

Managing Volatile Capital Inflows: The Experience of the 1990s

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Abstract

The paper aims at deriving lessons for macroeconomic policy in developing countries in response to heavy temporary capital inflows as witnessed in the early 1990s. First, after spelling out the major reasons why policymakers should be concerned about cyclical inflows, the volatility of different capital-account items {bank lending, foreign direct investment, and portfolio flows} is assessed. Second, the recent capital flows are compared between Asia and Latin America for similarities and differences. Third, the paper discusses for 13 heavy capital importers in Asia and Latin America the extent to which they met the prerequisites postulated by the sequencing literature to avoid macroeconomic complications of heavy capital inflows, and how they used these external savings in light of the debt cycle theory. Finally, the paper draws five policy lessons for the next episode of heavy capital inflows: identify the origin of rising foreign exchange reserves; identify the limits of foreign debt; discourage above-limit, short-term inflows; observe the tradeoff between price stability and competitiveness; and design policies to target monetary aggregates and exchange rates, including fiscal policy, sterilized intervention, reserve requirements, and exchange rate management.

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The Nature of Capital Flows in the 1990s

Several econometric studies (reviewed in IMF 1994) suggest that cyclical external factors account for some 30 to 50 percent of the variation in private capital flows to developing countries, playing a greater role in Latin America than in Asia. The implicit warning that these studies carry, namely that a rise in OECD-country interest rates would lead to a halt or even reversal of capital flows, was partly confirmed by the \$40 billion reserve loss of Mexico and by net outflows from dedicated emerging market funds during 1994.

The macroeconomic adjustment to a sudden reversal of foreign capital flows can be extremely painful. There are at least four major reasons why governments and central banks should care about the sustainability of capital flows which their economies can tap abroad:

- First, it is increasingly acknowledged that global capital markets suffer from three major distortions: the problem of asymmetric information causes herd behavior among investors and, in good times, congestion problems; the fact that some market participants are too big to fail causes excessive risk taking; and the global financial markets feature multiple equilibria, unrelated to “fundamentals”. It is questionable, therefore, whether the financial markets will discipline governments into better policies; even if they were to do so, the social and economic costs may be excessive.
- Second, any shortfall in capital inflows will require immediate cutbacks in domestic absorption to restore external balance. The savings-investment balance is more likely to be achieved through cuts in investment than through higher savings in the short term, compromising future output levels. Current output levels fall to the extent that rigidities prevent resource reallocation, so that contractionary disabsorption effects outweigh expansionary substitution effects.
- Third, the expansion of domestic credit connected with unsterilized capital inflows may not be sound enough to stand the rise in domestic interest rates and the fall in domestic asset prices that go with a reversal of these inflows (Rojas-Suarez and Weisbrod 1994). The resulting breakdown of domestic financial institutions provides incentives for monetary expansion and fiscal deficits incurred by the public bail-out of ailing banks.
- Fourth, temporary capital flows may lead to an unsustainable appreciation in the real exchange rate. The appreciation is in conflict with development strategies based on the expansion of exports and efficient import substitution, which centrally relies on a reliable and competitive exchange rate. Overvalued exchange rates cause suboptimal investments which are costly to reverse, undermine active trade promotion, export diversification and productivity growth, and breed capital flight (Fischer and Reisen 1993). Large swings in real exchange rates, often a result of temporary capital flows, have been found to significantly depress machinery and equipment investment and thus long run growth performance (Ago sin 1994).

For industrialized countries, Turner (1991) recently examined the volatility of different capital-account items in order to arrive at a distinction between permanent versus temporary and autonomous versus accommodating flows. For the period 1975-1989, the capital flows that were most closely correlated with financing requirements were classified as the most accommodating, and the most accommodating types of capital flows closely corresponded to the most temporary flows, proxied by their standardized variability (coefficient of variation) over the period 1975-1988. Finally, Turner made a ranking of four capital-account items, ranging from the most autonomous and permanent to the most accommodating and temporary (i.e., volatile) flows:

- (a) long-term bank lending;
- (b) foreign direct investment;
- (c) portfolio investment; and
- (d) short-term bank flows.

A closer inspection of different capital-account items tends to confirm Turner's results:

- Long-term bank lending includes essentially syndicated Euro-loans, amounting to more than \$200 billion in 1994. The OECD (1995) reports the average maturity of the recorded euro-credits. A striking observation is that the average maturity on these syndicated loans to borrowers from OECD countries is *shorter* than to borrowers from developing countries. During the 1990s, the average maturity for OECD borrowers has oscillated between 5 and 6 years, while borrowers from developing countries enjoyed average maturities of between 6 and 9 years. The longer maturities for developing country borrowers are explained by the high proportion of long-term project loans in syndicated lending.
- Foreign direct investment is largely determined by noncyclical considerations. Being rather governed by long-term profitability expectations, it is less subject to sudden shifts in investor sentiment. While on an annual basis, large fluctuations of foreign direct investment *flows* are regularly observed, foreign direct investment *stocks* are largely illiquid and irreversible. Foreign direct investment, which is little dependent on financial market sentiment, has bad-weather qualities. This observation is reinforced by Mexico's capital account in 1995, which showed only a slightly reduced net inflow of foreign direct investment.
- Portfolio investment is a mixed bag with respect to its stability. Investment by pension funds and life insurance companies can be taken as long-term investment, since these funds follow a buy-and-hold strategy rather than a trading strategy in the emerging stock markets. Unlike banks and most other investors, pension funds and life insurers benefit from regular inflows of funds on a contractual basis and from long-term liabilities (with no premature withdrawal of funds), which together imply little liquidity risk (Davis 1995). As long as these funds are underinvested in the emerging stock markets (as measured by their percentage share in world stock market capitalization) and as long as the emerging stock markets display a comparatively low return correlation vis-a-vis the OECD stock markets, developing countries can expect further equity-related capital flows from pension funds and life insurers (Reisen 1994a). In order to tap these flows, developing countries must strive for investment grading by the major credit rating agencies.
- Equity-related investment by domestic residents with overseas holdings, by private foreign investors, and from managed funds (country funds and mutual funds) are largely governed by cyclical determinants and oriented at short-term returns. In the course of the early 1990s, the decline in returns on riskless assets in the US and other OECD countries has led, not to an acceptance of falling returns, but to a growing tolerance of risk. Mainly via mutual funds, this has brought much speculative money to the emerging stock markets. The mutual funds have to publish regular (by now, even daily) asset prices and can suffer large redemptions at any time when there is bad news. What is more, with the need to have sufficient cash to payoff clients redeeming their holdings, a widespread crisis such as what happened after the devaluation of the Mexican peso in late 1994 forces fund managers to sell in markets totally unrelated to the origin of the crisis.
- Any other portfolio investment, in particular bond-related, should be considered as volatile. Borrowing through corporate or government bonds, the most important component of Latin American capital inflows in the 1990s (see below), is largely governed by interest rate differentials and thus akin to reversal. The average maturity of Latin American international bonds has fallen below 4 years during the 1990s so that a high part of outstanding bonds can be fairly rapidly withdrawn; moreover, a concerted response to sustain external financing is difficult to organize as claims are dispersed among numerous bond holders (Griffith-Jones 1994).
- Short-term bank lending and borrowing facilities (such as euro medium-term notes and euro-commercial paper) are particularly cyclical and volatile. Developing countries interested in sustained growth should be wary when firms and banks incur these borrowings.
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Using quarterly balance-of-payments flow data for changes in *net* claims of FDI, portfolio equity, “long-term” and “short-term” flows, Claessens et al. (1995) find that capital-account labels do not provide any information about the volatility of the flow. In particular, they argue that FDI and long-term flows are not more persistent than others. However, the primary policy concern here is with *reversals* of foreign investment on a large magnitude, a concern not addressed by Claessens and coauthors who base their analysis on quarterly time-series properties of net, rather than gross, inflows.

