate of capital inflow by intervening in the foreign exchange market to maintain the peso within the limits of the band, while at the same time sterilizing the consequent reserve losses.



During a period of capital inflows, as reserves are accumulated, the central bank will be faced with the question whether to sterilize the change in reserves, or instead allow it to affect the domestic money supply. If the money supply is allowed to adjust, (risk-adjusted) domestic interest rates will be driven toward world rates, the economy will adjust to the flows as described above, and the incentives for further capital flows will be reduced. Under sterilization, the macroeconomic adjustment to the capital inflows may be postponed, but because domestic interest rates will not be driven to world rates, the magnitude of the capital inflows may increase. The resultant quasi-fiscal losses, as the central bank issues high-interest domestic paper in exchange for low-interest reserve assets, can be substantial. Partly for this reason, attempts to sterilize the impact of large capital inflows have often been abandoned, or complemented in short order by attempts directly to reduce the rate of short-term capital inflow.

In Latin America during the 1990s, there is some evidence that countries found it difficult or undesirable to sterilize fully the reserve accumulation that was undertaken. As the following chart shows, countries that accumulated significant reserves tended also to experience rapid monetary growth. The relationship is, however, not particularly tight, suggesting that there is some scope for sterilization over the time period in question.



Chile

stands out for having accumulated reserves in the amount of nearly 4 percent of GDP per year, while managing to maintain relatively moderate monetary growth.

4. Mechanisms of current-account adjustment

Under both fixed and flexible exchange rates, the current account will generally adjust at some point to a sustained capital inflow. Two key mechanisms are responsible for bringing about the movement toward current-account deficit in response to capital inflows.⁹

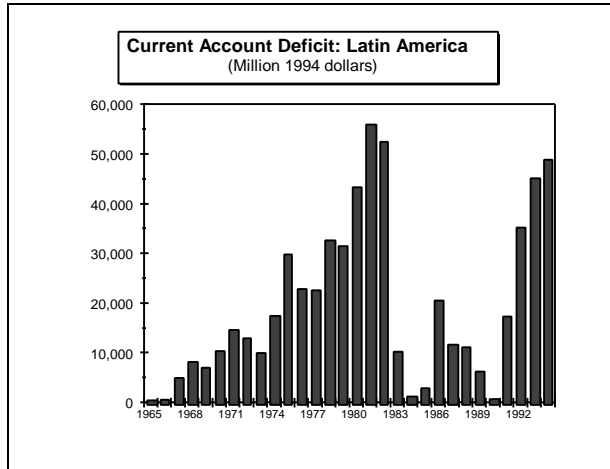
‡ The inflows will generally create a reduction in domestic interest rates and an increase in asset prices, thus promoting an increase in expenditure relative to production. Under fixed exchange rates this is largely due to an expansion of liquidity and an associated increase bank lending.

‡ They will also create pressures for real exchange-rate appreciation. Under flexible exchange rates this is caused by nominal exchange-rate appreciation. Under fixed exchange rates the real appreciation is created by domestic inflation. This may take longer to materialize than under flexible exchange rates, but in the long run the real exchange rate will respond in much the same way.

These responses are immediately apparent in Latin America during the 1990s.

Current account and the real exchange rate

As the following chart indicates, the current account in Latin America moved dramatically toward deficit as capital inflows surged in the 1990s.



As noted above, the rate of reserve accumulation during 1991-1994 was substantially larger than in the 1970s, with the result that, though the capital inflows were larger in the more recent period, current-account deficits in the region as a whole have been somewhat smaller than they were in the previous inflows episode. They have nevertheless been large in aggregate.

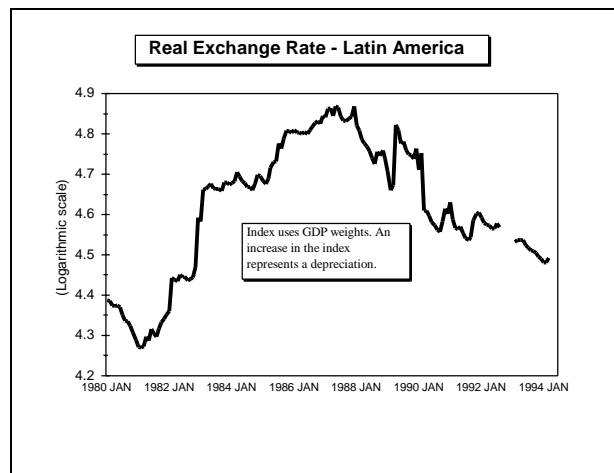
Here, however, the regional average obscures important differences among countries. The attached set of charts shows fluctuations in capital flows and current-accounts for the eight largest countries in Latin America. Most of these countries have experienced somewhat smaller current-account deficits than in the previous inflows episode.

It is notable that Brazil, Chile and Ecuador have experienced surpluses or small deficits in recent years, in very sharp contrast to the large deficits registered in the 1977-1981 period, and while Colombia and Peru have recently experienced substantial current-account deficits, they remain significantly lower than in the previous episode.

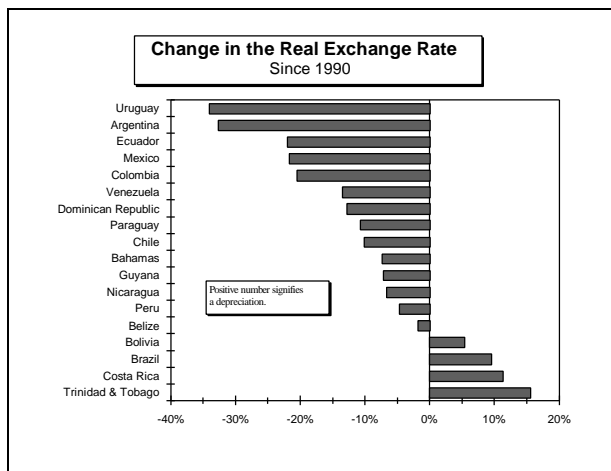
In Argentina and Mexico, however, external deficits are very large, in absolute amount and compared with those that the countries experienced in the years leading up to the debt crisis. For Mexico, the 1994 current account amounted to about 8 percent of GDP

- substantially larger than in the years leading up to the debt crisis.

