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Growth and External Financing in Latin America

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Banco Interamericano de Desarrollo
Departamento de Investigación
Research Department
Working Paper #457*

Growth and External Financing in Latin America

by

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Prepared for the Seminar

**“What is Holding Back Growth in Latin America and the Caribbean? What Should
Governments Do?”**

Annual Meetings of the Board of Governors, Inter-American Development Bank
and Inter-American Investment Corporation

Santiago de Chile
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1. Introduction¹

This paper discusses the economic performance of Latin America in the last decade, paying special attention to growth and the financial sector. In particular, it shows that external factors, such as like U.S. interest rates and the business cycle, play a key role in capital inflows, investment, and growth.² As a result, economic growth in the region tends to be fragile and exhibits a high degree of co-movement, i.e., high cross-country output correlation. This last feature exacerbates fragility, because there is little room for mutual insurance within Latin America in case a country suffers a *bad* shock, and finance during downturns has to come primarily from outside the region.

The “Lost Decade” of the 1980s and the recovery of the early 1990s are clear illustrations of these tendencies. During the 1980s the slow resolution of the debt crisis kept Latin American countries outside the international *private* capital market. In contrast, the 1990s brought a dramatic increase in capital inflows that exceeded expectations. In addition, whenever crises struck, their negative effect on growth was dramatic.

This paper will provide some clues regarding the big swings in capital inflows. It will argue that although these swings are oftentimes triggered by external factors, domestic financial vulnerabilities could seriously contribute to magnifying them. Thus, crisis depth is positively correlated with phenomena like a weak banking sector and large debt amortizations. However, it will also be argued that the central capital market has represented an additional source of disturbance for all Emerging Market Economies (EMs) and not just Latin America.

The central capital market has been instrumental in intermediating capital inflows to EMs since 1990. Unfortunately, however, this market was not impervious to shocks. This became evident during the Russian crisis in which big players in the central market were subject to a liquidity crunch, eventually prompting the Federal Reserve Board and the European Central Bank to lower interest rates. In the meantime, EM securities suffered a serious slump from which they have not yet fully recovered. As a result, EMs, and especially Latin America, have

¹ The authors would like to thank Laura Dos Reis and Patricia Cortés for their valuable assistance. The views expressed in this document are the authors’ and do not necessarily reflect those of the Inter-American Development Bank.

² In a companion paper for this seminar, Calvo, Fernández-Arias, Reinhart and Talvi (2001), we provide estimations of the joint effect of both external factors on capital inflows and growth of Emerging Markets.

been facing sharply higher interest rates. The paper identifies this phenomenon as a key cause of incomplete growth recovery in Latin America.

The paper is organized in three main sections. First, we review growth and economic performance in Latin America over the last 30 years and identify the importance of external finance in explaining them. The second section focuses on the novel conditions in external finance and real economic activity during the past decade, concluding with an analysis of the current state of affairs in Latin America. Finally, we close with some remarks on policy in light of these analyses.

2. Growth in Latin America: The Importance of External Factors

Perhaps the most salient characteristic of growth performance in Latin America is the remarkable importance of external factors. Whether the region regains its growth momentum previous to the recent downturn—in 1997 Latin American displayed its fastest growth since the early 1970s—crucially depends on when, if at all, the international environment upset by recent financial turmoil returns to normal. The following analysis focuses on this critical factor of growth performance.³

Common Factors Behind Latin American Performance

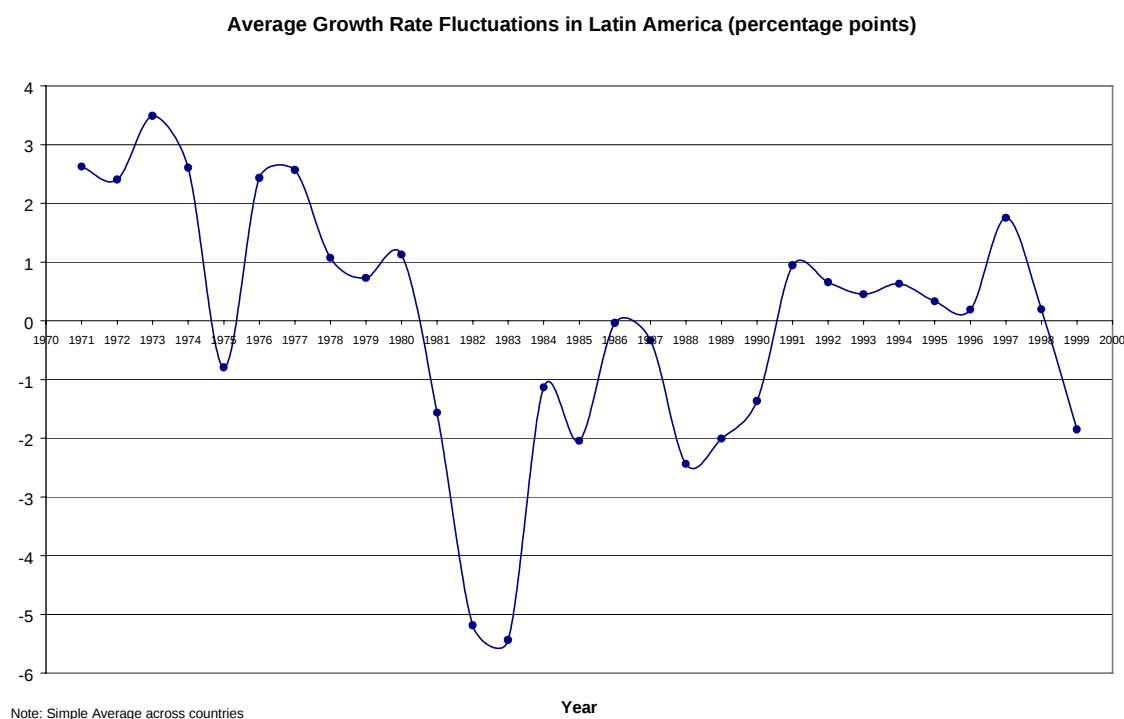
Since most external factors affecting Latin America are common across countries in the region (although an important exception is the price of specific export commodities), the importance of external factors can be gauged by looking at the common features of the performance of individual countries. This approach has been intensively used to analyze financial phenomena in both quantity and price dimensions. For example, it was used by Calvo, Leiderman, and Reinhart (1993), subsequently CLR, to study the role of external factors in the surge of capital inflows in the early 1990s (quantity), and it was also the methodological basis of Fernández-Arias and Rigobon (2000), subsequently FR, in their study of international financial contagion in spreads and returns (prices). Since financial issues are central to growth in Latin America, in this

³ This is not to deny that domestic factors play a key role in Latin American economic growth and that recent structural reform in Latin America has yielded substantial and sustainable growth dividends (see Fernández-Arias and Montiel (1997) for research that brings out this conclusion). However, external factors remain dominant at this juncture.

article we will refer to and revisit the analysis in these and related papers as we go along, as well as open new views on other dimensions.

The evolution of economic growth in Latin America follows a consistent pattern across countries, which suggests that common factors external to the region are very important for growth. The growth rates in individual countries have a very large degree of co-movement, i.e., they tend to go up and down together. As a result, the simple average of country growth rates over time exhibits very ample swings, significantly deviating from the stable growth rate that would be expected if they were uncorrelated. The changes in the average growth over time, shown in Figure 1, are significant and explain a large portion of the variation in growth changes of individual countries (they reduce or “explain” about one-fourth of the overall variation). In fact, this is one major reason why the overall variation of growth rates over time, or growth rate volatility, is so large in Latin America (see Inter-American Development Bank, 1995).

Figure 1.



If the magnitude of the common external shock is measured by the change in average growth, it is possible to estimate the proportion of this common impulse that gets transmitted into

each country's growth.⁴ Table 1 shows that countries differ in the degree to which they are sensitive to external factors, but within a limited range.

Table 1.

Country Sensitivity to Common Factors

Country	Sensitivity
Brazil	1.36*
Ecuador	1.21*
Peru	1.11*
Guatemala	1.08*
Bolivia	0.97*
Argentina	0.95*
Venezuela	0.90*
Paraguay	0.88*
Uruguay	0.87*
T & T	0.86*
Costa Rica	0.78*
Dominican Republic	0.75*
Mexico	0.73*
El Salvador	0.71*
Honduras	0.66*
Colombia	0.59*
Chile	0.58
Panama	0.54
Haiti	0.53
Nicaragua	0.25

* Significantly different from zero at the 95% confidence value.

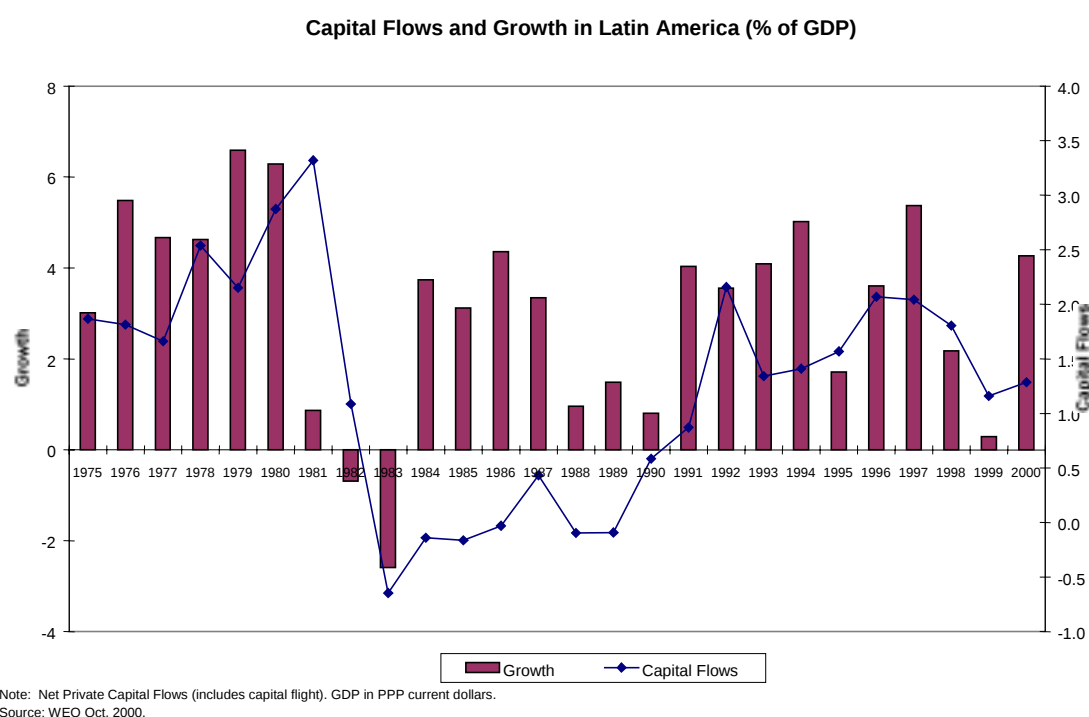
One implication of the importance of external factors for growth performance in Latin America is that prospects need to be analyzed with an emphasis on the likely evolution of the external environment, which is the strategy we follow in this document and in our companion paper, Calvo, Fernández-Arias, Reinhart and Talvi (2001). However, external does not necessarily mean exogenous and/or insensitive to domestic policy. First, the degree to which external factors affect economies depends on domestic policies. These important policy issues are discussed in the concluding section of this document. Second, many important external financial factors are now under discussion under the rubric of international financial architecture and are amenable to policy intervention at the international level.

⁴ Strictly speaking, the change in average growth of the rest of the countries. This may lead to overestimation in the case of large countries exerting measurable influence on the rest of the countries, which may explain why Brazil appears as the most sensitive country of all.

The Importance of External Financing

Growth is closely associated with the magnitude of the net flows of capital into the region (see Figure 2). In fact, regional output growth and private net flows, measured as a proportion of GDP, are positively correlated (34%). The notorious volatility of these net flows is associated with the high growth volatility of the region.⁵

Figure 2.



Why is this so? A large net influx of capital from abroad allows economies to finance large current account deficits (without depleting limited reserves), and therefore to invest domestically beyond their national savings.⁶ The typical macroeconomic outcome is that larger net flows of capital are associated with larger current account deficits, greater investment and

⁵ The standard deviation of the private net flow series amounts to almost one point of GDP, comparable to its average level. However, this relationship should not be necessarily interpreted as a causal relationship; the opposite direction of causation may predominate.