The 1990s Capital Flows: Asia and Latin America in Perspective

Putting the 1990s surge of capital flows into a broad regional perspective may be useful for two reasons: First, Asia and Latin America compete in international capital markets, and second, Asia may offer valuable policy lessons to Latin America and vice versa. However, country policies and experiences vary within the two regions, requiring to supplement the regional perspective with a more country-specific analysis.

Many observers have been drawn to an overly optimistic interpretation on the capital flows of the early 1990s by some regularities between Asia and Latin America and by some differences to the flows that preceded the debt troubles of the 1980s. Unlike in the 1980s, capital flows were not pulled in by deficit-running government budgets and public enterprises, but essentially by private investors and private firms. Unlike in the 1980s, when bank lending prevailed in both regions, risk capital has been flowing to both regions as portfolio and direct investment. As a share of gross capital flows, FDI rose from 15 percent during 1978-1982 to 35 percent during 1990-1993 in both regions (see Table 1). Another similarity between both regions is the size of *net* capital flows in terms of their gross domestic products and the high percentage share of these net flows that have gone into foreign exchange reserves. But beneath the surface, some important differences loom large for the composition and sources of capital flows:

- First, although the share of *Fill* in gross capital inflow is only slightly higher in Asia than in Latin America, its *nature* differs between the two regions. In Latin America it has mainly taken the form of debt/equity swaps and privatization, which do not necessarily generate additional capital formation. In Asia, by contrast, foreign direct investment has mostly been in the form of acquisitions or the setting up of new enterprises (BIS 1994). The different composition of *Fill* may determine its macroeconomic consequences: in Asia it is more likely to add to domestic investment and it is also more likely to be skewed toward export production (rather than construction of shopping malls, for example) than in Latin America.

Table 1: Two Episodes of High Capital Flows, Asia and Latin America
(annual averages)

	1979-1982		1990-1993	
	Asia	Latin America	Asia	Latin America
Gross Capital Inflows, bn \$				
of which (percent)	19.3	36.5	74.7	36.7
FDI	15.0	15.1	37.1	33.5
Portfolio	3.6	4.9	14.2	68.1
Other “long term”	53.9	63.6	21.7	-32.1
Other “short term”	27.5	16.4	27.0	30.5
Net Capital Inflows, bn \$	15.8	26.3	46.6	23.8
Reserve Accumulation	6.9	0.6	31.0	18.0

Source: IMF *World Economic Outlook* 1994; own calculations.

- Second, the *share and the nature* of portfolio flows differ markedly between the Asian and Latin American capital accounts. In Asia, portfolio flows accounted for just 14.2 percent of gross capital inflows, compared with a corresponding percentage share of 68.1 percent in Latin America. Around three quarters of portfolio investment to Latin America were borrowings in international capital markets, while only a quarter consisted of equity-related flows (Group of Thirty 1994). Not only is the equity-related share of portfolio flows higher in Asia than in Latin America, but it is also likely to come from more stable sources. Pension funds and insurance companies often limit their investment toward those countries which have been assigned investment-grade credit ratings by rating agencies such as Moody's and Standard & Poor's. Currently, only Chile and Colombia in Latin America carry the investment grade stipulated by the portfolio allocation guidelines of pension funds, while in Asia the grade is enjoyed by PRC; Indonesia; Korea; Malaysia; Taipei, China; and Thailand. This explains why UK pension funds (for which such a breakdown is available), had by 1993 invested 4.6 percent of their assets in Asia, compared to only 0.6 percent in Latin America.
- A third difference in the composition of capital flows is that lending classified as "long term" by the IMF constitutes a fifth of Asia's gross inflows while it has been negative in Latin America, thanks to Brady-type debt reduction and limited new lending. On the other hand, Latin American firms and banks tapped short-term borrowing facilities slightly more than did borrowers from Asia.

The fact that it is difficult in practice to distinguish between permanent and temporary capital inflows confronts the policymaker in the recipient country with a *specific transfer problem*. He has to make the basic decision *whether to accept or resist the capital inflow* (Williamson 1994), or how much to accept and how much to resist. (A third possibility is to induce a transfer as Mexico did in 1994 by offering dollar-linked short-term government paper and by selling foreign exchange reserves to defend the exchange rate as investor confidence started to wane.)

Table 2 shows that on average both regions accepted around half of the transfer accomplished by a current account deficit in the balance of payments, while the other half went into the build-up of foreign exchange reserves. But the regional averages hide important country differences. In Asia, Indonesia, Philippines, and Thailand accepted most of the inflows by running current account deficits; in Latin America, Mexico, Argentina and Peru belong to this group. By contrast, Malaysia and Chile have resisted most of the transfer by building up foreign exchange reserves (and sterilizing them).