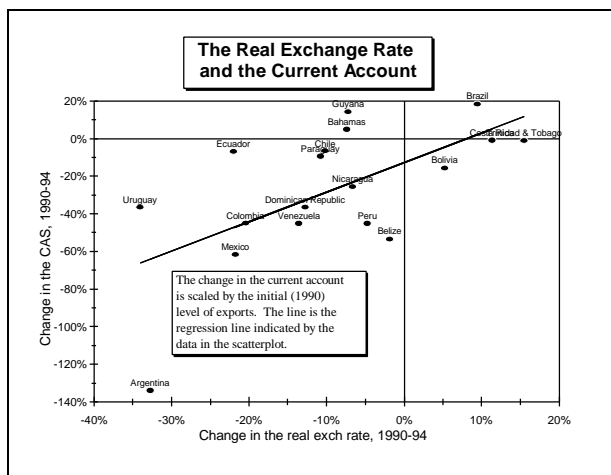
The large current account deficits were, in most countries, accompanied by substantial appreciation of the real exchange rate. For the region as a whole the real exchange rate appreciated substantially in comparison with its very depreciated levels of the mid-1980's, but remained considerably more depreciated than in 1981 and 1982. For the region as a whole, there is a clear empirical association between the availability of international capital and the real exchange rate. The real exchange rate was very appreciated during the early 1980's, when international capital was plentiful, depreciated dramatically when the flows of international capital slowed in the 1980's and has become increasingly appreciated during the years of international capital abundance in the early 1990s.



Again, the behavior of this regional average obscures important differences among countries. The real exchange rate appreciated considerably during the inflows episode in Argentina, Colombia, Ecuador, Mexico, and Uruguay.¹⁰ Chile experienced a smaller exchange-rate appreciation, and in Brazil the exchange-rate depreciated until the mid-1994 stabilization plan, after which it began to appreciate strongly. Note that substantial real exchange rate appreciation was experienced by countries operating under fixed as well as under flexible exchange rate regimes.



It may be quite misleading to attribute the exchange-rate appreciation solely or even primarily to the capital flows; in many countries the timing of the exchange-rate appreciation and associated changes in the current-account match the timing of an inflation stabilization more closely than that of the capital inflows. But whatever the causality, there is a clear correlation between changes in the real exchange rate and changes in the current-account balance, as illustrated in the following chart.



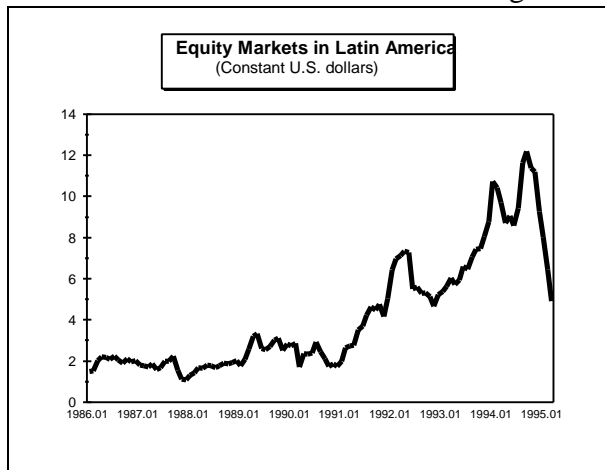
While this association between the current account and the real exchange rate does not establish causality, it does suggest strongly that the dominant shock to the current account was not a supply shock to the current account.

Most countries in the region experienced deteriorations in the current account during the 1990-1994 period. But the deteriorations were substantially larger in countries where the real

exchange rate appreciated substantially than in countries where it did not.

Asset prices

Along with appreciation of the real exchange rate, recipients of capital inflows in the 1990s experienced reductions in interest rates and booming asset prices.



The above chart documents the behavior of the stock market in four large Latin America economies, Argentina, Brazil, Chile and Mexico.¹¹ In real terms, this measure of equity prices stagnated during the 1980s, when international capital was scarce, and exploded during the inflows episode of the 1990s, rising by a factor of six over the course of only four years. All major countries except Venezuela¹² experienced very large increases in equity prices during the inflows episode.

The chart also shows that what capital markets give, they can also take away; with the abrupt decline in the rate of capital inflow at the end of 1994, equity prices plummeted in Latin America. Declines have been widespread; most countries experienced substantial declines in domestic equity prices after the Mexican financial crisis. Here, however, it is noteworthy that Chile and Colombia have been affected to a much smaller degree than have been Argentina, Brazil, and Mexico itself.