⁶ There is, of course, no guarantee that larger investment will be efficiently applied or capacity well utilized, especially when used to finance public sector deficits, but the association between capital net flows and growth suggests that this has not been a major problem.

lower savings. The observed correlations among these time series, shown in Table 2, bear out these expected relationships. (Larger current account deficits are supported by real exchange rate appreciation. Usually, the effect of net capital flows on the current account, and hence on the real exchange rate, is partially offset by variations in international reserves. An analysis of these and other macroeconomic relationships can be found in CLR.)

Table 2.
Capital Flows and Macroeconomics in Latin America

Year	Capital Flows (%GDP)	GDP Growth	Investment (%GDP)	Curr. Acc. Bal. (%GDP)
1971	0.86	7.24	19.77	-2.69
1972	0.98	7.37	19.83	-2.14
1973	1.38	8.53	21.80	-1.45
1974	1.85	6.98	24.14	-2.33
1975	1.87	3.02	24.55	-4.53
1976	1.81	5.49	24.25	-3.20
1977	1.66	4.66	24.74	-3.03
1978	2.54	4.63	24.59	-4.07
1979	2.15	6.59	23.34	-3.43
1980	2.87	6.29	23.55	-3.53
1981	3.32	0.86	23.11	-5.17
1982	1.09	-0.69	21.13	-6.36
1983	-0.65	-2.59	18.63	-1.23
1984	-0.14	3.74	18.27	-0.17
1985	-0.16	3.12	19.44	-0.23
1986	-0.03	4.36	19.12	-2.40
1987	0.43	3.35	21.49	-1.16
1988	-0.10	0.96	22.76	-1.02
1989	-0.09	1.49	22.06	-0.45
1990	0.58	0.80	19.77	-0.12
1991	0.87	4.03	19.96	-1.34
1992	2.16	3.56	20.49	-2.31
1993	1.34	4.09	21.25	-2.37
1994	1.41	5.02	21.47	-2.80
1995	1.57	1.71	21.35	-2.20
1996	2.07	3.61	21.18	-2.13
1997	2.04	5.38	22.56	-3.27
1998	1.80	2.18	22.21	-4.49
1999	1.16	0.29	20.10	-3.15
2000	1.29	4.27	20.64	-2.92
Correlation with Net Capital Flows (%GDP)		0.34	0.67	-0.69

Note: Net Private Capital Flows, including capital flights, as % of GDP. GDP in PPP current dollars.

Source: WEO.

The previous line of reasoning tells only part of the story. When access to capital markets is closed, which happens with distressing frequency in Latin America, the collapse of

real activity is dramatic. The collapse caused by a sudden swing in the level of the capital account, or “sudden stop,” sets in motion a destructive process in the real economy as credit dries up throughout the economy and production is strangled (see Calvo and Reinhart, 2000a for a detailed analysis). The drastic growth slowdown and recession that followed “sudden stops” in net capital flows (e.g., after the 1982 debt crisis and after the 1998 Russian crisis) are apparent in Figure 2. The difference in average growth between years with open access to financial markets and with closed access to them is more than two percentage points.⁷

Our econometric analysis, based on pooled information from Latin American country experiences over the last 30 years on the quantitative relationship between capital flows and domestic economic activity, confirms the importance of these linkages (see Table 3). We found that an increase in private net capital flows of one percentage point in GDP would typically raise investment almost one for one (86%), thereby depressing savings only slightly, and accelerate growth by almost half a percentage point (39%).⁸ Nevertheless, growth in periods of closed access to external financing is even slower than what the decline in external financing would account for in this estimation, by about one percentage point.⁹ (The next section illustrates these and other relationships in the experience of the last few years.)

Table 3.

External Financing and Economic Activity in Latin America

Dependent Variables	Independent Variables			
	GDP Growth Rate		Investment Rate	
Capital Flows	0.389	0.361	0.864	0.834
	(0.07)	(0.07)	(0.08)	(0.08)
Access to Finance	-	0.010	-	0.010
		(0.003)		(0.004)

* Standard Deviations in parentheses

Note 1: Estimated using fixed effects. The panel includes 20 countries and 29 years.

Note 2: Capital Flows are measured as Net Private Capital flows (%GDP) and Access to Finance is a dummy variable taking the value of 1 for period 75-81 and 90-97 and 0 otherwise.

Note 3: GDP in PPP current dollars.

The availability of external finance also plays a critical role as an insurance device against adverse economic shocks. For example, it may allow consumption and investment levels

⁷ Access periods are 1975-1981 and 1990-1997.

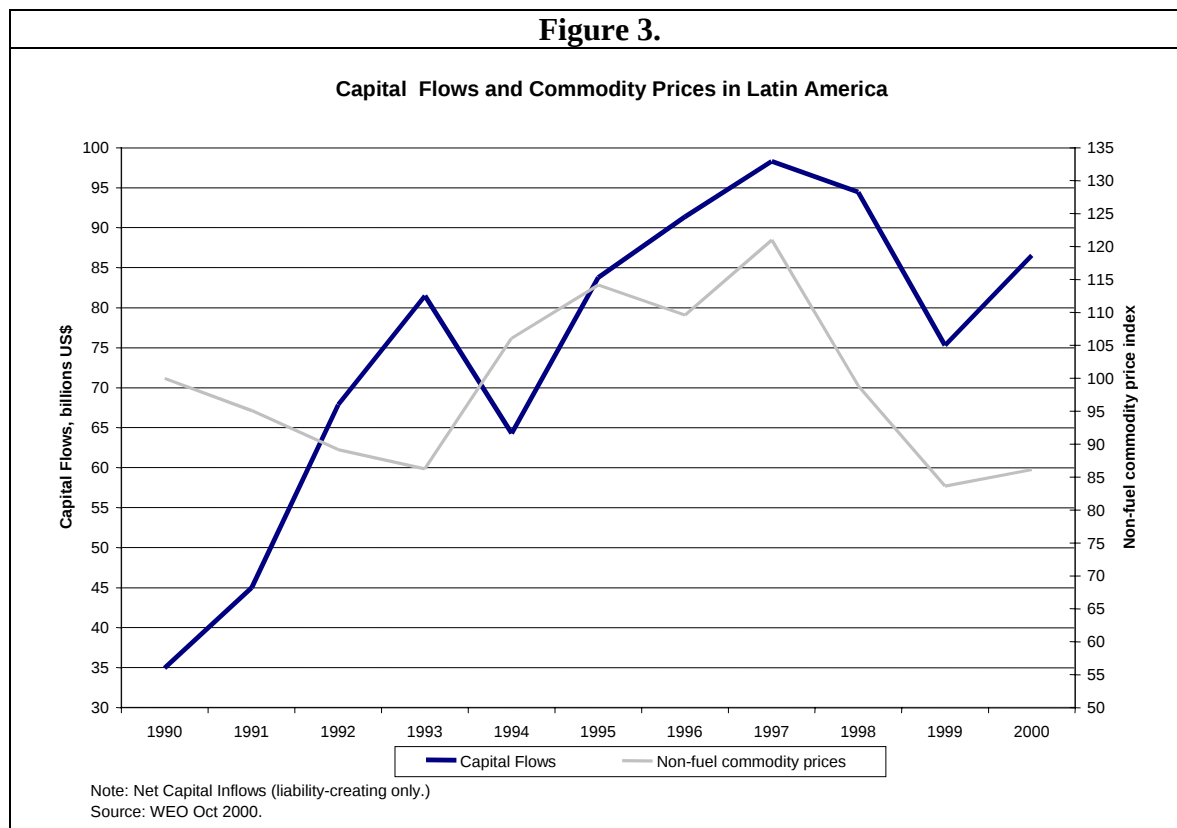
⁸ In this econometric exercise dollar GDP is valued at PPP terms and is therefore less than GDP in nominal dollars. Therefore the previous results apply to capital flows of about one and one-half points of GDP as customarily measured.

to be maintained in the face of natural disasters. The ability to finance negative shocks to export prices is also key to maintaining equilibrium in the balance of payments, which may otherwise be translated into lower investment and growth. As is well known, Latin America faces very volatile international terms of trade and export prices (see IDB, 1995 and Figure 3). The ability to finance these negative shocks is very important in compensating for the absence of explicit insurance mechanisms for these key prices and the lack of export diversification in Latin America.

The worst scenario is when negative external shocks, such as deterioration in commodity export prices, coincide with lack of access to external financing. As we will see, this was the kind of “double whammy” that hit the region in recent years. The sharp decline in commodity prices that began with the Asian crises of 1997 combined with the drying-up of external financing that followed the Russian crisis of 1998 to cause a sharp recession (see Figure 3). Unfortunately, the convergence of both bad scenarios is not coincidental. Deteriorating price conditions worsen country creditworthiness and thus impede access to financial markets. This perverse feature of low creditworthiness makes lack of export diversification extremely costly and heightens the fragility of Latin America’s economic activity.

⁹ Investment also shows a similar extra decline in no-access periods but of a much smaller relative magnitude (a small change in the investment ratio), which suggests that periods of closed access to financing lead to an inefficient allocation of the scarce finance available.

Figure 3.



External Financing: The Role of External Factors

External factors have played a key role in the availability of external financing. For example, negative real interest rates in the 1970s set in motion commercial bank lending to Latin America in the mid-1970s; and high interest rates and recession in the United States precipitated the debt crisis of 1982. The surge of capital inflows in the 1990s was no exception, as shown in detail in CLR. It is shown there that capital inflows were closely associated with a combination of lower US interest rates, stock market and real estate returns, and economic activity.

Fernández-Arias (1995) analyzed the channels through which lower international interest rates contributed to this new wave of capital inflows. The key insight is that the direct effect that international interest rates (r) have on the cost of capital (i) in any economy that is financially integrated into the world is only part of the story, and perhaps not the most important one in high-risk countries. In fact, there is also an indirect channel of influence by which international interest rates affect country creditworthiness, and therefore risk spreads (s) and cost of capital. This unconventional channel, explained below, was shown to be very important in the period

under study. For completeness, we now add a third, residual channel (x) to capture other sources of variation, whose nature we will explore in the next section:

$$i \text{ (cost of capital)} = r \text{ (riskless international interest rate)} + s \text{ (risk spread)}$$

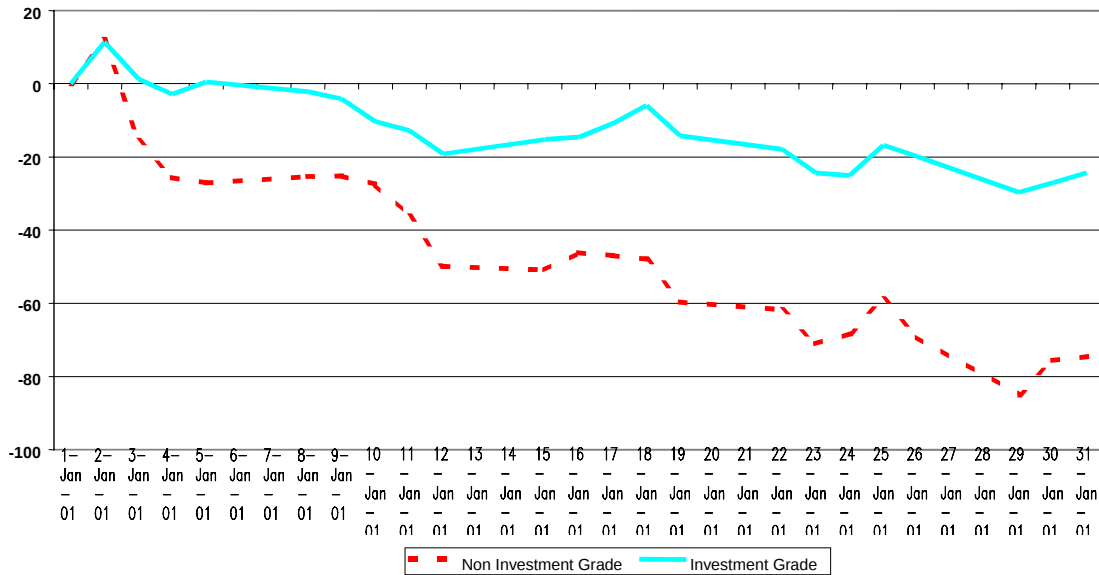
$$s = s(d, r, x), \text{ where } d \text{ is an indebtedness indicator (e.g., debt-to-GDP ratio)}$$

x is an unknown third factor

In this formulation, the risk spread depends not only on traditional debt indicators relating external liabilities to resource bases (such as exports, GDP, or tax revenue) but also on the level of international interest rates, so that country creditworthiness also depends on external factors. In particular, a lower interest rate r leads to a lower spread s and reinforces the direct effect on cost of capital i , which is further reduced. The reason for this creditworthiness channel of transmission is that the country's capacity to pay depends on the present value of future resources, which increases as the discount rate declines. In high-risk countries, i.e., countries with high risk spreads, this indirect effect may be large and dominate the direct effect. In this sense, developing country bonds are like corporate high-risk bonds, whose spreads are very sensitive to the market value of the firm and could be subject to credit rationing. As an illustration, Figure 4 shows the recent decline in Latin American long-term sovereign bond spreads during January 2001 caused by the US Fed rate reduction of 100 basis points. As predicted, the effect on high-spread bonds is larger than on low-spread, investment-grade bonds. U.S. corporate junk bonds also benefited. In fact, the Pure High Yield spread index of Bear and Sterns declined even more over the same period, by about 170 basis points.