Table 2: External Financing of Major Capital Flow Recipients, average 1989-1994
(percent of GDP)

	Current account deficit (1)	+	Reserve accumulation (2)	=	Direct foreign investment (3)	+	Net other financing (4)
China, People's Rep. of	-0.5		0.8		2.6		-2.3
India	1.5		0.8		0.2		2.1
Indonesia	2.3		0.8		1.2		1.9
Korea, Rep. of	0.0		0.4		0.3		0.1
Malaysia	2.6		6.4		6.9		2.1
Philippines	4.2		1.8		1.1		4.9
Thailand	5.8		3.2		2.3		6.7
Average Asia	2.3		2.0		2.1		2.2
Argentina	1.5		0.6		1.7		0.4
Brazil	-0.1		1.1		0.3		0.7
Chile	0.7		3.6		2.5		1.8
Colombia	0.4		1.5		1.5		0.4
Mexico	5.3		0.3		1.4		4.2
Peru	3.3		2.4		0.3		5.4
Average Latin America	1.4		1.5		1.3		1.6

Sources: J.P. Morgan *Emerging Markets Economic Outlook* (December 16,1994); World Bank *World 1 Debt Tables* 1994; own calculations. *

Macroeconomic Prerequisites and the Use of Capital Flows

The choice whether to accept or resist the transfer should not only be guided by the composition and volatility of capital flows, but can be based on two different economic theories. The first is the *sequencing literature* which recommends linking the acceptance of capital inflows to the progress in fiscal and monetary stabilization, domestic financial liberalization, prudential supervision, and trade liberalization (Edwards 1990, Fischer and Reisen 1993). Fiscal consolidation is a necessary prerequisite because it obviates the temptation to finance unsustainable budget deficits a bit longer thanks to inflows and because regular tax revenues obviate the need for governments to rely on the implicit taxation of domestic financial intermediation. Moreover, government budgets need to allow for the contingency that subsequent capital outflows will force up domestic interest rates that worsen the fiscal balance (Turner 1995). Low inflation and inflationary expectations prior to heavy capital inflows obviate the temptation to use the exchange rate regime (a nominal peg, an active crawl, or a pure float) to help speed up the disinflationary process with heavy capital inflows: the costs of misallocation involved by the inevitable real currency appreciation which is due to inertial inflation is largely documented (Fischer and Reisen 1993). The risk that capital flows are skewed toward nontradables is also increased by the extent of price distortions in the local economy; to avoid "immiserising" capital inflows (Brecher and Diaz-Alejandro 1977), domestic financial liberalization, trade liberalization, and solid export diversification had better precede a period of heavy capital inflows. Strict regulatory and supervisory policies are important for minimizing moral hazard (including corruption, fraud, and excessive risk taking) in the banking system and for ensuring the health and viability of domestic banks. We all know, however, that such prudential

requirements are rarely fulfilled in the developing world. Turner (1995) argues rightly, therefore, that in the absence of strict supervision, developing country banks may need to be better capitalized than they need be in the major OECD countries. Well-capitalized banks will be able to withstand the emergence of bad debts and sharp fluctuations in real interest rates, and the value of domestic assets held as capital. Over longer periods, the FeldsteinHorioka observation of a close match between national investment and saving rates does also hold for the developing world. Notwithstanding the tremendous rise in international securities transactions and in global foreign exchange trading, the integration of asset markets for the broader categories of world saving and wealth remains limited (Reisen 1996). Therefore another important prerequisite not emphasized enough in the sequencing debate is a high domestic savings ratio.

Table 3 shows that Asia (in particular East Asia) and Latin America differed with respect to the macroeconomic prerequisites for capital inflows to raise efficiency and growth without compromising stability. First, with fragile public finances, Latin America has in the past relied much more than Asia did on inflationary finance, as witnessed by seigniorage as a percentage of GDP during the 1970s and 1980s. While most of the heavy capital importers had reduced their budget deficits by the early 1990s, at least India and Brazil did not yet fulfill the fiscal requirements for sustainable capital inflows for the size of their budget deficits, and the Philippines looked fragile for the relative size of her public debt. Second, again in striking contrast, the heavy capital flows of the 1990s have coincided with slightly higher inflation levels in Asia, while capital flows have gone along with falling inflation levels in Latin America, thanks to heavy real appreciation of currencies. Third, prior to the 1990 flows, black market premia in Latin America have largely exceeded those in Asia, indicating a higher anti-export bias and the risk of immiserising capital inflows in Latin America. Export promotion has been more deeply anchored in Asia than in Latin America, as witnessed by the much more dynamic export growth; again this may indicate that the damage done to the diversification and fostering of exportable production when volatile real exchange rates undermine the confidence in the government's commitment for active trade promotion is much greater in Latin America than in (East) Asia. A final striking difference is the level of gross domestic savings. In Asia, they are mostly solidly in the 3D-plus range as a percentage of GDP, in Latin America they are far below. Note the important country outliers within the two regions, though (Chile, Philippines).

**Table 3: Prerequisites for the 1990s Episode,
Asia and Latin America**

	Average Seigniorage 1970-88 (% of GDP)	Government Budget 1988-93 (% of GDP)	Public Debt 1994 (% of GDP)	Average Black Market Premium (Posttrade Reform up to 1992)	Export Growth, US\$ (Average per annum, 1980-92)	Gross Domestic Savings, Average 1989-91 (% of GDP)
China, People's Rep. of	n.a.	-2.6	n.a.	88.0	11.9	33
India	1.5	-7.4	45	23.8	5.9	24
Indonesia	1.4	-0.6	39	8.9	5.6	37
Korea, Rep. of	1.6	0.5	22	3.0	11.9	36
Malaysia	1.3	-3.7	58	0.0	11.3	33
Philippines	1.0	-3.3	96	4.6	3.7	20
Thailand	1.0	3.3	16	1.2	14.7	34
Argentina	4.2	-5.9	22	21.1	2.2	19
Brazil	2.3	-46.9	40	51.7	5.0	24
Chile	3.7	2.0	18	16.1	5.5	28
Colombia	2.1	-0.4	22	12.9	12.9	24
Mexico	3.1	-3.2	32	10.3	1.6	20
Peru	3.6	-4.0	42	1.1.5	2.5	17

Sources: Seigniorage: Easterly and Schmidt-Hebbel (1994); Government data: J.P. Morgan *Emerging Markets Outlook* (December 1994); Black Market Premium: Dean, Desai, and Riedel (1994); Exports: World Bank *WDR* 1994; Savings: World Bank *World Debt Tables* 1994.

The second body of theory on which to base the decision whether to resist or accept inflows is derived from the mechanics of the debt cycle. The mobilization of external savings has been the classic role for capital flows to developing countries, where the relative capital shortage should offer higher returns than in the developed world. According to the *debt cycle hypothesis*, rarely validated empirically, external savings raise domestic investment and growth, which in turn stimulates savings which eventually contributes to the elimination of net foreign debt. Such virtuous circle hides five requirements, again rarely complied with in practice (Devlin et al. 1994):

- First, external capital flows should consistently augment investment, rather than being diverted to consumption.
- Second, the investment must be efficient. Third, the country must invest in tradables (or trade-related infrastructure) in order to be able to create a trade surplus to accommodate the subsequent switch in transfers required to service the debt.
- Fourth, an aggressive domestic savings effort is called for, with the marginal savings rate exceeding the country's average savings rate.
- Fifth, the virtuous circle requires capital exporters willing to provide stable and predictable flows at terms in line with the recipient country's factor productivity.