	1990 - Dec. 1994	Dec. 1994 - Mar. 3, 1995

Argentina	320%	-35%
Brazil	489%	-32%
Chile	345%	-15%
Colombia	575%	-1%
Mexico	481%	-49%
Venezuela	5%	-5%

This suggests that some aspect of these former countries' policy regime provided insulation from the financial shock. It is, unfortunately, difficult to say precisely which policy was responsible, for Chile and Colombia differ from Argentina in at least a couple of ways:

P Their exchange rate policies are less rigidly tied to the achievement of specific nominal outcomes, and both countries have demonstrated a recent willingness to allow the nominal exchange rate to adjust in response to capital inflows;

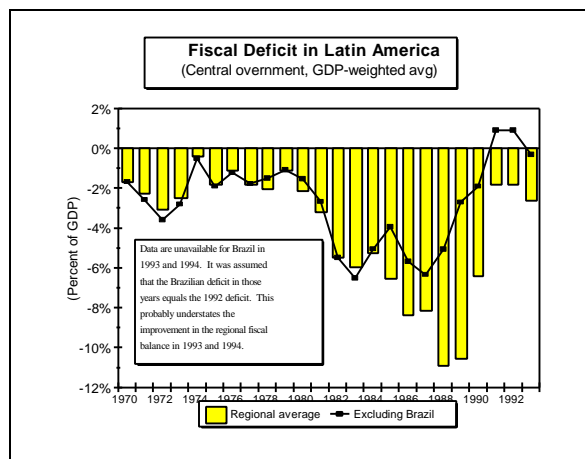
P Both countries have made serious attempts to reduce the inflow of short-term capital during the inflows episode, and both countries sterilized roughly 60 percent of the inflows that did emerge. (Brazil sterilized aggressively during the 1991-1994 period as well, but the Brazilian policy regime changed dramatically with the mid-1994 stabilization.)

P Both countries recently experienced a significant and favorable shock to the terms of trade.

These financial-market effects may create an important asymmetry between capital inflows and outflows. Large inflows are associated with increasing asset prices and ample domestic liquidity, which may lead to inappropriate lending decisions, but will not create a crisis. Outflows, on the other hand, are often associated with declining asset prices and, under fixed exchange rates, may require a sharp contraction of the domestic money supply and, therefore, of commercial bank lending. Both of these can contribute to instability in the domestic banking system. In this environment, associated fears - whether rational or exaggerated - about the safety of the banking system can be highly destabilizing and, if they create a full-blown banking crisis, may undermine the government's fiscal and monetary policies.¹³

Public vs. private adjustment

It is of major importance that the current-account deficits that emerged in Latin America in the 1990s occurred despite a substantial improvement in fiscal performance in the region.



As the above chart illustrates, central governments in the region registered an average fiscal deficit of more than 10 percent of GDP in 1988 and 1989. This was cut in half during 1990, and in 1991-1993 the deficit averaged less than 1 percent of GDP.¹⁴

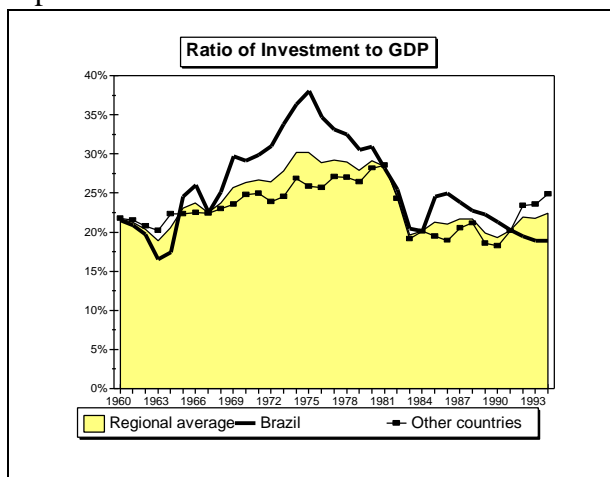
There was also significant fiscal convergence during this period; the countries that made the most dramatic improvements in fiscal performance in the 1990s were the ones that began with the largest fiscal imbalances. This means that very few countries in Latin America had substantial deficits in the 1990s, and that the current-account imbalances that emerged were predominantly the result of a growing gap between private savings and investment. We shall return to this point below.

Saving and investment

A key question for policymakers is how the current account response to a change in capital flows is effected; through changes in saving or in domestic investment. To the extent that domestic savings and investment fall short, for various reasons, of the socially optimal level, policymakers may be concerned to ensure that savings does not fall too dramatically during periods of capital inflow, and that investment does not fall excessively when international capital becomes scarce.

In practice, capital inflows to Latin America have been associated with both increased investment and decreased savings, and conversely, while the reduction in inflows during the 1983-1990 period was associated mainly with a decline in private and public investment. After the very sharp decline in capital flows to Latin America that began in 1982, the current-account adjustment was achieved in very large part through a decline in both public and private investment, and investment remained extremely low by historical standards until well into the most recent inflows episode.

As the capital inflows of the 1990s began to make themselves felt in Latin American economies, domestic investment did recover from its extremely depressed levels of the late 1980's.



As the above chart illustrates, in the region as a whole (real) investment rose from less than 20 percent of GDP in 1989-1990 to over 22 percent of GDP in 1994. Setting Brazil aside, investment rose more dramatically, from roughly 18.5 percent in 1989-1990 to nearly 25 percent of GDP in 1994.

While an increase in domestic investment was thus an important cause of the current-account deficits that materialized during the most recent capital inflows episode, savings also declined in most countries. The declines in national savings began at different times in different countries, and have been very pronounced in several countries.

The causes of these often very sharp declines in private savings are not fully understood. The decline

in saving may have been due to wealth effects of the booming equity, land, and housing markets associated with the capital inflows. They may have been due to the relaxation of financing constraints attributable to the expansion of domestic bank credit caused associated with the monetary consequences of the inflows. Or they may have been due to an excessively optimistic view by domestic consumers of prospects for the future. But whatever their cause, the consequence was a substantial movement of the current account into deficit, thus utilizing the increased supply of international financing.

When current account deficits are associated with large fiscal deficits, there is little dispute about the desirability of reducing such deficits by bringing the government's budget toward balance. However when, as in the 1990s, the large current account deficits are associated with an imbalance of private saving and investment, the effectiveness and desirability of using fiscal or other policies to raise national saving are a matter of some dispute.