Figure 4.

Changes in Bond Spreads during January 2001 (basis points)

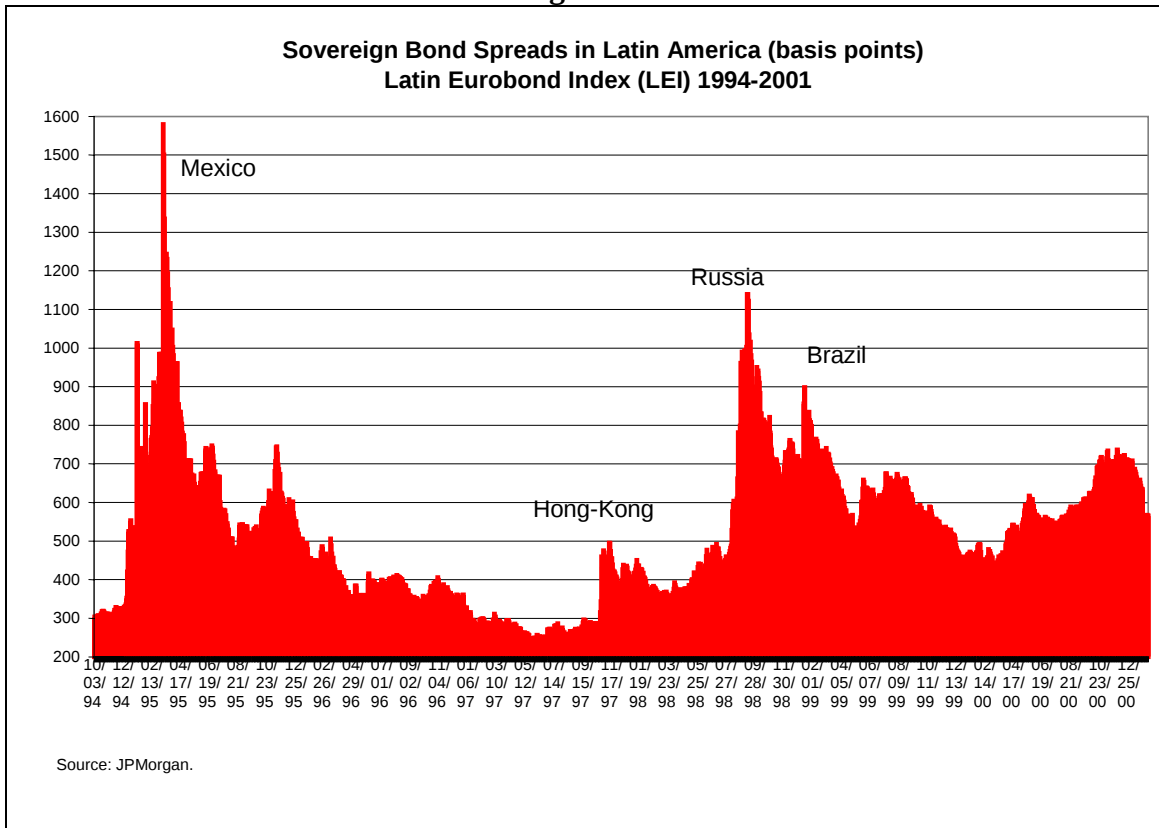


Note: Based on simple average of long-term sovereign bond spreads of investment grade countries (Chile, Mexico, Uruguay) and speculative-grade countries (Argentina, Brazil, Colombia, Venezuela).

Source: Bloomberg and own calculations.

Negative shocks to the value of the country's resource base increase the risk spread and the cost of capital (thus, s is an increasing function of d). For example, as mentioned above, a decline in international terms of trade would have such an effect. The increase in Latin American sovereign risk spreads starting in 1997 can be interpreted in this way (see Figure 5). With the Russian crisis, however, spreads skyrocketed without any measurable change in the identified variables in the equation above, domestic fundamentals (d) and world interest rate (r). We therefore attribute this change to the residual unknown x . What is the nature of x ? What caused this shift in the spread schedule? We address this question in the next section, but it is important to point out that the increase in spreads starting in 1998 resulted from a new form of external factor that will be termed "financial contagion," which led to the widespread increase in EM bond spreads.

Figure 5.



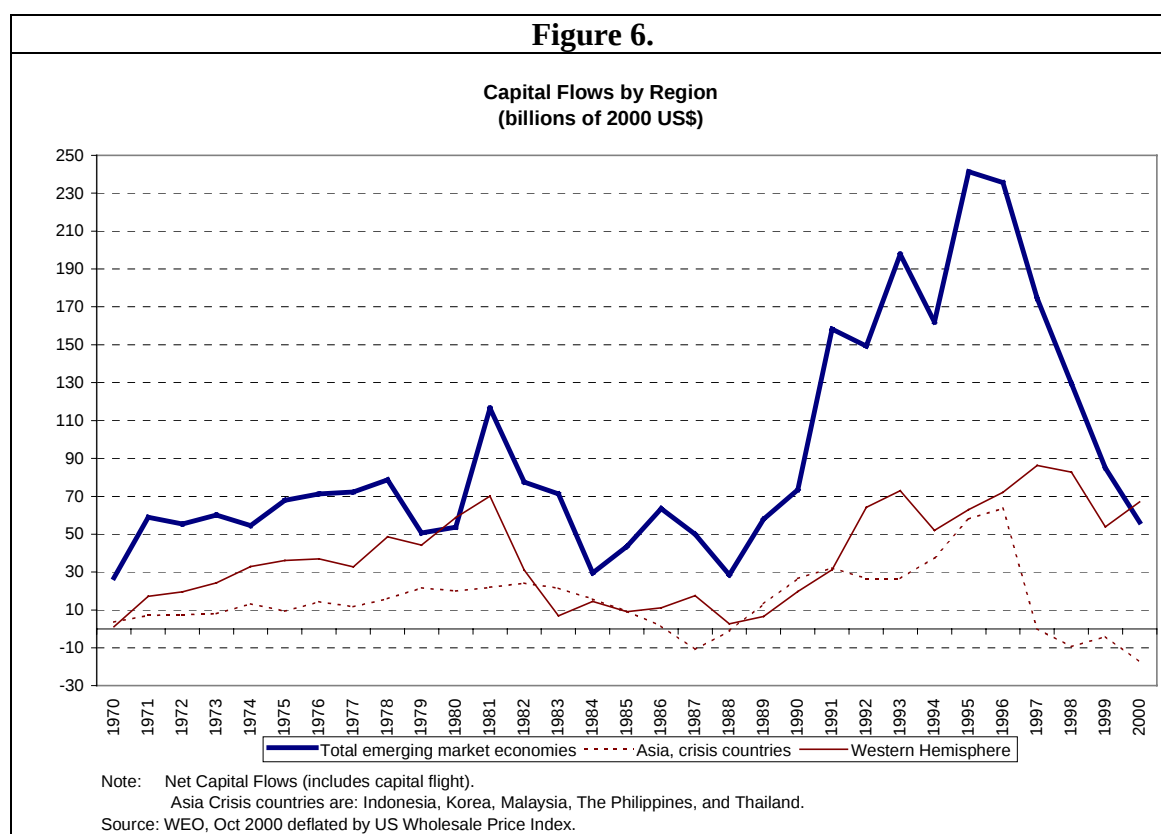
External financing is directly affected by these exogenous financial conditions. An increase in the cost of capital leads to less external financing, less investment, and less growth. If such an increase is based on a large risk spread, a sudden stop occurs. In turn, less growth leads to worsening capacity to pay and creditworthiness, which increases risk spreads and reinforces the increase in the cost of capital.

3. Financial Globalization in the 1990s: A Roller Coaster Ride for Emerging Markets

We now focus on changing financial conditions and growth performance during the past decade by examining capital flows in terms of both volume and composition, their price in terms of bond spread, and economic activity. As a result of this “roller coaster ride,” bond spreads appear to have ratcheted up at every turn since the Asian crisis in 1997, casting a long shadow over the future. At the same time, economic activity has slowed down and not yet fully recovered in most countries.

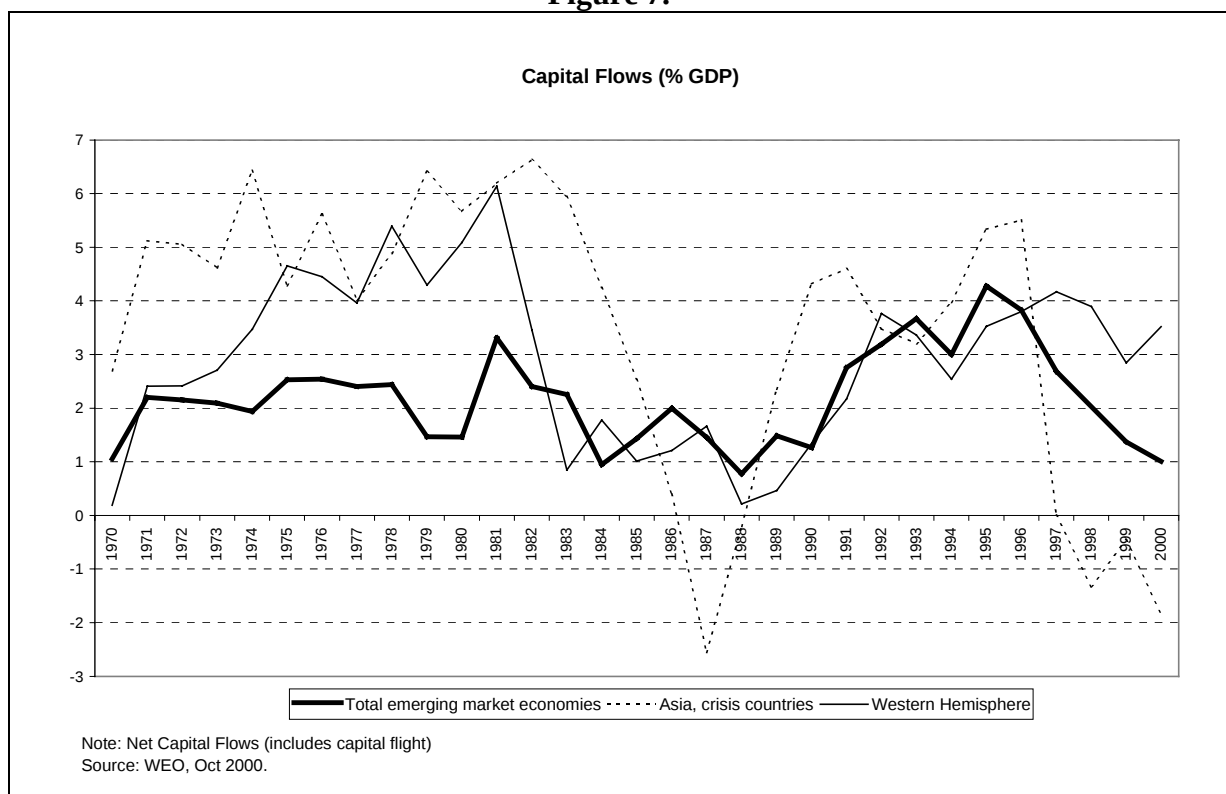
The New Wave of Capital Inflows

Latin America saw a strong revival of capital inflows starting in 1990 after a long period of external financing constraints during the debt crisis of the 1980s. With only a brief interruption around the Mexican crisis in 1994-95, this resurgence continued to increase until the Russian crisis in 1998 (see Figure 6). This phenomenon can be observed with remarkable similarity across countries in the region (see CLR). This outbreak was even more pronounced in the rest of the emerging markets starting in 1989. The universality of this new wave of capital inflows suggests that its root cause must lie in developments in central rather than peripheral countries.