Table 4 shows that generally the ingredients for the virtuous circle of capital flows are more likely to be found in Asia than in Latin America. Other than in the Philippines, the Asian capital importers did not divert external savings into higher consumption (shares of GDP). In particular in India, Indonesia, and Thailand, the private sector responded to inflows by augmenting investment (shares of GDP), and in Malaysia and again Thailand, government consumption was considerably reduced in the wake of capital inflows. By contrast, the Latin American capital importers did divert the flows on aggregate into higher consumption shares, with the exception of Chile and Colombia. In Mexico and Peru, private consumption boomed, and in Argentina and Brazil government consumption was raised by

more than four percentage points of GDP. These findings imply that Latin America, unlike Asia, did not raise the marginal savings rate above the average savings rate when capital flows rolled in.

Table 4: Macroeconomic Indicators, Asia and Latin America
(% of GNP)

	Change in private consumption, ave. 1989-93 versus ave. 1985-89	Change in government consumption, ave. 1989-93 versus ave. 1985-89	Equipment investment, ave. 1989-91	Real GDP growth, % p.a. 1994	Short-term external debt, end-1994
China, People's Rep. of	-1.5	0.1	n.a.	11.5	2.4
India	-4.2	-0.3	12.5	6.0	3.2
Indonesia	-4.3	-0.6	n.a.	7.0	13.2
Korea, Rep. of	-0.7	0.5	12.8	8.0	5.6
Malaysia	2.0	-1.7	n.a.	8.6	8.6
Philippines	1.8	1.4	10.6	4.7	12.1
Thailand	-3.7	-1.8	19.3	8.5	15.7
Argentina	-1.1	4.3	3.6	5.8	3.4
Brazil	-2.3	4.0	n.a.	4.3	6.4
Chile	0.0	-1.7	8.6	6.3	6.7
Colombia	-0.3	0.5	8.2	4.8	5.2
Mexico	3.6	0.2	9.6	3.1	16.5
Peru	7.7	-1.7	9.7	12.7	15.0

Sources: IMF *International Financial Statistics*, *Emerging Markets Investor* (March 1995); J.P. Morgan *Emerging Markets Outlook* (December 1994); UN National Accounts.

While since 1988 investment efficiency as measured by incremental capital output ratios is reported by the Group of Thirty (1994) as "quite comparable" for the two regions, investment and growth rates have been considerably higher in Asia than in Latin America. Machinery and equipment investment, rather than construction investment, has not only been shown to explain importantly long-run growth performance, i.e., growth rates (DeLong and Summers 1991), but also more likely, investment in tradables necessary for later debt service. Table 4 displays a striking difference for the two regions here, with equipment investment averaging 13.8 percent of GDP over 1989-1991 in Asia, compared to just 8.8 percent in Latin America.

Table 5 points to a final striking regional difference in the use and effects of capital inflows. In Asia, inflation levels generally increased (with the mild exception of Malaysia and the Philippines), reflecting the reluctance of policymakers to accommodate capital inflows with an upward float of the exchange rate and the subsequent incapacity to fully control domestic monetary aggregates. In Latin America, Argentina, Mexico and Peru used exchange rate policy and capital flows to rapidly lower inflation levels; Argentina and Mexico anchored the exchange rate and inflation expectations to the US dollar, while Peru followed the domestic monetarist approach with a full float (as did the Philippines). The real exchange rate, comparing the exchange rate adjusted rise in local consumer prices relative to the United States, appreciated ~ost 70 percent in Argentina and more than 20 percent in the Philippines, Brazil, Colombia, Mexico, and Peru over the 1990s.

The real exchange rate is an important relative price for determining the relative consumption of and investment into tradables versus nontradables. The real exchange rate thus helps predict *future* problems to generate a trade surplus but it does not, however, indicate changes in *current* external competitiveness which are better denoted by the *real effective exchange rate*. The latter indicator is an index of the country's trade-weighted average value against the currencies of its principal trading

partners, adjusted for relative price changes based on indexes most closely measuring the prices of domestically produced finished manufactured goods. With exchange-rate based disinflation or a nominal appreciation of the exchange rate, producer prices generally fall more rapidly than do consumer prices which include nontradables not exposed to world market competition. Another reason is often the consolidation of government budgets implying withdrawal of various subsidies that enter the consumer price index but not the producer price index. Finally, any productivity surges will be reflected in falling producer prices, but not immediately in falling consumer prices. The real effective exchange rate has nowhere appreciated more than 20 percent over the 1990s, quite in contrast to earlier experiences in the Southern Cone of Latin America. Note, however, that the relative competitive position has deteriorated in Colombia, Chile, and Mexico and, thanks to discretionary devaluation, improved in People's Republic of China and India.

Policy Lessons of the 1990s for the Next Episode of Heavy Inflows

After a short episode of monetary tightening in the OECD area during the years 1994-1995, falling interest rates in OECD countries have not failed to push heavy flows of cyclical money into the emerging markets again. This section aims at drawing advice from recent experiences for finance ministries and central banks on how to proceed in dealing with the supply of temporary capital.

Table 5: Exchange Rate Regimes and Real Exchange Rates, 1990s

	FX Regime	Annual CPI inflation Dec 92 -Dec 94	Real Exchange Rate' CPI/US-CPI 1990=100 Sept 94	Real effective exchange rate, trade-weighted WPI-based, 1990=100 Sept 94
China, People's Rep. of	Adjustable peg	8.8-27.0	75.9	n.a.
India	Adjustable peg	8.0-9.4	75.7	78.7
Indonesia	Passive crawling peg	5.0-10.0	105.3	97.0
Korea, Rep. of	Managed peg	4.5-6.3	101.6	82.0
Malaysia	Managed peg	4.9-4.2	108.9	106.2
Philippines	Managed floating	8.2-7.8	126.9	103.2
Thailand	Managed peg	3.0-4.6	111.4	98.4
Argentina	Currency board	17.5-3.4	168.8	107.2
Brazil	Passive crawling peg	1149-936	130.5	105.4
Chile	Target zone	12.7-9.0	119.0	115.1
Colombia	Managed floating	25.1-22.0	133.9	119.5
Mexico	Active crawling peg	11.9-7.0	122.2	111.6
Peru	Floating	56.7-16.0	122.0	96.4

Source: IMF *International Financial Statistics, Emerging Markets Investor* (November 1994).