First, whether current account deficits generated by movements in private saving and investment pose a policy problem is itself a matter of substantial dispute. On the one hand, it can be argued that individuals know better than do governments how best to arrange their intertemporal affairs. On the other hand it is argued that the costs of the macroeconomic and financial turbulence that ensue when external deficits - private or public - become unfinanceable are frequently socialized, creating a public interest in ensuring that the private as well as the public sector remain safely within their intertemporal budget constraints.

Second, instruments for affecting private savings and domestic investment are notoriously scarce, unreliable, and costly to use. Prudential regulation of the banking system, to discourage inappropriately risky lending by banks that benefit from implicit or explicit deposit insurance may be called for, as are measures to prevent the increased domestic liquidity generated by rapid capital inflows from translating into excessively rapid growth in bank credit.

But the major instrument for affecting national savings is fiscal policy. Unfortunately, there is good theoretical and some empirical support for the idea that private savings may adjust to partly offset changes in taxes, particularly if these are perceived to be transitory. This means that large changes in tax policy may be required to offset swings in capital flows, which is not only politically and administratively difficult, but also inefficient on public-finance grounds. Similar considerations apply to government spending. National budgets are more than just levers of macroeconomic policy; they are the chief means through which important social policies that determine the health, education, and national defense of the domestic population are realized. Subjecting these programs to radical fluctuations in response to movements in international capital flows be necessary, but it is not costless.

III. Policy issues

With this brief overview of the basic macroeconomics of international capital flows as a backdrop, we proceed to a discussion of policy issues raised by recent Latin American experience. This section focuses on a selected set of broad issues and policy strategies rather than a comprehensive and detailed analysis of operational issues surrounding the policies toward international capital flows. An appendix to the paper provides a more detailed discussion of issues surrounding specific policy instruments.

Prospects and immediate policy response

The sharp reduction in capital flows to the region that occurred in the immediate aftermath of the Mexican crisis has eased. To several countries in the region, and many other emerging market economies outside it, capital inflows are once again large enough to pose the policy challenges that materialized in the 1990-1994 period. One, though not the only, reason for the renewed flows to the region is the substantial decline in US interest rates that took place in the early months of 1995; the development thus highlights once again the region's exposure to fluctuations in world interest rates.

Despite the generalized recovery of capital flows to much of the region, flows to Argentina, Mexico, and

Venezuela have remained sharply lower. Even there, though, there are some signs of recovery. For example, the government of Argentina has successfully re-entered international financial markets, as have some Mexican borrowers, including Bancomex, Nafinsa, and the Government of Mexico and also a few from the Mexican private sector. However, in almost all cases interest-rate spreads have been fairly high, and loan durations short.

What are the lessons of this recent experience?

v First, the policy problem that faces countries in the region is not primarily one of managing a long- or medium-term scarcity of capital flows, but rather coping with their highly volatile nature. Large cross-border capital flows are likely to remain an important feature of the international financial landscape for the foreseeable future, but those flows are likely to remain highly volatile.

v Second, the "Tequila effect" of the Mexican crisis on several countries in the region during the early part of 1995 illustrates that "contagion effects" are real; a country may experience shocks to the capital account as a result of developments in other borrowing countries, despite the fundamental soundness of its own policy framework. This creates vulnerabilities that require careful management. But the recent experience also shows that markets eventually make distinctions that reflect underlying fundamentals, and if a country can weather temporary financial storms with its macroeconomic policies and other fundamentals intact, international investors eventually respond accordingly.

The danger posed by volatile capital flows is that, in a fragile macroeconomic environment, even transitory capital-account shocks may create lasting disruptions. These disruptions could even be large enough to validate the initially exaggerated fears about a country's creditworthiness. The challenge, therefore, is to construct policy regimes that create a robust and "shock proof" economy capable of withstanding temporary shocks to international capital flows, while at the same time maximizing the developmental impact of international investment. We now consider

five aspects of this challenge: exchange rate policy, debt management, fiscal policy, regulation of capital inflows, and the role of the international financial institutions.

Policy regimes for a world of volatile capital flows

1. Exchange-rate policy

On this issue, no strong consensus has emerged from the recent experience. Advocates of fixed exchange rates note that the Mexican devaluation was followed by a major crisis, while supporters of exchange rate flexibility point toward the deep and growing macroeconomic costs of the monetary contraction generated by the "classical" balance of payments adjustment that has been enforced by the Argentine convertibility plan. Clearly, neither fixed nor flexible exchange rates can eliminate the macroeconomic pain created by a sudden loss of international confidence. Can intelligent choice of exchange-rate regime prevent such a loss of confidence? More generally, what are the lessons of recent Latin American experience for exchange rate management in a world of volatile capital flows?

First, recent experience highlights the importance of *sustainability* of the exchange-rate regime adopted by a country. While there is room for dispute about the insulating properties of alternative exchange-rate regimes, there is little doubt about the destabilizing consequences of being forced to abandon a regime that proved insufficiently robust to survive a large shock, from the capital account or elsewhere.¹⁵ Thus, a case for the desirability of fixed exchange rates must rest first upon a reasonable expectation that the regime will be robust enough to withstand the major shocks to which it will eventually be subjected.

In this context two issues arise. The first is the need for a forceful fiscal response to protect a fixed exchange rate system after a sudden reduction in capital flows. Here, the recent experience of Argentina is revealing. The Argentine exchange-rate system did not weather the 1995 shock automatically and painlessly. Protecting the system from collapse required a determined fiscal response - tax increases and spending cuts both - that were not only

procyclical but also politically very costly. These actions were politically viable in Argentina because of the strong popular commitment to the convertibility law, grounded in the perception that the system is necessary in Argentina to avoid the inflationary experiences of the past. In countries where public support for the exchange-rate system is less strong, the fiscal response to capital-account shocks may not be forthcoming, and the system is unlikely to survive a major shock.