This new wave of inflows to the region was not unprecedented. As shown in Figures 6 and 7, at their peak, similar levels of net capital flows had been observed in 1981, although at that time they proved to be short-lived and unsustainable. Interestingly, inflows are also not unprecedented in the fast-growing Asian crisis countries when capital flows are measured in relation to the size of the host economies.

Figure 7.



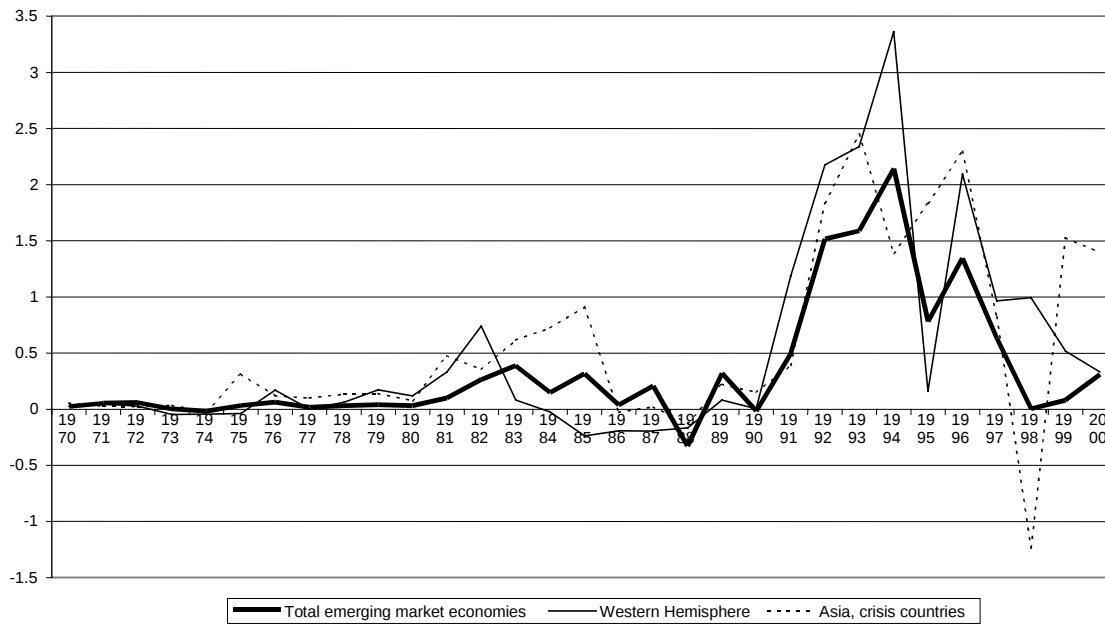
However, the new wave of capital flows to Latin America in the 1990s exhibited a different composition. Its most striking feature was the great importance of previously negligible portfolio flows, both of debt and equity nature (see Figure 8).¹⁰ At the same time, bank borrowing was negligible or even negative, in contrast with the experience in other emerging markets, including the Asian crisis countries (see Figure 9).¹¹

¹⁰ However, in the second half of the 1990s, as analyzed below, portfolio flows largely dried up.

¹¹ See Fernández-Arias (2000) for additional analysis of composition changes and contrasts concerning both supply and demand sides.

Figure 8.

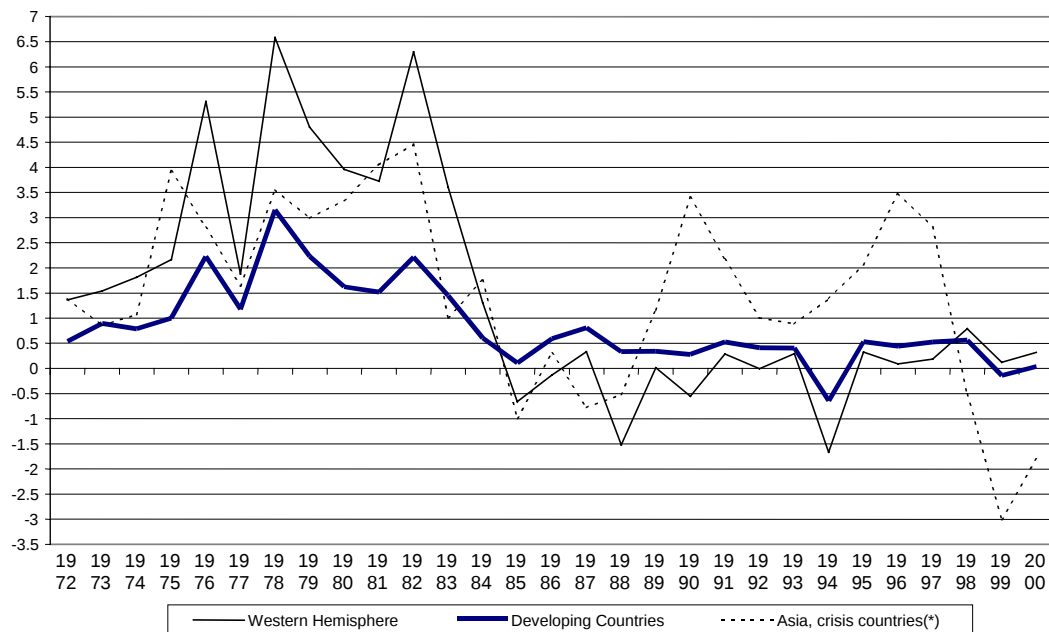
Portfolio Flows (%GDP)



Note: Net Portfolio Flows.
Source: WEO, Oct 2000.

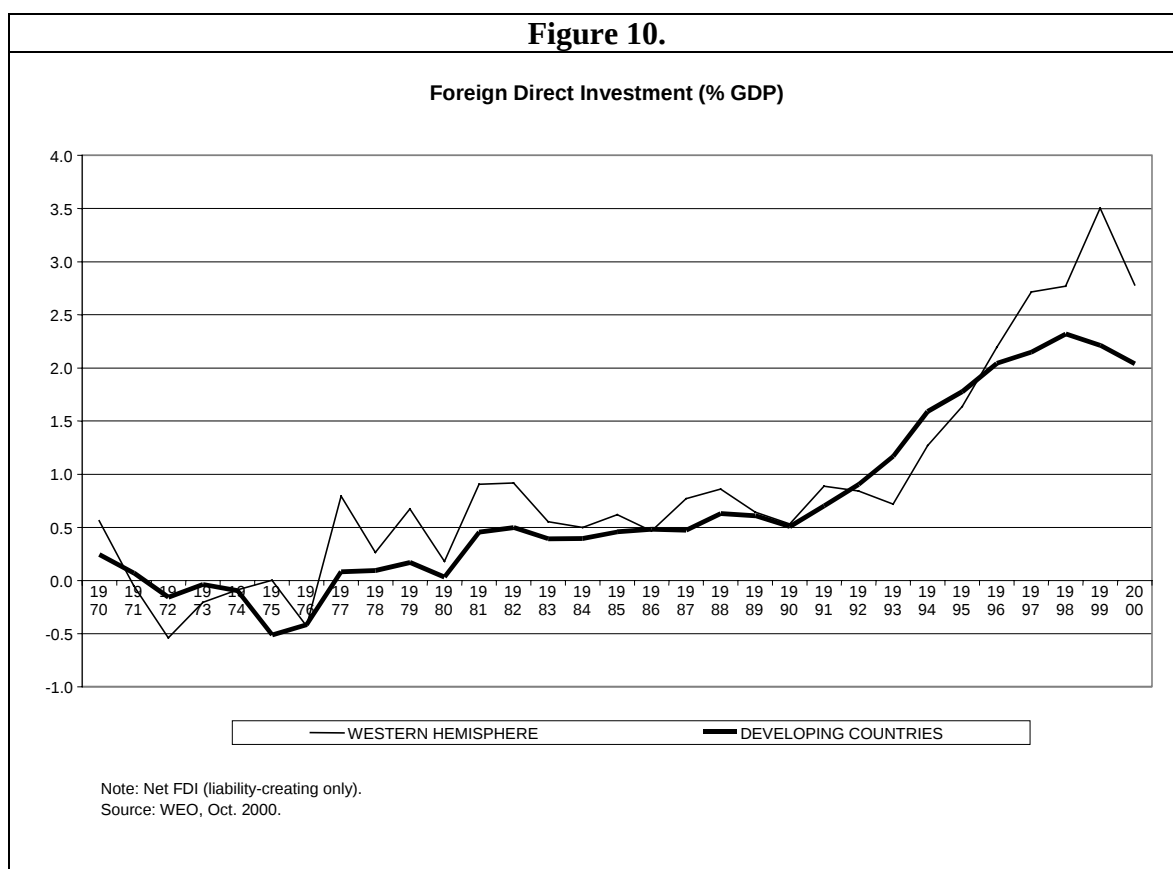
Figure 9.

Commercial Bank Lending (% GDP)



Note: Net Foreign Commercial Bank Lending (liability-creating only).
(*)Includes: Indonesia, Malaysia, The Philippines, and Thailand.
Source: WEO, Oct 2000.

FDI exhibits extremely high growth over the decade, but this feature is not specific to Latin America. The explosive path that FDI followed in the region in this decade is comparable to that in emerging markets overall (see Figure 10), and also qualitatively similar to that observed in industrial countries in the same period. In recent years FDI has represented almost 100 percent of overall net capital inflows, but this situation is likely to change as conditions for debt financing normalize (see Hausmann and Fernández-Arias, 2000).



Why did Latin America experience the new wave of financing of the 1990s? How can the observations above be explained? One clue is given in CLR and subsequent studies, which show that developments in the center, and especially the decline of US interest rates, bear a very close association with the surge of capital inflows in Latin America in the period. More generally, Montiel and Reinhart (1999) confirmed the importance of world interest rates for debt flows to emerging markets. Nevertheless, a complete explanation of the experience needs to account for the fact that Latin America was not considered creditworthy as late as 1989, just

prior to the inflow surge. As Fernández-Arias (1995) pointed out, the expected elimination of the debt overhang through the Brady plan, designed in 1989, combined with the creditworthiness “push” provided by subsequent lower interest rates, may have done the trick of devolving substantial market access to the region.

Still, why is it that Latin America received mainly portfolio flows while other emerging markets, such as the Asian crisis countries, received mainly bank loans? Here we venture to suggest one factor that may have been relevant: the creation of a secondary market for sovereign bonds in Latin America as a result of the Brady bond exchange. An unexpected silver lining of the Brady debt reduction, which mostly focused on Latin America, was the creation for the first time of a mass of long-term bonds that needed to be managed and traded. The creation of this market allowed high-risk portfolios to include Latin American risk and made it worthwhile to invest in acquiring information about Latin American markets, which ratcheted up investors’ interest in the region once they became familiar with it.¹²

The Second Half of the 1990s: Financial Crises and Contagion

Another important characteristic of capital inflows in the 1990s was that funds were largely directed to the private sector (see Fernández-Arias, 2000). By contrast, in the previous inflow episode that led to the debt crisis, external financing was mostly directed toward financing public sector deficits. Initially, this break with the past was seen as insurance against balance of payments crises, because it was expected that the corporate sector knew what it was doing. For this reason, the Mexican crisis of late 1994 came as a surprise to many.

The new features of the Mexican crisis were linked to the bonded nature of the new capital inflows. The refusal of bondholders to roll over short-term public bonds led to Mexico’s inability to come up with the resources to pay on such short notice. The key lesson from this experience was that countries were financially more fragile than previously thought: even if their long-term capacity to pay was sufficient to cover obligations, they could be rendered insolvent if a critical mass of investors exited at once. In this situation, foreign investors could rationally refuse to lend, and a crisis would ensue. Thus, liquidity crises were shown to be a distinct possibility for sovereigns.

¹² The subsequent creation of secondary bond markets across emerging markets may have diluted this initial advantage as a portfolio opportunity by contributing to the establishment of an emerging market “investment class.”