Identify the Nature of the Shocks

Let us assume that the authorities first observe a rise in foreign exchange reserves. Such rise must not necessarily be due to a flattening of the supply side curve of foreign capital. Frankel (1994) has recently analyzed three different sources of the disturbance, i.e., the rise in foreign exchange reserves within the traditional IS/LM framework. He distinguishes three sources of rising foreign exchange reserves:

- a) An improvement in the trade balance caused by prior devaluation, as in the Colombian case of the early 1990s and as now experienced in Mexico. Improving terms of trade or superior productivity growth may also cause reserve inflows through a trade balance surplus.
- b) A domestic monetary disturbance, which can be either a contraction in domestic money supply or an increase in demand for money, which could be in response to a domestic exchange-rate-based stabilization program.
- c) Finally, as is the focus in this paper, a drop in external interest rates and asset returns, as happened in the OECD area at the start of the 1990s.

Frankel (1994) shows convincingly that an attempt to discern the nature of the disturbance is likely to be most useful in deciding the appropriate macroeconomic response. An improvement of the *trade balance* that tends to persist will result in appreciation of the real exchange rate, either through nominal appreciation of the currency or through monetary accommodation. When the underlying cause of the trade imbalance is the excess of domestic spending over production, as in the United States, the trade balance can only be restored by adjusting private or public spending through changing savings, budget deficits or investment.

When a rise in foreign exchange reserves results from an increase in *demand for money*, the optimal response is monetary accommodation to that rise in demand. A sterilization attempt would entail needlessly high interest rates and a contraction of economic activity. When the shock originates in *domestic monetary contraction*, the optimal response is very much governed by the country's degree of financial openness. A completely open economy will only allow the option to let the currency float upward if monetary contraction is to be sustained. But restrictions on short-term inflows open the option to avoid nominal appreciation and to sterilize capital inflows in order to keep the money supply on target.

The final case is an *exogenous faU in world interest rates*. The resulting capital inflows cause the domestic currency to appreciate in real terms, unless there is sterilized intervention on the foreign exchange market. The nominal exchange rate appreciates when it is flexible as in Peru and the Philippines; the domestic price level rises when the nominal rate is pegged, as happened in Hong Kong over the early 1990s. With either fully floating or pegged exchange rates, the real exchange rate appreciation resides in the failure of the monetary authorities to supply the mix of assets which foreign and domestic investors are now demanding. The authorities do nothing in the floating-rate case; they issue money in exchange for foreign assets in the pegged-rate case; they should issue bonds instead, by engaging in sterilized intervention (Kenen 1993). Sterilized intervention of the 1990s inflows has been practised most aggressively in Chile and Malaysia.

Identify the Limits of Foreign Indebtedness

Only very rough rules of thumb are available to set a prudent limit of the size of capital flows that can be accepted (Williamson 1994). While in 1994 many observers started to realize that Mexico's current account deficit was reaching a level that would be unsustainable (8 percent of GDP), there was no theory behind such observation. In practice, the intertemporal budget constraint does not help, because many poor countries have been allowed to run deficits for an almost unlimited time period. Some capital flows, such as foreign direct investment inflows, are less vulnerable to withdrawal and are not debt-creating; but they cannot be fully ignored either since they also generate a need for foreign exchange earnings to service remittances. Economists therefore, when asked to assess prudent limits for current account deficits, tend to recur to a debt-dynamics equation:

$$d_t = d_{t-1} (i^* - n) + c_t \tag{1}$$

where the debt/GDP ratio rises when the interest rate on existing debt, i^* , exceeds GDP growth, n , or by the amount of the noninterest current account deficit as a fraction of GDP, c_t , The relevant interest rate

here is the effective rate, which is the weighted average across all kinds of debt, creditors, and currency denominations. Equity-related inflows can be incorporated in principle, by imputing the dividend yield rather than the effective interest rate.

A prudent limit for current account deficits can be derived from here. It is obvious that the size of the sustainable deficit depends very much on the effective interest rate and on the country's growth rate. With more concessional flows or equity-related inflows, a bigger deficit ratio can be sustained; the same holds for a high-growth country. An often-quoted rule of thumb (Williamson 1994) for the net debt/GDP ratio is that it should not exceed 40 percent. Once the country has reached that level, the noninterest current account as a fraction of GDP should prudently not (at least for long) exceed the difference between its growth rate and the effective interest rate. Here we have a major difference between, say, Mexico and Thailand whose current account deficit also reached 8 percent of GDP in 1994. Table 6 gives a stylized account of that difference, assuming a debt/GDP ratio of 40 percent (which in fact has been reached in both countries).

Table 6 demonstrates that there is nothing automatically unsustainable about a country running a high current account deficit relative to GDP, as long as it is matched by a high growth rate. Inclusive of interest payments, Thailand can run a deficit on its current account in the order of 4.6 percent of GDP (adding 40 percent of interest payments to the noninterest deficit), while Mexico can only afford a current-account deficit of 3.0 percent of GDP to hold the debt/GDP ratio at a constant 40 percent. Likewise, a low-income country such as Pakistan can run a higher deficit on its current account than Mexico, even when its growth potential is similar, because its average interest cost will be around two percentage points lower due to a high share of concessional capital inflows.

Table 6: The Sustainable Debt-Related Current Account Deficit and GDP Growth

	[Interest service, % of external debt (1)]	-	[Dollar inflation ^a (2)]	-	[Real annual GDP growth potential ^a (3)]	=	Sustainable non-interest current account deficit ^b (4)
Mexico	6.7		3.0		4.5		0.32
Thailand	6.9		3.0		8.5		1.84

Source: World Bank *World Debt Tables* 1994, 1995; own calculations.

^a assumed.

^b on debt-creating flows, with no increase in the debt/GDP ratio.

Discourage Above-limit Short-term Inflows

Capital market failures can call for direct measures to discourage capital inflows. In particular developing country borrowers are faced with a supply curve of foreign savings that is horizontal until a certain net debt position (the level of which is unknown ex ante) but, at some point, turns steeply upward. As Chile experienced in the early 1980s and Mexico did now, private market participants do not internalize the social cost of their borrowings abroad (Harberger 1985), and that market failure, not unlike the congestion externality in road traffic, justifies capital controls on short-term inflows, such as a tax on short-term external credits. The underlying paradigm is that the monetary authorities (a) pursue longer-term objectives than do private agents operating in financial markets, and (b) that they are better informed about future macroeconomic trends and their long-term effects on the economy (Zahler 1992). Before resorting to capital controls, however, the monetary authorities should eliminate any remaining subsidies to inward investment, such as free deposit insurance (Williamson 1994).