The sustainability of fixed exchange rates also depends upon the strength of the domestic financial system. As the Argentine example indicates, the adjustment to a reduction of capital flows under fixed exchange rates involves a potentially sharp monetary contraction, which means both high interest rates and a cutback in credit extended to domestic borrowers. Under these circumstances, borrowers may experience difficulties in servicing their debts, and unless the banking system is robust, a highly disruptive banking crisis may emerge.

These considerations highlight the value of exchange-rate *flexibility* in the aftermath of a shock to capital flows. In addition to the issues described above, there is the simple fact that capital-account shocks require an adjustment of the real exchange rate, and it is macroeconomically less disruptive to achieve this through an adjustment of the nominal exchange rate than through changes in the myriad prices of the goods and services produced in a modern economy.

The main reason to forego the benefits of more flexible exchange rates is the desire to find a means of enforcing *commitment* by monetary policymakers to a stable and noninflationary policy, by reducing the scope for discretion in setting monetary policy. In some countries, the value of the commitment that is provided by fixed exchange rates may outweigh the loss of flexibility. But in other cases rigid exchange-rate commitments may be a very expensive way to impose discipline on monetary authorities. In such cases, is all lost in the struggle for discipline and commitment?

The answer is no. Advocates of rigid exchange-rate regimes or unbreakable monetary rules as the only

mechanisms available to solve the problem of time inconsistency in monetary policy may be unduly pessimistic. What matters is not that there be a single, unbreakable rule, but rather that policymakers adopt and communicate to the public a set of principles for policy formation that preclude "opportunistic" actions. These principles could be reinforced by public commitments to, for example, specific inflation targets.¹⁶ But such principles need not preclude a policy response to changed circumstances, as long as the response is understood by the public to be part of a sensible and predictable regime.

Here, the experiences of Chile and Colombia are instructive. Neither country operates under freely floating exchange rates, and both countries have oriented monetary policy toward satisfying some form of exchange-rate commitment. On the other hand, both countries have also retained substantial discretion in the management of their monetary and exchange-rate policies. So, for example, when in 1994 and 1995 large capital inflows posed a difficult choice between maintaining their announced exchange-rate bands and suffering inflationary pressures, or changing the band to allow the exchange rate to appreciate, both countries chose to move the exchange-rate bands. This adjustment of policy was not perceived as a violation of policy commitments or a fundamental change in the "rules of the game", but rather as a policy response to an external shock wholly consistent with the underlying "policy regime". In contrast, the Mexican devaluation of December 1994 was viewed by many participants in international financial markets as a negation of previously-made policy commitments, because in their view the authorities had made unconditional promises to maintain the previously existing exchange-rate regime.

Thus, the conflict between "commitment" and "flexibility" in the choice of exchange rate regime can be alleviated by rules that are contingent, in reasonably predictable and well understood ways, upon unforeseen macroeconomic developments.¹⁷ For such a regime to be credible it must first be comprehensible, which means that the "rules of the

game" need to be reasonably simple. But, as the examples of Chile and Colombia illustrate, they need not be so simplistic as to preclude an exchange-rate response to a genuine and observable shock to the economy.

1. Debt management

Debt maturity: The crisis that followed the Mexican devaluation was badly aggravated by the country's reliance upon short-term debt, which made the country highly dependent upon continual access to international credit markets to roll over much of the outstanding stock of debt. Even a temporary loss of market access placed the country in an untenable position, from which it was extracted only by deep and painful adjustment measures and extraordinary efforts of the international community. Argentina was better able to defend its exchange-rate regime during the financial-market turbulence of early 1995, because its longer-term debt profile relieved it of the need to access international financial markets during the worst of the international financial turbulence, and permitted the country to delay its return to those markets until after the panic had subsided and a strong adjustment package had helped reestablish its perceived creditworthiness. Put differently, the fact that investors did not have the opportunity to leave in herds in a short period of uncertainty gave crucial time for authorities to react, adjusting fundamentals as required, and restoring confidence.

Thus debt, and particularly short-term debt, can aggravate economic instability. Governments should therefore finance themselves with medium- and long-term debt to the maximum possible extent. And, to guard against potential negative effects of debt, it is important that the Central Bank hold a significant proportion of the country's expected debt service (including amortization) of the following quarters in highly liquid and readily available international reserves. This policy implies that if the debt is short run, it would have to have almost full backing in international reserves, over and above the coverage that is required to assure prompt payment of imports and fluctuations in the demand for base money.

Denomination: If the stock of domestic debt is large and is denominated in domestic currency, it may be

difficult to extend its maturity, given the inherent exchange risks involved and the volatility in inflation and interest rates. Also, it may be subject to self-fulfilling expectations of inflation. If investors believe that inflation will accelerate, they will demand a higher interest rate which will aggravate the fiscal deficit and may force the government to accommodate the expected higher inflation. One means of reducing these problems is to denominate government debt contracts in a more stable unit of account, or to provide a mechanism to adjust returns, protecting them from the ravages of inflation. When debt is denominated in foreign currency we speak of "dollarization", when it is indexed to some measure of domestic prices we speak of "indexation". Choosing either of these two mechanisms would insulate interest rates from changes in the public's expectations of inflation or of exchange rate movements. Moreover, by protecting investors from changes in inflation, exchange rates and domestic interest rates these denominations may allow the government to extend the maturity of the debt.

However, if the government policy is unsustainable and will require, eventually, a major adjustment of the exchange rate or an acceleration of inflation, the stock of dollarized or indexed debt will be made effectively more expensive, precisely at the time when debt service is harder to maintain. Hence, denominating the debt in dollars or in an indexed unit should never be made as a means to postpone a needed adjustment. But if it is done in the context of a sustainable program, it may help to shelter that program against self-fulfilling expectations and to extend debt maturities.