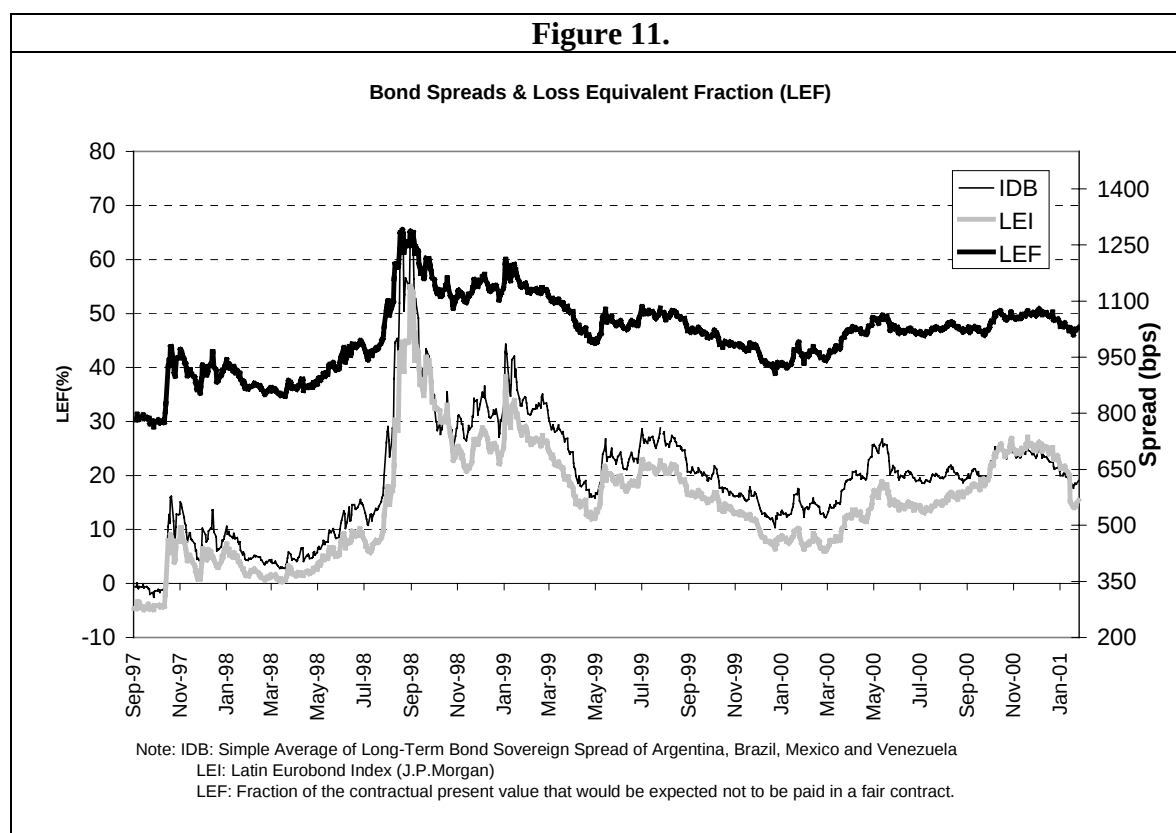
Financial contagion was felt throughout Latin America and beyond in bond spreads and other financial indicators, and for a period many countries lost market access. The international official sector reacted quickly by putting together for the first time a large rescue package. Financial contagion disappeared in a few months, Mexico adjusted deeply but quickly recovered, the rescue package was repaid, investors came back, and the episode was brushed aside as an anomaly.

The second crisis episode was the string of Asian crises of 1997 in Indonesia, Korea, Malaysia, the Philippines, and Thailand. These crises hit some of the high- growth, high-savings emerging markets considered the best risks at the time. It became apparent that liquidity crises were also a possibility in the case of bank lending, whether intermediated through the domestic banking system or directly allocated to local firms. Some observers have argued that the Asian crisis was provoked by the presence of public sector guarantees, strengthened by the Mexican bailout. However, the evidence does not support the view that moral hazard played an important role (Eichengreen and Hausmann, 1999). The main lesson, once again, is that liquidity crises are a real danger and that policy ought to focus on the fragility of the financial system (Calvo and Fernández-Arias, 2000).

As expected, the Asian crises hit Latin America through trade channels, depressing export commodity prices. What was not expected was the significant financial contagion in bond spreads: the Latin American bond spread index increased by about 200 basis points in October 1997. In fact, over half of the jump was recovered over the following few months; by end-July 1998, just prior to the Russian crisis, it had already returned to its peak level (see Figure 5).

The biggest surprise for Latin America was the aftermath of the Russian default in August 1998. Russia is a country with very little real linkage with Latin America, and it represents less than 1 percent of world output. And yet, the financial contagion shock wave was enormous, similar to that felt in the aftermath of the Mexican crisis in 1995. The Latin American bond spread index jumped by 700 basis points to more than 1100 points. The (unweighted) average spread on long-term bonds of the four largest Latin American economies soared even higher (see Figure 11). The corresponding Loss Equivalent Fraction (LEF), equal to the fraction

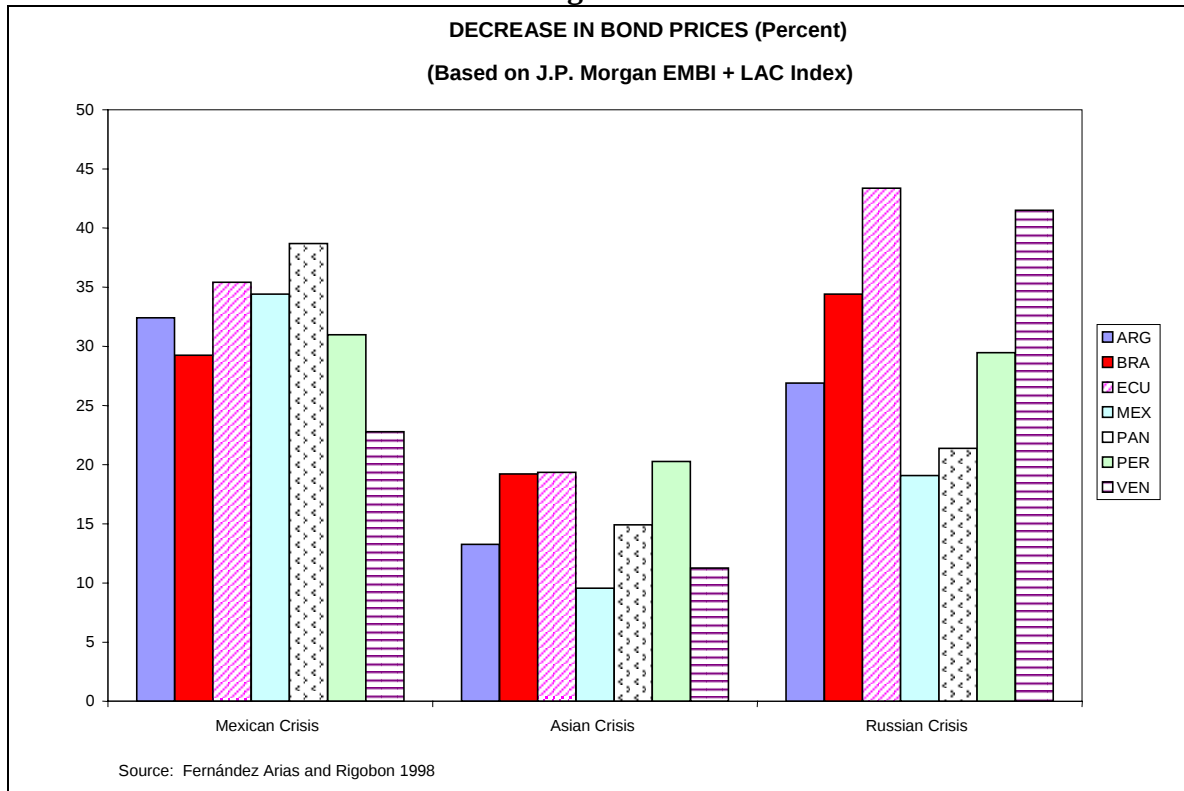
of the contractual value of the bond that would not be expected to be recovered in a fair contract¹³ skyrocketed to 60% and has remained consistently above 40%!



Two other characteristics of contagion are worth noting in order to understand its nature. First, it was widespread across countries (and regions too), which points to a common factor beyond the real economy. For example, witness the sensitivity to contagion of various countries in the three crisis episodes of the 1990s shown in Figure 12. Second, while the implied absolute valuations of spreads are difficult to rationalize in terms of risk of default because they suddenly become so large, the relative valuations across countries remained unchanged, which suggests that the market rationally discriminates (see FR).

¹³ The expected present value of the contractual stream of payments that would be paid in excess of its nominal value in the absence of default—and therefore would be expected to be unpaid in a fair contract.

Figure 12.



How does one make sense of these facts? The theory most consistent with all the evidence is that financial contagion was caused by weakness of the financial intermediaries investing in emerging markets. In the Russian crisis, accumulated losses and high leverage led to a liquidity crunch, forcing a sell-off of emerging country paper across the board at fire sale prices (see Calvo, 1998 for an analysis). This explanation is consistent with the fact that the cross-country correlation of bond returns increases during bad times (FR and IMF, 2001).

Furthermore, bond spreads showed a strong tendency to recover prior levels after each outbreak (see Figure 11 above), as could be expected from a temporary market disequilibrium offering arbitrage opportunities. For example, by the end of 1998, only three months after the worst of the Russian crisis, risk spreads had recovered most of their losses (albeit helped by generous liquidity policies of industrial countries concerned with the health of their own financial institutions, such as LTCM). The Brazilian devaluation of January 1999 was no more than a brief interruption of this process, which was again underway as early as March. This rapid recovery pattern was followed closely by individual countries. Yet, since mid-1999 spreads have not shown any consistent trend and recovery has not been completed in full. Similarly, the

increase in risk spread in the second half of 1997 had not been offset by the time the Russian crisis hit. During 2000 spreads showed a general tendency toward deterioration. In sum, recovery was fast but limited.

Table 4 shows risk spreads and loss equivalent fractions (LEF) pre-Asian crises, pre-Russian crisis, and end-January 2001 for long-term sovereign bonds of Latin American countries. The table suggests that the developments associated with the Russian crisis and its aftermath are only half of the story. The question is what may be behind this ratcheting up of spreads, relative to the pre-crisis period of 1997, of almost 300 basis points on average for the big four (Argentina, Brazil, Mexico, and Venezuela), which persists even after factoring in the beneficial effect of US Federal Reserve Board reductions of its rate by 100 points in January 2001. For the big four, on average, spreads increased by almost 300 basis points despite having tightened by 60 basis points in January 2001. The evolution of spreads in Asian crisis countries is not as clear due to unavailable information and because the direct effect of the unfolding of their own crises tends to dominate. Nevertheless, bond spreads in Asia are consistent with the same overall pattern. In particular, they exhibit a parallel deterioration over the course of the year 2000, shown below in Figure 14.

Table 4.

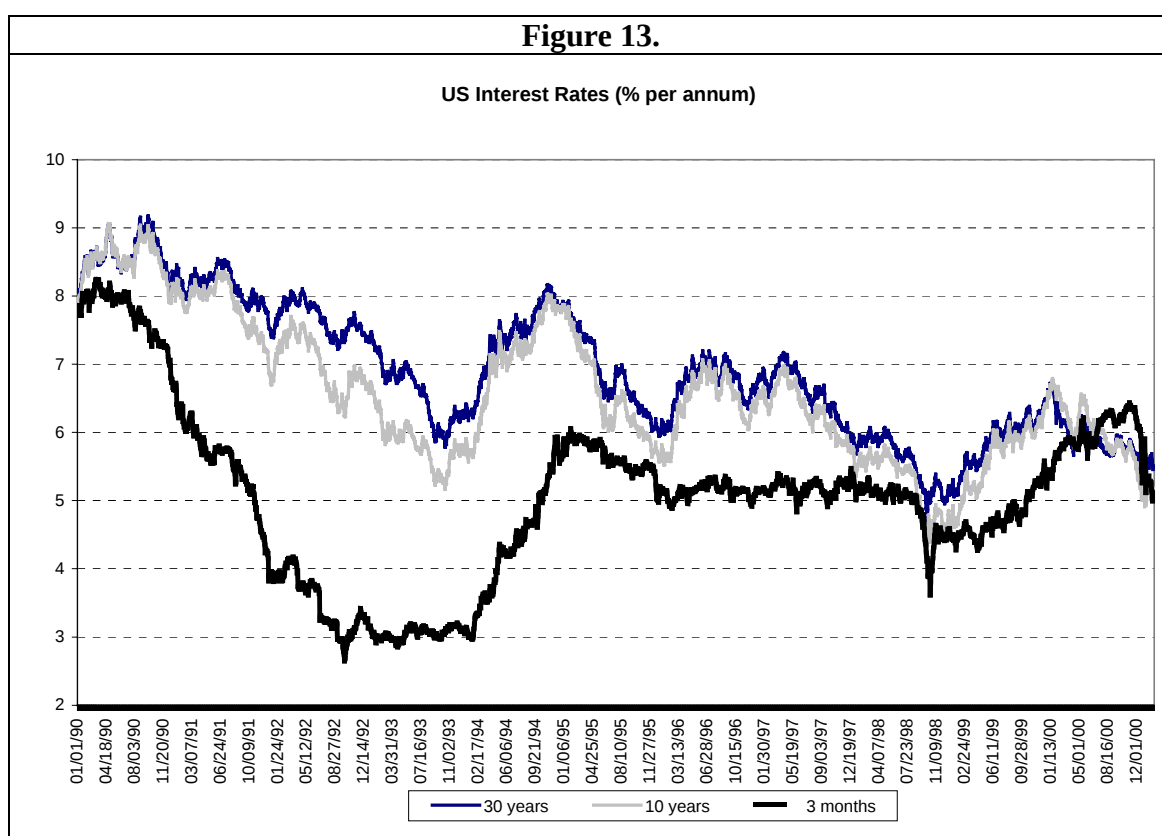
Bond Spreads and Loss Equivalent Fraction (LEF)