One cannot be dogmatic on the benefits of completely unrestricted capital flows; even the major market participants agree. J.P. Morgan (1995,12) notes in its *Emerging Markets Economic Outlook*: “Most countries in Asia explicitly restrict short-term inflows and limit foreign borrowing by residents. The two most successful economies in Latin America-Chile and Colombia-do likewise”.

Chile, after having phased out the subsidies provided to inward investment by debt-equity swaps, imposed a 20 percent reserve requirement against foreign holdings of bank deposits which was raised to 30 percent in 1992. Further, a tax of 1.2 percent was imposed on short-term external credits. Colombia imposed a 3 percent tax on transfers from abroad in 1991. Malaysia reimposed foreign exchange control measures in early 1994, limiting banks’ holdings of foreign funds that were not trade-related or intended for investment in plant, equipment, or inventory stocks. Thai mutual funds have been prohibited from purchasing non-Thai assets. Even Singapore prohibits short or long Singapore dollar positions unless the documentation can be produced for the underlying trade transaction, and portfolio controls still apply to Singaporean financial institutions.. Korea and Taipei,China have never lifted certain foreign exchange controls, and Taipei,China placed a ceiling on foreign holdings of listed Taiwanese shares (Reisen and Yeches 1993, Glick and Moreno 1994, Greenwood 1994). Asia also restricts equity inflows more than does Latin America, again with the exception of Chile. Table 7 confirms the restrictedness of Asian stock markets by comparing the regions’ global market weights (IFC global index) with those where foreigners are free to invest (IFC investable index).

Table 7: Stock Market Investibility, 1993

	Stock Market Weights Global	(%) within Emerging Markets Investable
Asia	63.7	42.5
Latin America	31.1	48.8
Chile	3.5	1.6
Other Emerging	5.4	8.7

Source: IFC *Emerging Market- Factbook* 1994.

Foreign exchange controls, however, have their well-publicized drawbacks. First, if they could be enforced effectively, they do so at the cost of interfering with the international integration of financial markets; such interference invites misallocation of resources because the country’s residents face other prices and returns (generally, lower) for a given asset than do people elsewhere and because the controls may preclude the benefits (important in poor countries) of consumption smoothing. Second, the effectiveness of capital controls tends to erode over time since people find ways to evade them which in turn risks to trigger an ever tighter net of capital controls imposed by the authorities.

Observe the Tradeoff Between Price Stability and Competitiveness

What should be done when stabilization of the domestic price level does not precede an open capital account? It is tempting for the monetary authority to either let the currency purely float in order to control monetary aggregates or to resort to exchange-rate based disinflation by means of an active crawl or by means of a currency-board arrangement. Although theoretically elegant, such exchange-rate regimes carry considerable risks of generating an unsustainable overvaluation as a result of volatile capital flows (for an early warning on Mexico’s overvaluation, see Reisen 1993a).

The complication for exchange rate management arises because inflation tends to be built into expectations, via implicit (or even explicit) indexation in goods and labor markets. This makes goods prices and labor costs sticky, while financial markets tend to be forward-looking. This asymmetry

between the labor market and financial markets raises stabilization costs by producing real exchange rate overshooting. If the government which wants to bring down inflation firmly believes in domestic monetarism, as it did in New Zealand from 1984 to 1988 and recently in Peru, it will dismantle controls and opt for a clean float. With a clean float of the exchange rate and no capital controls, the effectiveness of monetary policy is enhanced by both domestic demand (tight credit) and foreign demand (strong currency). However, the effectiveness of monetary policy has an immediate and often persistent cost in terms of external competitiveness (Joumard and Reisen 1992).

In developing countries exchange rate pegs translate easily into overvalued real exchange rates. Capital inflows tend to be powerless to arbitrage away large interest rate differentials vis-a-vis industrial countries. To be sure, interest rates embody country risks (higher than in OECD countries) and real overvaluation fuels the exchange risk premium. But there are institutional factors, too, which explain the much-observed lack of interest rate convergence toward world levels (Fischer 1993).

With positive nominal interest rate differentials against the world financial markets (reflecting microeconomic causes or the ongoing stabilization effort), a credible peg can induce excessive portfolio inflows which easily exceed the sterilization capacity of the central bank. The resulting excess demand can, in principle, be eliminated by fiscal or income restraint. In many developing (and some industrial) countries, however, the opposite is likely to happen because excessive inflows tend to undermine support for restrictive policies. When exchange rate pegs help to bring down inflation, the disinflation performance is often unsustainable (Larram and Reisen 1994). Exchange rate-based disinflation starts to succeed only once the implied overvaluation dampens domestic wages and prices, helped by growing unemployment and appreciation. The subsequent correction of excess unemployment and overvaluation will inevitably imply a return to higher levels of inflation.

The high degree of international capital market integration attained over the last 10 years often places governments in a situation where they pursue too many targets with too few policy instruments. While this dilemma calls for setting clear priorities, it has to be realized that the policy tradeoffs involved are radically different from a situation with only limited capital mobility. That change has immediate implications for the choice of the appropriate exchange rate regime. In the 1980s still, the policy to anchor inflationary expectations on a stable currency (such as the US dollar) was largely guided by the desire to raise the credibility of the policymaker. The 1990s have clearly shown, however, that pushing too hard (aiming to disinflate too quickly) to establish the credibility of the policymaker may well destroy the credibility of the policy. It is thus wise not to be overambitious and singleminded with inflation targets in the low-level single-digit rate when capital flows in. The experiences in the early 1980s and 1990s in much of Latin America and Asia provide a case for targeting money *and* real exchange rates simultaneously.

Policies to Target Money and Exchange Rates

In view of volatile capital flows, the authorities should (and many do) aim at restraining the inflationary and/or risky domestic credit expansion and the unsustainable real exchange rate appreciation associated with these flows. In other words, I assume that the authorities will not be prepared to accept either a pure float of their currency or an irrevocable currency union—the two extremes between which Obstfeld (1995) sees no comfortable middle ground any more with integrated capital markets.

Neither of these two extremes can appeal to emerging market authorities. Given the thinness of their exchange and other financial markets, a pure float seems impracticable for most developing countries; domestic monetary aggregates constitute an unreliable anchor for countries under financial reform; and flexible exchange rates are likely to overshoot their long-run level with sticky prices. For a number of reasons supported by the criteria developed in the theory of optimum currency areas (notably, the relatively small degree of regional trade integration) and by the Balassa-Samuelson theory on the productivity-related divergence of real exchange rate trends (Reisen and van Trotsenburg 1988), a

currency union is not quite yet within sight anywhere in Asia or Latin America. Thus, we are bound to occupy the middle ground between these two extremes. What are the options?