Place of issue: Should public debt be issued domestically or abroad? This distinction is becoming less relevant with the liberalization of capital transactions, which implies that foreigners can buy debt issued domestically and residents can buy bonds issued abroad. Nevertheless, there are two important elements which should be taken into account. First, it is important to determine whether the debt is purchased by the domestic banking system, something that is more likely to happen with domestically issued debt. This is so because banks

purchase these instruments with resources obtained through very short term deposits. Moreover, they typically have a guaranteed access liquidity from the Central Bank in case of need. Usually, short term domestic debt can be used for repurchase operations with the Central Bank. Hence, in practice, domestic debt held by banks is equivalent to interest-bearing money. It is, therefore, more inflationary than debt held by foreigners but it is somewhat less sensitive to changes in international interest rates because it is demanded in part for liquidity purposes.

By contrast, demand for foreign debt may be more volatile since it usually represents very small percentages of the holder's portfolio and these fractions may be very unstable. If it is short term, this could pose very serious problems. Consequently, short term foreign debt may not be as inflationary but may be a dangerous source of volatility.

1. Fiscal policy

Fluctuations in capital flows will, like other macroeconomic shocks, generally demand a fiscal response. The need for a swift response is particularly acute in the immediate aftermath of an adverse shock because such a shock often implies a sharp contraction in the availability of non-inflationary financing of fiscal deficits, while at same time its contractionary impact tends to increase fiscal deficits. But more generally, because capital-account (and other) shocks are so much larger in Latin America than in industrial economies, the pace of fiscal adjustment needs to be more rapid; unfortunately, Latin America and the Caribbean cannot afford the protracted discussions and adjustments that may be tolerable in the industrial economies.

However, the political process through which fiscal policy is decided is similar in the region to that of most democracies. It typically involves an Executive Branch and a Legislative Branch. The Executive has several spending ministries and the legislative may have two houses. Each law requires two discussions in each house and a reconciliation between the two to sort out the differences. Going through the process takes time and this is not only because of bureaucratic delay. As argued by Alesina and Drazen (1992),

different constituencies may have incentives to delay adjustment, not because they believe adjustment is not needed but because, by obstructing a solution, they may be able to shift the burden of adjustment onto other groups.

Given the larger fiscal risks, the limited willingness of financial markets to finance the implied deficits with a prudent debt structure, and the inherent difficulty faced by democratic political systems to react quickly to budget problems, it is not surprising that fiscal policy has been such an important determinant of macroeconomic instability in Latin America. However, there are concrete policy strategies that can ameliorate the problem. Some strategies of particular relevance for the management of volatile international capital flows are:¹⁸ (i) set precautionary fiscal targets, (ii) adopt budgetary rules and institutions that deliver quick responses, (iii) institutionalize contingent rules for shock management.

Set precautionary fiscal targets: In principle, it would be desirable to offset the contractionary impact of a sudden reduction in capital flows with a counter-cyclical fiscal expansion. The difficulty, of course, is that the shock also makes non-inflationary financing for the implied budget deficits much more scarce, potentially creating the need for a pro-cyclical fiscal contraction instead. This is particularly likely if the fiscal situation is precarious before the shock arrives. This creates the apparently paradoxical possibility that fiscal contraction is the appropriate response to sudden capital inflows and outflows, in the former case to limit the expansionary impact of the inflows, and in the latter case to bring the government's financing requirements into line with the new, lower availability of noninflationary financing.

If, however, countries adopt the practice of targeting a fiscal surplus during normal times, a counter-cyclical response to adverse capital-account shocks becomes much easier to achieve. It is, after all, much easier to permit a budget surplus to become smaller than it is to finance a budget that has moved into deficit in the aftermath of an adverse shock to the capital account. And, in the long run, the lower steady-state capital stock will reduce the likelihood

that domestic and international investors will develop fears about the government's creditworthiness.

Adopt budgetary rules and institutions that deliver quick responses: The fiscal response to an economic shock is the outcome of decisionmakers working with a specific institutional context. This institutional context defines the terms of the budgetary debate, for example by establishing the relationship between the Ministry of Finance and the spending ministries and between the executive and the legislature, and thus helps determine budgetary outcomes. Alesina, Hausmann, Hommes and Stein (1995) provide evidence, for example, that the budgetary rules that exist in different Latin American economies have had important effects on long-run fiscal outcomes. Similarly, some institutional features of budgetary management are conducive to rapid and effective fiscal response to shocks, while others increase the risk of gridlock and delay. For example, it is commonly the case that the executive proposes a budget which must be acted upon, after debate, by the legislature. If there is no deadline, incentives for the legislature to come to a timely agreement may be insufficient to prevent deadlock. On the other hand, if there is a deadline after which, for example, the executive's proposed budget comes into force, the legislature is provided with much stronger incentives to enact budgetary legislation promptly.

Institutionalize contingent rules for shock management: Explicit rules that specify the fiscal response to major economic contingencies can also promote effective fiscal adjustment. Stabilization funds, such as for copper in Chile and for oil and coffee in Colombia, are one form of automatic spending rule that is particularly well suited for clearly identified sources of revenue volatility. But such automatic adjustments can also apply to revenues as well. For example, in Ecuador the contingent rule specifies that if oil tax revenue falls below the budgeted level, the domestic price of gasoline must be increased in order to make up for the fiscal shortfall. Sharp fluctuations in capital flows will, through their effect on international trade, domestic spending and other determinants of the tax base, exert and indirect but potentially powerful

effect on fiscal outcomes. It would be useful to reach agreement, before such shocks arrive, on a set of rules that determine how to absorb the fiscal implications.