Date	(1) 30-Sep-97	(2) 31-Jul-98	(3) 31-Jan-01	(2)-(1) Change	(3)-(2) Change	(3)-(1) Overall Ch.
LAC						
Spreads (bps)						
Argentina	332	444	603	112	159	271
Brazil	371	565	673	194	108	302
Colombia	220	426	666	206	240	446
Mexico	296	401	366	105	-35	70
Uruguay	150	189	275	39	86	125
Venezuela	334	794	808	459	15	474
LEF (%)						
Argentina	30.5	38.7	46.7	8.2	8.0	16.2
Brazil	34.1	49.2	52.1	15.1	2.9	18.1
Colombia	20.2	37.1	51.6	16.9	14.5	31.4
Mexico	27.2	34.9	28.4	7.8	-6.6	1.2
Uruguay	13.8	16.4	21.3	2.7	4.9	7.5
Venezuela	30.7	69.1	62.6	38.4	-6.5	31.9
ASIA						
Spreads (bps)						
Indonesia	157	757	712	599	-44	555
Thailand	179	423	141	244	-282	-38
Philippines	n.a.	398	539	n.a.	141	n.a.
Korea	n.a.	433	212	n.a.	-220	n.a.
LEF(%)						
Indonesia	10.3	36.3	35.4	26.0	-1.0	25.0
Thailand	11.6	24.2	9.8	12.6	-14.4	-1.8
Philippines	n.a.	23.1	29.3	n.a.	6.2	n.a.
Korea	n.a.	24.6	14.0	n.a.	-10.6	n.a.

Note: Loss Equivalent Fraction (LEF) is the fraction of the contractual present value that would be expected not to be paid in a fair contract.

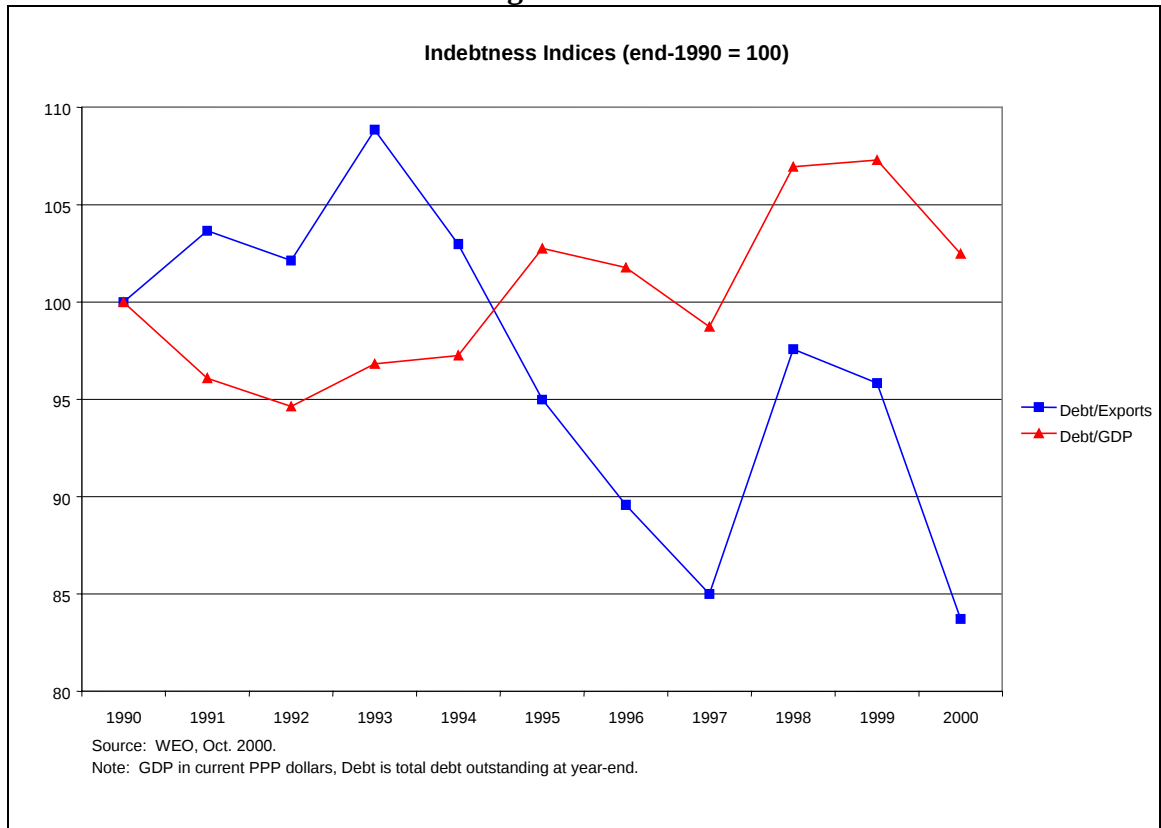
Source: Bloomberg and own calculations.

On the basis of the spread equation above, in which the bond spread is a function of the international interest rate and of capacity to pay, as measured by traditional indebtedness indicators, we first look at the evolution of these two variables as a first attempt at explanation. Dollar interest rates at all maturities are low by historical standards (see Figure 13). The increase of US short-term interest rates during 2000 may have contributed to the increase in bond spreads in the period, but they are no longer higher than in the pre-crisis period. Traditional debt indicators do not appear to explain the deterioration either. Their small increase in 1998-99 was brought down to pre-crisis levels by end 2000, which remain low by historical standards (e.g., prior to the Mexican crisis and to the new wave of capital inflows in 1990) and are bound to improve as real activity recovers (Figure 14). In particular, bond spreads deteriorated as indebtedness indicators improved during the course of 2000.¹⁴



¹⁴ The indebtedness indices in figure 14 were constructed on the basis of IMF WEO statistics for technical reasons, due to data availability and comparability over time. The use of traditional WB-based indebtedness indicators would reinforce our arguments.

Figure 14.

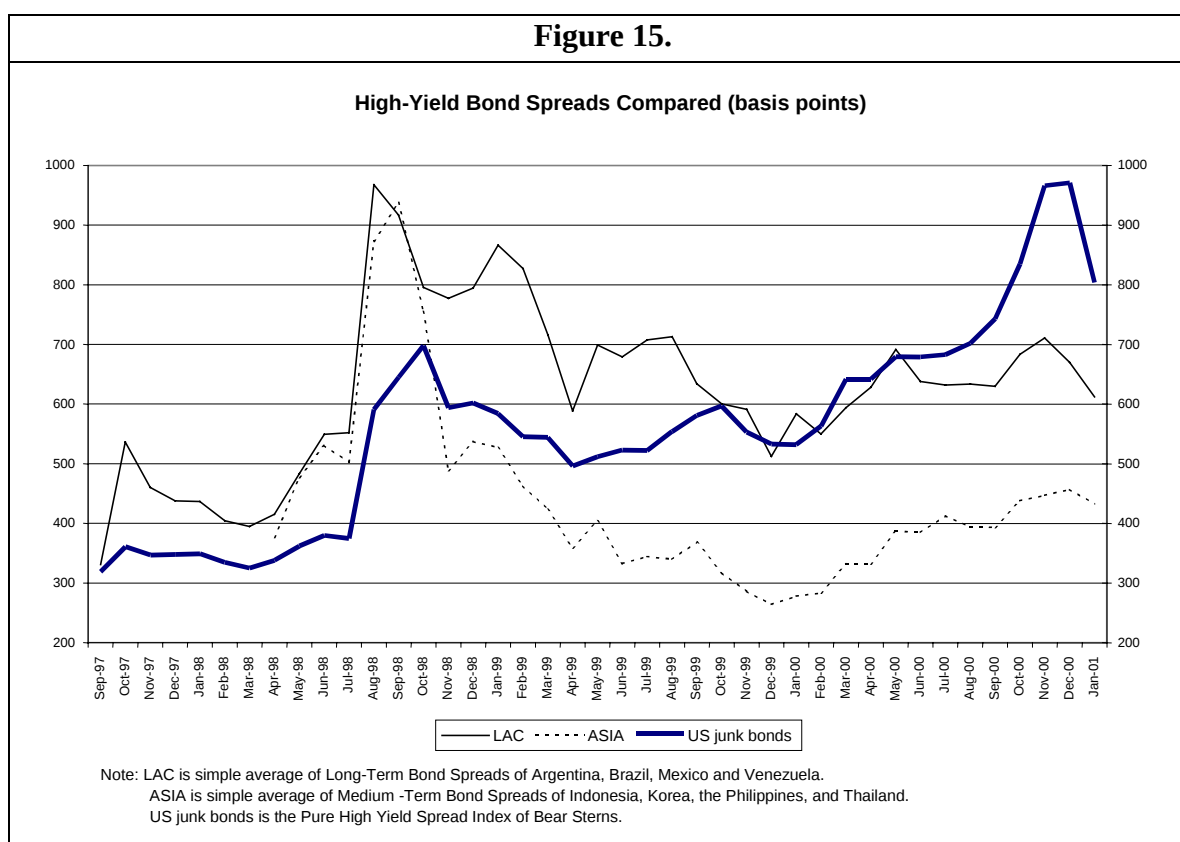


Therefore our search for an explanation needs to focus on other factors for which the past is not a good guide—the variable x in the spread equation. What is the nature of the ratcheting up of bond spreads? We now consider three types of explanations based on the reassessment of the countries' prospects, on changes in the involvement of the official sector, and on problems in financial markets.

The most immediate explanation of bond spreads' ratcheting up is that the market perceives worse country prospects in Latin America.¹⁵ Perhaps it is the expectation of a backlash of the structural reforms of the 1990s, which did deliver faster growth (Fernández-Arias and Montiel, 1997) but failed to improve income distribution (IDB, 1999). Alternatively, perhaps the growth gains of reform were less long-lived than previously thought and sustainable growth is being revised downwards. However, while these hypotheses may have some validity they do not bode well with the widespread nature of the increase in bond spreads during 2000. As shown in Figure 15, it is not only that spreads increased in emerging countries in general, both inside and

¹⁵ At the outset, it is intuitively difficult to rationalize expected contractual losses of 50%, as shown in the LEF index in Figure 11, on the basis of the countries' payments records.

outside Latin America, but also that they increased substantially in the US corporate high-yield segment. This evidence suggests that some of the important underlying forces are unrelated to any reassessment of countries' prospects.



Alternatively, the issue of how the official sector involves itself in financial crises in EMs may be at the root of the increase in bond spreads. One such explanation was born after IMF refused to rescue Russia and its default caused substantial losses to investors. This loss has been mentioned as a good reason why the market reassessed the risk of default in all other emerging markets, anticipating that they might not be rescued in the future. This argument is usually made in reference to the elimination of the moral hazard that official rescue packages would have provided before the Russian crisis, but such a linkage is unnecessary. Justified or not, less official support at time of crises, either because of a change in policy or because the necessary economic and political resources erode over time, implies higher private risk (for a given country's fundamentals). A variant of this explanation, upon which the private sector places substantial weight, is that the unpredictability of the rules of engagement of the official sector,

more than their change, creates fear of an unnecessary or abusive private sector bail-in (private sector involvement, or PSI) and drives up the perception of risk.