- *Fiscal policy.* With an open capital account, the traditional Mundell assignment has monetary policy acquire a comparative advantage in dealing with external balance, while fiscal policy serves to maintain internal balance. Fiscal demand management can rely on a macro effect and a composition effect (Corbo and Hernandez 1994). By tightening government consumption, the interest rate can be lowered and thus choke off some of the capital inflows attracted by positive interest differentials. The composition effect also helps to avoid an appreciation of the real exchange rate as most of the government consumption tends to be spent more on the nontradable sector, unlike private consumption. However, an activist fiscal policy requires sound government finances, and the government budget may be too inflexible to adjust to macro policy needs in time.
- *Sterilized intervention.* When the rise of foreign exchange reserves is identified to originate abroad, central banks are advised to absorb such rises (to resist nominal appreciation), while simultaneously reducing domestic credit in order to avoid an inflationary increase in the money supply (Frankel 1994, Reisen 1994b). As the Mexican authorities learned in 1994, sterilized intervention is an asymmetric policy which provides useful short-term relief in the case of excessive *inflows*, but is rapidly ineffective in the case of *outflows* when foreign exchange reserves fall to zero. Many economists are dismissive of sterilized intervention, however.

First, while there is agreement among economists that nonsterilized intervention (as any other monetary policy) can affect nominal exchange rates, the effectiveness of sterilized intervention is much more controversial. Changing the composition of central bank assets without changing their aggregate size, it is often argued, cannot be an effective policy to influence the relative price between two monies. Such agnosticism ignores the *portfolio-balance* channel; in the case of capital inflows, the corresponding rise in the central bank's net foreign assets will be sterilized by a rising supply of domestic currency bonds. If domestic and foreign bonds are imperfect substitutes (due to currency or sovereign risk), investors will require a higher expected return on domestic bonds to hold their larger outstanding stock, and the currency will tend to depreciate. But to the extent that sterilization drives short-term interest rates higher, it may perpetuate excessive capital inflows and real appreciation for a while.

A second objection to sterilized intervention, particularly raised in the Latin American context (Calvo, Leiderman, and Reinhart 1993), stems from the alleged fiscal costs. This objection is based on two arguments: (a) To dampen the appreciation, the central bank typically has to swap low-yield foreign exchange for high-yield domestic bonds; the accumulated interest differential can become an important fiscal (or quasi-fiscal) burden. (b) Sterilized intervention deprives the government of a reduction in its debt-service burden by preventing the decline in the domestic interest rate that normally accompanies a capital inflow. Both arguments are unlikely to hold in present value terms if the capital inflow and exchange rate appreciation are correctly assessed as temporary. With risk premiums in domestic interest rates sufficiently small, the short-term fiscal losses derived from swapping low-yield foreign exchange for high-yield domestic bonds should be partly offset by a subsequent capital gain derived from the appreciation of foreign exchange reserves. Governments might also want to follow a suggestion laid out by Dornbusch and Park (1995): create low-coupon, local-currency, long-term bonds exclusively for foreigners for sterilization purposes to discourage short-term inflows and to lower sterilization costs. Finally, the authorities can swap government excess savings (originating, say, in social security funds or public enterprises) held with banks into (and out of) government bonds (Reisen 1993b). This practice can be considered as a generalized form of sterilized intervention.

- *Reserve requirements.* By imposing reserve requirements on bank deposits, the Central Bank reduces domestic credit expansion following a capital inflow by directing banks to hold cash or

deposits at the central bank. As the reserve requirements-provided they exceed the level of reserves voluntarily held by the banks-drive a wedge between lending rates (which rise) and savings returns (which drop), they constrain additional inflows of foreign capital as well as the quantity of deposits and of loans. Rojas-Suarez and Weisbrod (1994) show that the decision whether to sterilize inflows (in the sense described above) or to raise reserve requirements should be linked to the strength of the central bank relative to that of the commercial banks as the decision implies a choice on where to concentrate resources. They conclude that, with a weak banking system, the central bank should opt to sterilize by issuing liabilities directly to the public rather than imposing reserve requirements; the latter weaken the banks as borrowers are diverted to lenders who may escape such reserve requirements.

- *Some exchange rate flexibility.* Except when extremely open and when fighting hyperinflation, countries are advised to cope with volatile capital flows through some exchange rate flexibility. First, flexible exchange rates will allow to accommodate with nominal appreciation rather than with higher inflation the trend appreciation of the real equilibrium exchange rate which reflects superior productivity growth and the corresponding rise in relative prices for nontradables (the Balassa-Samuelson effect). Second, widening the band of permissible exchange rate fluctuations can reinforce the perception of foreign investors and domestic exporters that the inflow-related appreciation is temporary. Such perception will dampen short-term inflows by raising the currency risk premium in local interest rates while avoiding discouragement of investment in the tradable sector. The flexible crawling peg complemented by a wide band has been successfully managed in Chile and Israel (Helpman, Leiderman, and Bufman 1994). By contrast, fixed exchange rates (including currency board systems) and active crawling pegs are an invitation to speculative, self-fulfilling attacks even with restrictive fiscal and monetary policies (Obstfeld 1995).

In the foreseeable future, the middle ground between a pure float and monetary surrender will well be more comfortable for Asia's and Latin America's economies than for the members of the European Monetary System, as long as capital accounts are not fully open, as there is a general lack of access to foreign funds and as governments retain influence on their domestic financial institutions. But with heavy capital flows, no single policy will do to simultaneously target money and exchange rates and to aim for external as well as internal balance.

References

- Agosin, M. R., 1994. Saving and Investment in Latin America. UNCTAD Discussion Papers No. 90. UNCTAD, Geneva.
- BIS (Bank. for International Settlements), 1994. *64th Annual Report*. Basle: Bank for International Settlements.
- Brecher, R., and C. Diaz-Alejandro, 1977. "Tariffs, Foreign Capital, and Immiserising Growth." *Journal of International Economics* 7(4):317-22.
- Calvo, G., L. Leiderman, and C. Reinhart, 1993. "Capital Inflows and Real Exchange Rate Appreciation in Latin America: The Role of External Factors." *IMF Staff Papers* 40(1):108-50.
- Claessens, S., M. P. Dooley, and A. Warner, 1995. "Portfolio Capital Flows: Hot or Cold?" *The World Bank Economic Review* (9)1:153-74.
- Corbo, V., and L. Hernandez, 1994. Macroeconomic Adjustment to Capital Inflows: Latin American Style versus East Asian Style. World Bank Policy Research Working Paper No. 1377. Washington, D.C.
- Davis, E. P., 1995. *Pension Funds: Retirement-Income Security and Capital Markets: An International Perspective*. Oxford: Oxford University Press.