1. Regulation of capital inflows

Integration into world financial markets holds enormous promise for the economic development of Latin America. But the policy problems created by volatile capital flows are serious as well, which raises the question whether some regulation of such flows is called for, and if so, how it should be structured. There is no consensus on this issue, but it seems safe to say that the turmoil that afflicted international financial markets in early 1995 has increased the respectability of proposals to regulate international capital flows, not as a panacea for the problem, but as one of several policy instruments that may be enlisted to reduce the volatility of capital flows and ameliorate their macroeconomic consequences.

A first question is whether such regulation can be effective at all. Experience shows that the effectiveness of restrictions on financial flows tends gradually to diminish over time, as market participants find ways around the restrictions, except perhaps in very highly regulated financial systems. If regulation of capital flows becomes totally ineffective it will be, at best, a useless instrument, and it may be worse than useless if the actions taken to circumvent the restrictions are themselves economically costly. The potential effectiveness of restrictions on capital flows is an empirical issue that needs to be settled on a country-by-country basis. It should be noted, however, that permanent and total isolation from fluctuations in international capital flows is not a plausible or sensible goal, and the enforcement difficulties of the regulation required to achieve this draconian end are not relevant. What is at issue is the scope for altering, at the margin and perhaps temporarily, the magnitude and types of flows experienced by a country. The experiences of Colombia and Chile are revealing here. Both countries have made substantial efforts to regulate capital inflows, particularly of short-term debt. Both have nevertheless faced significant policy challenges from high rates of capital inflow, suggesting that the

restrictions were not a panacea. But both countries were also essentially unaffected by the "Tequila effect" that gripped much of the continent in the aftermath of the Mexican devaluation. This suggests that regulation of capital inflows need not be perfectly effective to provide meaningful protection against international financial turmoil.

A second question is whether inflows and outflows should be treated symmetrically. On the one hand, it might be argued that the policy problem stems not from inflows themselves, but rather from the possibility of sudden outflows, so that attempting to regulate the outflows would be a more direct approach to the problem. However, regulation of capital outflows may be much less effective than that of inflows. To paraphrase an old saying about the stock market, inflows are generated by investors' hopes and outflows by their fears, and the reality is that fear is a more potent motivator than is hope. More to the point, there is a danger that restrictions on capital inflows will be used, as they have in the past, to insulate misguided economic policies from market discipline. Even if this is not the purpose or the result of the policy, it may lead to difficulties by creating an unfortunate perception. These problems apply less forcefully to regulation of capital inflows. Here, the problem is typically the need to find another macroeconomic instrument for coping with the macroeconomic boom that results from inflows that derive from international confidence in economic prospects and the policy regime, and to ensure that the inflows do not make the economy excessively vulnerable to sudden withdrawals of capital. They are therefore unlikely to be, or be perceived as, substitutes for policy discipline. And because capital inflows are motivated by favorable interest-rate differentials that are substantially smaller than the losses that investors may fear when attempting to withdraw their capital, regulation of inflows is more likely to be effective.

A third question is whether different forms of capital inflow should be treated differently. On the one hand, the short-term macroeconomic impact of capital inflows is largely independent of the financial instrument in which they are effected. However,

different kinds of capital inflow expose the economy differently to the risk of sudden, subsequent withdrawals of capital. In particular, the danger posed by the "rollover risk" that was highlighted in our discussion of public debt management applies equally to privately-issued international debt. There may therefore be a special policy interest in ensuring that short-term international debt is issued prudently by private, as well as public borrowers.

1. The role of international monetary coordination

The greatly increased international mobility of capital has increased the magnitude of the financial problems with which policymakers must cope both directly, by increasing the magnitude of the financial shocks that affect a given economy, and also by virtue of "contagion" effects through which financial crisis in one country may be transmitted to other vulnerable economies. But the amounts that can be raised through normal channels are woefully inadequate to ensure orderly adjustment to the massive balance of payments shocks that occur in today's integrated financial markets.

The international rescue package created to cope with the financial disorder that followed the Mexican devaluation highlights the inadequacy of current arrangements for international monetary cooperation in a world of highly mobile capital. The rescue effort took many weeks to mount, required highly unorthodox methods on the part of both the International Monetary Fund and the US Treasury, and remains sufficiently controversial as to create strong doubts about that it could be replicated for any other country. This raises the question whether and how existing mechanisms of international monetary cooperation need to be reformed.

If the international community is to cope with these larger international financial shocks, it will in all likelihood need access to larger financial resources.

The main drawback of making such resources available for rescue operations is the problem of moral hazard created by investors' and policymakers' perception that they will be, at least in part, bailed out in the event of a crisis. This may create incentives for domestic policymakers and investors to behave in an excessively risky manner. One response to this possibility is the creation of "early warning" systems, which would improve international policymakers' capacity for predicting, and heading off future crises. The implied package of financial support to resolve crisis with surveillance to head them off is, of course, nothing new, but rather an expansion and intensification of the International Monetary Fund's main lines of business.

While the business of monitoring macroeconomic developments and responding effectively to crises as they arise is clearly important, more can be done to reduce countries' vulnerability to capital-account shocks and increase their capacity to deal with them. As we have tried to convey in this paper, both an economy's vulnerability and its capacity to respond effectively depend upon key structural characteristics. These include, among other factors: the depth and robustness of the domestic financial system, the suitability of labor-market regulations, the nature of budgetary institutions, and the capacity of the domestic political system to forge a lasting consensus on economic policy. A focus on short-term macroeconomic management cannot substitute for systemic reforms in these areas. While, as with short-term macroeconomic policy formation, such reforms are in the final analysis the responsibility of a country's own policymakers and populations, international agencies can assist by providing financial assistance and, no less important, contributing the expertise acquired through related policy research and first-hand experience with similar reforms in other countries.