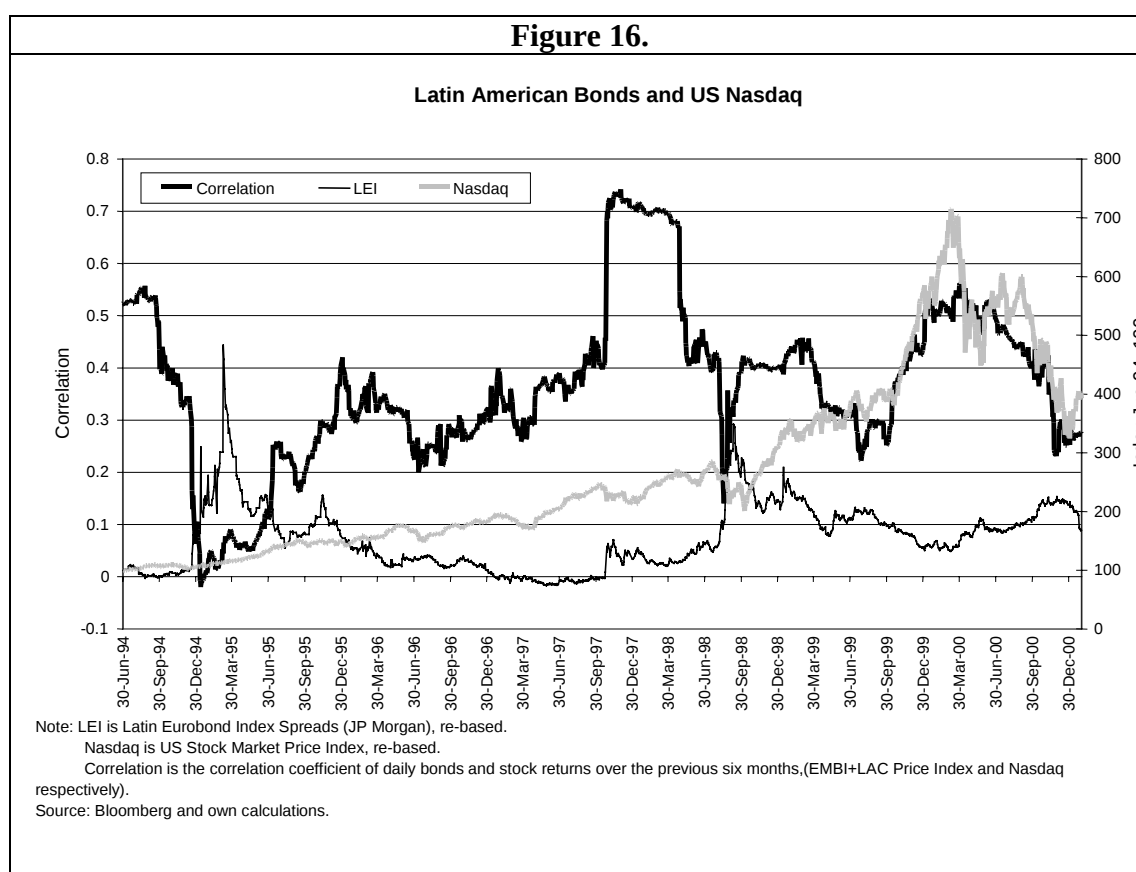
This set of explanations rings true and could account for the widespread deterioration in financial conditions in EMs, but, again, cannot account for the increase in junk bond spreads or other related phenomena in industrial countries, which we analyze below. Furthermore, the extent to which it can be sustained in light of the actual experience of official intervention is uncertain. Even under the pessimistic expectation that the official sector will not be able to make its role more effective in the international financial architecture it is trying to design, the official sector has at least shown its readiness and ability to support fast recovery when economic fundamentals are satisfactory, as in Mexico or Korea. It is true that some of the perceptions of the new doctrine of PSI may have scared the market at times, but the emergency packages of Brazil and Argentina should have gone a long way toward counteracting such impressions.

Finally, there are explanations grounded in problems with financial markets. Country risk, or the probability of default, may have been reassessed simply because we have observed new and unexpected situations that may lead to crisis. For example, as explained above, liquidity crises may appear more likely now. The implication is that the imputed probability of default conditional on given economic fundamentals would be revised upwards, thus leading to an apparently unjustified increase in spreads. Under this interpretation, financial globalization entails more risk than meets the eye under solvency considerations only, and traditional solvency-based creditworthiness indicators ought to be replaced by more comprehensive indicators encompassing overall financial fragility (see Calvo and Fernández-Arias, 2000).

The collapse in bond prices due to international financial contagion is another mechanism by which bond spreads may increase for given countries' fundamentals. Even under the assumption that the phenomenon is temporary and the probability of default remains unaffected, bondholders anticipating the need to sell in bad times will demand higher spreads in return. Emerging country paper is extremely illiquid in bad times and consequently entails large capital losses to those forced to sell, which increases the market cost of country default and further distorts the traditional relationship between solvency indicators and spreads.

The large variability and correlation among EM bond returns could also be a reason for a negative market reassessment of the portfolio value of these bonds to risk-averse investors. Higher spreads may have resulted not from considerations of default but from portfolio risks

associated with lower diversification value, which would imply that country spreads and LEFs depend not only on country default probabilities but also on how a country's bond returns fluctuate in relation to those in other markets. In fact, returns are highly correlated across countries in all emerging markets and even with junk bonds in industrial countries (see Figure 15), which diminishes the portfolio value of emerging market bonds and demands a higher spread for any given default probability. The same is true with the correlation between bond returns in Latin America and the US NASDAQ stock index, which supports the view that all high yield investments, including US stocks, belong to the same class (see Figure 16). In fact, it is tempting to think that investors specialized in high yield investments contaminate all high yield markets through contagion in the very attempt to hedge through diversification. The end result is to kill diversity.

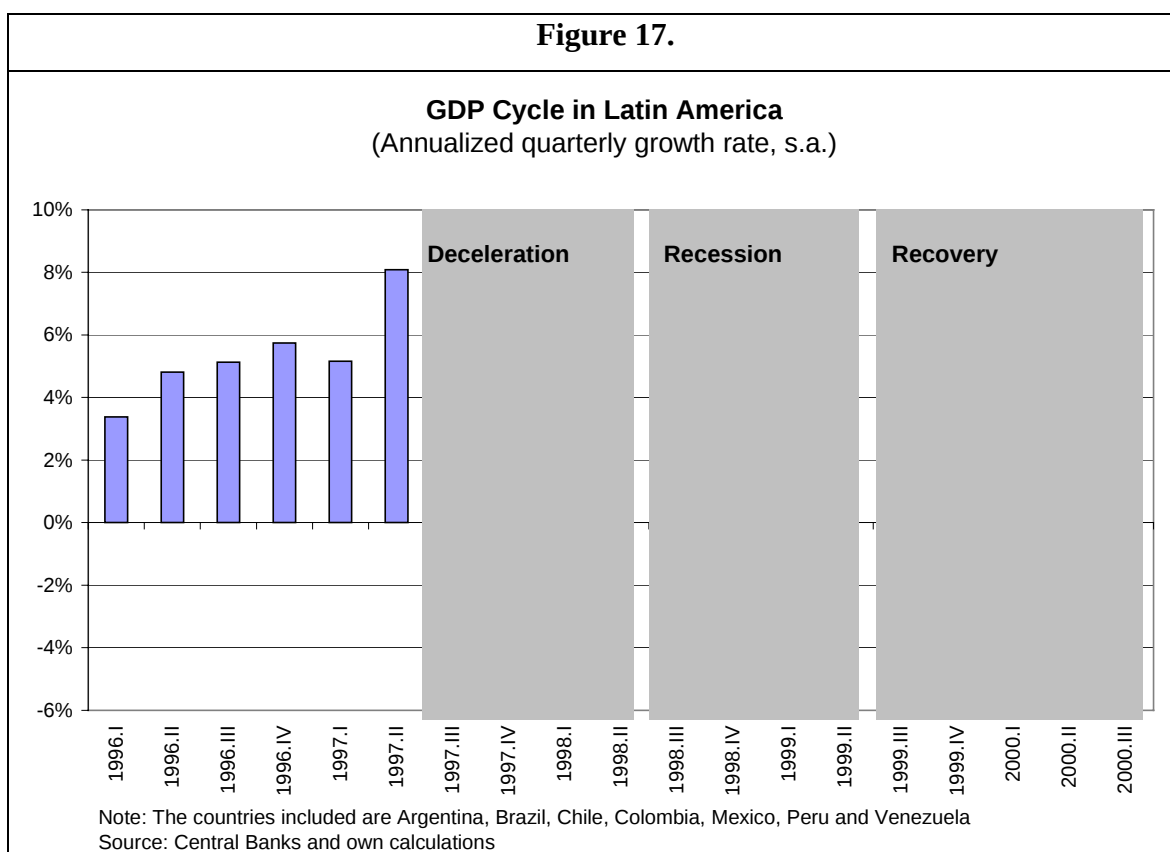


It is not clear, however, that the cross-country correlation of bond returns is higher now than it was before the Asian and the Russian crises (IMF, 2001), and therefore this factor would

not contribute directly to explaining the increase in spreads over time that we are analyzing. The same holds true in connection with NASDAQ in Figure 16. Nevertheless, the correlations involving EM bond returns increase in bad times (FR, IMF, 2001). If more crises are expected in the future, correlation considerations, like liquidity considerations analyzed above, would reinforce the increase in spreads.

Real Activity and Investment

The roller coaster behavior of capital flows and financial market conditions were reflected in a similar roller coaster behavior of the real economy in Latin America. This is illustrated in Figure 17, which shows annualized quarterly growth rates of (seasonally adjusted) GDP for the simple average of the seven major countries in Latin America, namely Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.



Three very clear phases in real economic activity emerge from Figure 17. First, an output growth deceleration phase (1997-III/1998-II) in the aftermath of the Asian crisis and prior to the

Russian crisis; second, a recession phase (1998-III/1999-II) in the aftermath of the Russian crisis; third, a recovery phase (since 1999-III) after the Brazilian devaluation did not develop into a full-blown crisis (thanks in part to the international support that was absent in the case of Russia) and financial conditions started to normalize in mid-1999.

Table 5.
GDP Cycle in Latin America (Year on Year growth rate)

	II-97 vs II-96	II-98 vs II-97	II-99 vs II -98	
	(1)	(2)	(3)	(3) - (1)
Venezuela	8.7%	2.0%	-7.4%	-16.1%
Argentina	8.1%	6.7%	-5.2%	-13.2%
Colombia	3.4%	1.7%	-6.8%	-10.2%
Chile	6.1%	6.3%	-3.7%	-9.8%
Peru	7.8%	-3.0%	2.1%	-5.7%
Mexico	8.4%	4.2%	3.1%	-5.2%
Brazil	4.7%	1.6%	-0.1%	-4.8%
Average	6.7%	2.8%	-2.6%	-9.3%

Source: Central Bank and own calculations.

The deceleration-recession phase implied a huge turnaround in output growth rates starting in the third quarter of 1997. This turnaround was broad-based and highly synchronized and it affected, without exception, the seven major Latin American economies. Table 5 shows the year on year GDP growth rates for each country in the 12-month period prior to the Asian crisis (1996-II/1997-II) and in the deceleration and recession phases described above. In the two-year period between the second quarter of 1997 and the second quarter of 1999, growth rates declined in every single country (going from positive to negative with the exception of Mexico and Peru) falling on average by 9 percentage points. The decline ranged from 5 to 6 percentage points in Brazil, Mexico and Peru to 10 percentage points in Chile and Colombia, 13 percentage points in Argentina and 16 percentage points in Venezuela.

Table 6.***Business Cycle Analysis of the 1998-99 Recession: GDP (s.a. quarterly data)***

	RECESSION PHASE		Length	Size
	Peak	Trough		
Venezuela	1998.I	1999.III	6	-9.3%
Colombia	1998.II	1999.II	4	-6.8%
Argentina	1998.II	1999.II	4	-4.8%
Chile	1998.II	1999.I	3	-3.6%
Brazil	1998.II	1998.IV	2	-2.1%
Peru	1997.III	1999.I	6	-2.0%
Mexico	No recession phase			
Average			4.2	-4.8%

Source: Central Banks and own calculations.

The high synchronization of the business cycle among the seven major Latin American economies is even more striking when we use quarterly, seasonally adjusted GDP data in order to perform a business cycle analysis to identify peaks and troughs in economic activity. Table 6 shows that economic activity, as measured by GDP, peaked by the second quarter of 1998 (i.e., prior to the Russian crisis) in every country with the exception of Mexico (where output growth rates decelerated significantly but did not actually fall).