- Dean, J., S. Desai, and J. Riedel, 1994. Trade Policy Reform in Developing Countries Since 1985. World Bank Discussion Paper No. 267. Washington, D.C.
- De Long, B., and L. H. Summers, 1991. "Equipment Investment and Economic Growth." *Quarterly Journal of Economics* (56)2:445-502.
- Devlin, R., R. Ffrench-Davis, and S. Griffith-Jones, 1994. "Surges in Capital Flows and Development: An Overview of Policy Issues." In R. Ffrench-Davis and S. Griffith-Jones, eds., *Coping with Capital Surges: Latin American Macroeconomics and Investment*. Boulder and London: Lynne Rienner.
- Dornbusch, R., and Y. C. Park, 1995. "Financial Integration in a Second Best World." In R. Dornbusch and Y. C. Park, *Financial Opening: Lessons for Korea*. Seoul: Korea Institute of Finance.
- Easterly, W., C. Rodriguez, and K. Schmidt-Hebbel, 1994. *Public Sector Deficits and Macroeconomic Performance*. Washington, D.C.: The World Bank.
- Edwards, S., 1990. "The Sequencing of Economic Reform: Analytical Issues and Lessons from Latin American Experience." *The World Economy* 13(1):1-14.
- Emerging Market Investor*, various years. London.
- Fischer, B., 1993. "Impediments in the Domestic Banking Sector to Financial Opening." In H. Reisen and B. Fischer, eds., *Financial Opening: Policy Issues and Experiences in Developing Countries*. Paris: OECD.
- Fischer, B., and H. Reisen, 1993. *Liberalising Capital Flows in Developing Countries: Pitfalls, Prerequisites and Perspectives*. Paris: OECD Development Centre.
- Frankel, J., 1994. Sterilization of Money Inflows: Difficult (Calvo) or Easy (Reisen)? IMF Working Paper WP/94/159. Washington, D.C.
- Glick, R., and R. Moreno, 1994. Capital Flows and Monetary Policy in East Asia. Pacific Basin Working Paper No. PB 94-08. Federal Reserve Bank of San Francisco.
- Greenwood, J., 1994. "Exchange Rate Regimes and Monetary Stability in Asia." *Asian Monetary Monitor* 18(4):1-9.
- Griffith-Jones, S., 1994. "European Private Flows to Latin America: The Facts and the Issues." In R. Ffrench-Davis and S. Griffith-Jones, eds., *Financial Opening: Policy Lessons for Korea*. Seoul: Korea Institute of Finance.
- Group of Thirty, 1994. *Latin American Capital Flows: Living with Volatility*. Washington, D.C.
- Harberger, A. C., 1985. "Lessons for Debtor-Country Managers and Policymakers." In G. W. Smith and J. T. Cuddington, eds., *International Debt and the Developing Countries*. Washington, D.C.: The World Bank.
- Helpman, E., L. Leiderman, and G. Bufman, 1994. "A New Breed of Exchange Rates: Chile, Israel and Mexico." *Economic Policy* 19:259-306.
- IFC, 1995. *Emerging Markets Factbook 1994*. Washington, D.C.: International Finance Cooperation.
- IMF, various years. *Emerging Markets Investor*. Washington, D.C.: International Monetary Fund.
- _____, various years. *International Financial Statistics*. Washington, D.C.: International Monetary Fund.
- _____, 1994. *World Economic Outlook 1994*. Washington, D.C.: International Monetary Fund.
- J. P. Morgan, 1994. *Emerging Market Economic Outlook*. New York: J. P. Morgan.
- Journard, I., and H. Reisen, 1992. "Real Exchange Rate Overshooting and Persistent Trade Effects." *The World Economy* 15(3):375-88.
- Kenen, P., 1993. "Financial Opening and the Exchange Rate Regime." In H. Reisen and B. Fischer, eds., *Financial Opening: Policy Issues and Experiences in Developing Countries*. Paris: OECD.
- Larrain, G., and H. Reisen, 1994. "Disinflation with Unemployment in Latin America: Sustainable?" In D. Turnham et al., eds., *Social Tensions, Job Creation and Economic Policy in Latin America*. Paris: OECD.
- Obstfeld, M., 1995. "International Currency Experience: New Lessons and Lessons Relearned." *Brookings Papers on Economic Activity* 1:119-220.

- Organisation for Economic Co-operation and Development (OECD), 1995. *Financial Market Trends* No. 60. Paris.
- Reisen, H., 1993a. "Integration with Disinflation: Which Way?" In R. O'Brien, ed., *Finance and the International Economy: 7, The Amex Bank Review Prize Essays*. Oxford: Oxford University Press.
- _____, 1993b. "Southeast Asia and the 'Impossible Trinity' ." In *International Economic Insights* 4(3):21-3.
- _____, 1994a. "On the Wealth of Nations and Retirees." In R. O'Brien, ed., *Finance and the International Economy: 8, The Amex Bank Review Prize Essays*. Oxford: Oxford University Press.
- _____, 1994b. "The Case for Sterilized Intervention in Latin America." In H. Reisen, ed., *Debt, Deficits and Exchange Rates: Essays on Financial Interdependence and Development*. Aldershot (UK) and Brookfield (Ut.): Edward Elgar.
- _____, 1996. "Developing-Country Savings and the Global Capital Shortage." In *Future Global Capital Shortages: Real Fact or Pure Fiction?* Paris: OECD.
- Reisen, H., and A. van Trotsenburg, 1988. "Should the Asian NICs Peg to the Yen?" *Intereconomics* (July/August):172-77.
- Reisen, H., and H. Yeches, 1993. "Time-Varying Estimates on the Openness of the Capital Account in Korea and Taiwan." *Journal of Development Economics* 41(2):285-305.
- Rojas-Suarez, L., and S. R. Weisbrod, 1994. *Financial Market Fragilities in Latin America: From Banking Crisis Resolution to Current Policy Challenges*. IMF Working Paper WP/94/117. Washington, D.C.
- Turner, P., 1991. *Capital Flows in the 1980s: A Survey of Major Trends*. BIS Economic Papers No. 30. Bank for International Settlements, Basle.
- _____, 1995. *Capital Flows in Latin America: A New Phase*. BIS Economic Papers No. 44. Bank for International Settlements, Basle.
- Williamson, J., 1994. *The Management of Capital Inflows*. Institute for International Economics, Washington, D.C. Mimeo.
- World Bank, various years. *World Debt Tables* 1994, Vol. 2. Washington, D.C.
- _____, 1994. *World Development Report* 1994. Washington, D.C.
- Zahler, R., 1992. "Monetary Policy and an Open Capital Account." CEPAL Review No. 48. UN Economic Commission for Latin America and the Caribbean, Santiago, Chile.