References

- Alesina, Alberto and Allan Drazen (1992) "Why are Stabilizations Delayed?", *American Economic Review*, 81(5), December.
- Alesina, Alberto, Ricardo Hausmann, Rudolf Hommes and Ernesto Stein (1995) "Budget Institutions and Fiscal Performance in Latin America", OCE working paper, Inter-American Development Bank.
- Blanchard, Olivier and Nobu Kiyotaki (1987) "Monopolistic Competition and the Effects of Aggregate Demand", *American Economic Review*.
- Calvo, Sara and Carmen Reinhart (1994) "Capital Flows to Latin America: Is There Evidence of Contagion Effects?", mimeo, International Monetary Fund.
- Calvo, Guillermo (1992) "Rules versus Discretion -- Once Again", mimeo, University of Maryland.
- Calvo, Guillermo, Leo Leiderman and Carmen Reinhart (1993) "Capital Inflows to Latin America: The Role of External Factors", *IMF Staff Papers*.
- Chuhan, Punam, Stijn Claessens, and Nlandu Mamingi (1993) "Equity and Bond Flows to Latin America and Asia: The Role of External and Domestic Factors", mimeo, World Bank.
- Cooper, Russell and Andrew John (1988) "Coordinating Coordination Failures in Keynesian Models" *Quarterly Journal of Economics*.
- Fernandez-Arias, Eduardo (1993) "The New Wave of Private Capital Flows: Push or Pull?", mimeo, World Bank.
- Gavin, Michael (1993) "Unemployment and the Economics of Gradualist Policy Reform", mimeo, Columbia University.
- Hausmann, Ricardo, Michael Gavin *et. al.* (1995) "Overcoming Volatility in Latin America", in Inter-American Development Bank, *Progreso Económico y Social de Latina America: Informe 1995*, Washington, DC: Johns Hopkins University Press.
- Leiderman, Leonardo and Lars Svensson (1995) *Inflation Targets*, London: Center for Economic Policy Research.
- Mussa, Michael (1982) "Government Policy and the Adjustment Process", in J. Bhagwati (ed.) *Import Competition and Response*, University of Chicago Press

End Notes

1¹The chart visually understates the rapidity of the drop in international capital flows in this period, which remained large through August 1982 and dropped very quickly to negligible levels after Mexico announced its inability to service its international debt according to schedule.

2²Calvo, Leiderman and Reinhart (1993) find that foreign factors accounted for 30 to 60 percent of the variance in real exchange rates and reserves. Chohan, Claessens and Mamingi (1993) and Fernandez-Arias (1993) also find that external factors explain a large proportion of capital flows to Latin America. In the discussion that follows we focus primarily upon external shocks to capital flows.

3³Business-cycle fluctuations associated with fluctuations in capital flows may involve such externalities: and Blanchard (1987) Cooper and John (1988). The sectoral reallocations induced by the real exchange-rate fluctuations that often accompany changes in the rate of capital flow may also be subject to such externalities. Mussa (1982) lays out a number of imperfections in the adjustment process. In Gavin (1993) the unemployment associated with sectoral adjustment of the economy is suboptimally high, providing a rationale for policy to "lean against the wind" in response to shocks

4⁴Calvo and Reinhart (1994) provide empirical evidence on such "contagion" effects in Latin America.

5⁵Some care needs to be taken in the interpretation of these comparisons, as the required computation of U.S. dollar GDP is highly sensitive to the exchange rate, and when the exchange rate is overvalued the ratios will tend to understate the magnitude of the flows compared with the long-run sustainable levels of (\$) GDP.

6⁶This point would hold as well for long-term debt, where there is significant price risk.

7⁷Of course, countries should expect international investors to demand compensation, in the form of higher required returns, for the risks entailed by such commitments.

8⁸In Mexico alone, reserves declined by nearly \$20 billion during 1994.

9⁹The following discussion is couched in terms of capital inflows for the sake of brevity. The case of outflows is largely symmetric, with potential asymmetries discussed in the text.

10¹⁰The 1990 starting point is fairly arbitrary, and is chosen because it represents the beginning of the inflows episode for most countries. Because the Argentine exchange rate was in 1990 still influenced by the hyperinflation, the chart probably overestimates the amount of any real overvaluation of the Argentine peso.

11¹¹The index is a geometric average of real, dollar equity prices, weighted by market capitalization in 1994. The U.S. producer price index is used to deflate the indexes.

12¹²At the end of 1994, Venezuela was well into a major economic and financial crisis associated with adverse shocks to oil income and the failure of a substantial portion of its banking system.

13¹³Losses associated with declines in the price of internationally-traded Argentine bonds were largely responsible for the 1995 collapse of a merchant bank in Argentina. Though the bank itself was relatively small, the collapse created confidence problems for a number of Argentine banks. More recently, the sharp contraction in the domestic financial system that has been imposed by the Argentine convertibility plan with capital outflows has generated interest rates so high as to call into question the ability of both the public and the private sectors to service their debt.

14¹⁴These fiscal data are not adjusted for inflation, which was declining rapidly during this period, or for the business cycle. Adjustment for these factors would reduce the magnitude of the fiscal adjustment, but it would nonetheless remain substantial.

15¹⁵Hausmann, Gavin *et. al.* (1995) provide evidence on both the insulating properties of alternative exchange rate regimes and the destabilizing consequences of unsustainability. Their estimates imply that Latin America has in the past paid a high price for switching between exchange-rate regimes, which has often occurred because the existing regime proved to be unsustainable.

16¹⁶See Leiderman and Svensson (1996) for a discussion of inflation targets as a device for providing "discipline" over monetary policy.

17¹⁷See Calvo (1992) for a more extended discussion of such "contingent rules".

18¹⁸The following discussion draws heavily upon Hausmann, Gavin, *et. al.* (1995), which contains a much more extended discussion of these and related strategies for assuring appropriate fiscal adjustment to shocks.