The recession that followed had an average duration of four quarters and output fell by an average of 5 percent.¹⁶ Peru and Brazil experienced relatively mild declines (2 percent) while Venezuela and Colombia were the most severely affected, with output declines of 9 percent and 7 percent, respectively. Argentina, with an output decline of 5 percent and Chile, at 4 percent, were in the middle of the pack.¹⁷

¹⁶ For our purposes a recession is defined as two consecutive quarters of decline in GDP. The size of a recession is measured by the cumulative decline in output from peak to trough.

¹⁷ It is interesting to note that the 1998-99 recession cycle was not particularly deep when compared to the recession cycle that followed the Mexican devaluation in December 1994, but it was broader and more persistent. The average decline of output from peak to trough during the current recession cycle was 4.8 percent, (compared to 5 percent during the 1995 recession cycle) but the duration was twice as large (four quarters vs. two quarters).

Table 6 also shows that the recovery phase was highly synchronized and centered on the third quarter of 1999.¹⁸ The recovery process, however, has not been particularly strong. In spite of the fact that the recovery phase has now been running for an average of five quarters, as of the third quarter of 2000, only Peru, Brazil and Chile have fully recovered the output levels prevailing prior to the outbreak of the recession phase. Output levels in Argentina, Colombia and Venezuela are still below their previous peak.

Moreover, a closer look at Figure 17 also suggests that the recovery process is showing some signs of weakness. The simple average of the annualized quarterly growth rates of GDP appears to be stalling in the second and third quarter of 2000. Although we should expect growth rates to settle at lower levels once the economy comes out of recession and unutilized capacity is exhausted, current average growth rates are very unsatisfactory both in absolute terms and when compared to those prevailing prior to the Asian crisis.

Looking more specifically at individual countries, quarterly growth rates decelerated substantially in Chile, Mexico and Venezuela since the fourth quarter of 1999 while in Argentina and Peru the recovery actually faltered and output started to fall again in the second and third quarters of 2000, respectively. Brazil appears to be the only country where a noticeable deceleration in economic activity is not yet apparent.¹⁹

¹⁸ For our purposes a recovery is defined as two consecutive quarters of increase in GDP.

¹⁹ Colombia's quarterly GDP growth rates have been recently very erratic to be able to detect a declining pattern. However, industrial production growth rates decelerated significantly in the third quarter of 2000.

Figure 18.

Investment Cycle in Latin America
(Annualized quarterly growth rate, s.a.)



Note: The countries included are Argentina, Brazil, Chile, Colombia, Mexico and Peru
Source: Central Banks and own calculations.

Investment, a crucial variable for the future growth prospects of the region, displayed a pattern very similar to that of GDP, namely, a deceleration-recession-phase followed by a (relatively weak) recovery phase as illustrated in Figure 18.

Table 7.

Investment Cycle in Latin America (Year on year growth rate)

	II-97 vs II-96 (1)	II-98 vs II-97 (2)	II-99 vs II -98 (3)	(3) - (1)
Colombia	-2.1%	1.9%	-43.5%	-41.4%
Argentina	19.4%	10.4%	-16.9%	-36.2%
Chile	8.6%	13.1%	-18.9%	-27.5%
Peru	12.6%	3.8%	-14.8%	-27.4%
Venezuela	8.3%	9.4%	-13.5%	-21.8%
Mexico	25.2%	10.6%	6.1%	-19.1%
Brazil	7.8%	4.0%	-5.1%	-12.9%
Average	11.4%	7.6%	-15.2%	-26.6%

Source: Central Banks and own calculations.

The turnaround in investment growth rates during the deceleration-recession phase was even larger than that of GDP. As Table 7 illustrates, in the two years from the second quarter of 1997 to the second quarter of 1999 the decline in investment growth rates was on average 27 percentage points (three times the turnaround in GDP growth rates) going from positive to negative in every single country except Mexico (where investment growth decelerated significantly but never actually fell). The major turnarounds were Colombia (41.4%), Argentina (36.3%), Peru and Chile (27.5%).

Table 8.

**Business Cycle Analysis of the 1998-99 Recession: Investment
(s.a. quarterly data)**

	RECESSION PHASE		Length	Size
	Peak	Trough		
Colombia	1997.IV	1999.II	6	-47.3%
Chile	1998.I	1999.IV	7	-24.6%
Venezuela	1998.I	1999.III	6	-20.1%
Peru	1997.IV	1999.II	6	-17.5%
Argentina	1998.II	1999.II	4	-16.6%
Brazil	1998.I	1999.III	6	-3.9%
Mexico	No recession phase			
Average			5.8	-21.7%

The business cycle analysis of investment behavior is presented in Table 8. Again the behavior of investment shows a high synchronization, peaking in every country at approximately the same time although, in general, prior to GDP. The average decline in investment was 22% (ranging from 5% in Brazil to 47% in Colombia) and the average duration of the investment recession was 6 quarters (two quarters longer than GDP).²⁰

The recovery phase of investment was also highly synchronized and started in the third quarter of 1999. However, only Brazil is close to full recovery of the investment levels prevailing prior to the beginning of the recession. In the rest of the countries, investment levels

²⁰ The duration of the investment recession was twice as large as the one that followed the Tequila crisis.

remain well below their previous peak: 12% in Venezuela, 17% in Chile, 25% in Argentina, 26% in Peru and 35% in Colombia.²¹

This behavior of investment is consistent with the substantial increase in bond spreads (the ratcheting effect described in the previous section) that followed the Russian crisis. The deterioration in external financial conditions may have led to a downward revision in the desired degree of leverage on the part of firms, leading to a potentially protracted period of relatively low levels of investment as firms adjust their balance sheets to the new situation. As we point out in the next section, governments ought to seriously consider precisely this policy of reducing their debt levels in the face of extraordinarily high levels of interest rates.

4. Economic Policy Issues: What Can Be Done to Brighten the Future?

There is a yawning gap between developed and Latin American countries in terms of output per capita, income distribution and poverty indexes. This is a source of concern but, at the same time, a source of hope. As argued by Parente and Prescott (2000), growth miracles occur in countries that start from a relatively backward stage. Their very backwardness represents a window of opportunity. The challenge is thus to find effective ways of removing the barriers to growth.

The present paper has shown that output performance in Latin America is closely linked to external variables. This does not deny the existence of deep-seated, slow-moving, local issues that keep the region from replicating successful growth experiences in other parts of the world, but it suggests that, given those, external factors are an important determinant of growth. Consequently, many of the potentially most effective policy actions to promote Latin American growth are concerned with reforming the international financial architecture.²² In this respect, the “bad news” is that there is little individual EMs can do to change the international environment. Such policy actions, which exceed the scope of this paper, require difficult multilateral coordination. However, the “good news” is that how this environment impacts on an individual country depends, to some extent, on domestic policy, an issue that will be explored next.

²¹ Investment actually fell in the first three quarters of 2000 in Argentina and the second and third quarter of 2000 in Peru.

²² See for example Fernandez-Arias and Hausmann (2000a, 2000b).

To begin with, notice that the impact of financial crises is a function of the level of indebtedness and capital-inflow dependency. A country with no debt and no current account deficit, for example, is unlikely to be seriously hurt by international financial turmoil.²³ Absence of debt is not an objective worth heeding, especially for countries that want to traverse the yawning gap. However, this example helps to highlight the risks associated with indebtedness in a volatile international financial environment. It is not enough to follow a *sustainable* fiscal policy that ensures convergence of the debt/GDP ratio to, say, 30 or 40 percent. Other considerations also count.

One key consideration is the sudden-stop potential of outstanding debt. If all debt matures overnight, for example, creditors could demand immediate repayment. Under those conditions, any debt level is potentially too large. Thus, debt maturity takes center stage. Maturity should be managed in such a way that the country would, most of the time, be able to meet its *net* debt obligations, i.e., net of credit lines that could be activated in case old creditors refuse to roll over their credits at reasonable interest rates (this is related to the Guidotti-Greenspan proposal; see Guidotti, 2000). However, as shown above, several countries in the region face extraordinarily high interest rates on their long-term debt. Thus, this maturity management strategy might not be feasible or, at least, could be excessively costly. Thus, the lesson for policymakers: follow a tight fiscal policy that would lower the public sector debt/GDP ratio to levels where the maturity strategy has an acceptable cost.

Still, the above public debt reduction policy may be ineffective in lowering country-specific interest rates if the *private sector* is vulnerable to a sudden stop. In that case, the government may have to become a net creditor in order to be able to support the private sector in case of a sudden stop. However, political support for the policy would wane very rapidly once the non-debtors realize that the government is raising taxes to, in the end, bail out debtors.

Behavior does not happen in a vacuum. Most likely private sector exposure to sudden stops is in part due to the expectation of bailouts by the public sector. Thus, an important part of the maturity management strategy should be a *decoupling of private and public sectors* in order to avoid confusion and surprises as to how the burden is assigned when difficulties arise. The key is that private and public debts are kept separate: private does not become public through an

²³ However, as shown in Fernández-Arias and Hausmann (2000a and 2000b), FDI liabilities also pose a risk, albeit smaller. Furthermore, if difficulties are grounded in domestic factors, capital outflows by nationals may lead to financial collapse even with no debt.

after-the-fact bail-out at the expense of taxpayers and, equally important, public does not become private through a fiscal surprise (through higher taxes, for example).

Banks are an important source of the mutation of private into public debt because central banks are typically willing to bail out banks for the sake of preserving the payments system. Thus, decoupling is difficult here. Announcements that the central bank will refrain from bailing out the banking system are hard to believe. Thus, the central bank should take preventive action. For example, it could pursue policies that prevent banks from taking undue risks. One such policy is imposing *high liquidity requirements*, i.e., the share of deposits that has to be held in highly liquid assets such as international reserves. Another is *to set limits to central bank credit*. Central bank *independence* is not enough. Independence guarantees that the central bank will not be subservient to the fisc, but it does not ensure that it will not be the pliant servant of the financial sector. During crises the latter has proven to be a more demanding master than the former. This is due in part to the fact that refusing to bail out the banking sector is very unpopular with the general public. It forces banks to repudiate bank deposits, whose official guarantees may be less than fully credible, and creates havoc in the payment system.

What about controls on short-term capital inflows? Empirical evidence shows that this kind of policy has a negligible effect on total capital flows, but it affects the maturity of international indebtedness (see Calvo and Reinhart, 2000a, for a summary of empirical results). Thus, *prima facie* this seems a good strategy for ameliorating sudden stops. However, this is at best a partial solution. International debt is only one component of total (gross) debt; the other is debt among domestic residents, particularly bank loans and deposits. Thus, the maturity of total gross debt may not change. Lengthening the international component could lead to shortening the maturity of the domestic component. In fact, such a change in composition could help explain why controls on capital mobility appear to have such a small macroeconomic impact.²⁴ Furthermore, an often heard complaint is that these types of controls discriminate in favor of multinationals, given that the latter can easily cover up short-term loans through distorted transfer prices (i.e., prices charged for transactions between headquarters and the local subsidiary) and profit remittances.

None of the above considerations has referred to the exchange rate regime and they thus equally apply to all such regimes. Experience shows, however, that exchange rate management

²⁴ Another explanation, of course, is that the financial sector can bypass those controls.

plays an important role. The profession is far from agreeing on the best regime for EMs. However, there is wide consensus that *soft pegs* are very risky, especially when the peg is not in line with the fiscal stance. There is also clear empirical evidence that policymakers do not like a regime of free floating exchange rates (a fact labeled “fear of floating” by Calvo and Reinhart, 2000b). Thus, in practice the two serious contenders at present are *hard pegs*, like Currency Boards (as in Argentina and Hong Kong) and Inflation Targeting, or IT (as in Brazil, Chile, Colombia, Mexico). Both are, in a sense, pegs because instead of letting the exchange rate freely take its course, they target the market value of the currency. A narrow band for target inflation approximates a hard peg. A hard peg targets currency value in terms of a foreign currency or basket of currencies, while IT does so in terms of a basket of goods. Notice, incidentally, that if the only good in the basket were a foreign currency, IT is equivalent to fixed exchange rates. Which system dominates is still a hotly debated issue. However, it is clear that the choice must be dictated by the characteristics of the domestic financial system, pass-through coefficients, and credibility (see Calvo and Reinhart, 2000c). In particular, *Liability Dollarization*, i.e., the existence of debts denominated in foreign exchange, poses a serious constraint for the choice of target.²⁵ In a heavily liability-dollarized system a devaluation, for example, could trigger financial distress.

²⁵ Eichengreen and Hausmann (1999) have called this phenomenon “Original Sin.” See Hausmann, Panizza and Stein (2000) for a discussion.

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