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The macroeconomic *context and investment:* Latin America since 1980

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This article analyses the evolution of regional investment within the context of general macroeconomic trends. First, trends in the macroeconomic context of investment between 1980 and 1994 are examined, and it is concluded that the economies' vulnerability to external shocks was crucial to the decline in the rate of investment and its subsequent slow recovery: in countries where indebtedness and external account imbalances were lower, investment levels and rates fell less sharply. Next, the factors determining trends in private investment are reviewed, and it is concluded that, over and above those traditionally taken into account by economic theory, a further three also played a part: the stability of policies and their consistency with structural reforms, which ensures the sustainability of regulations over time; access to the infrastructure, where public sector investment has traditionally been supplemented by private investment; and the availability of financing. Finally, some policy recommendations are put forward, based on the recognition that macroeconomic stability is fundamental (although not of itself sufficient) for maintaining a favourable climate for investment, and that government thus has an important part to play in stimulating private investment. This role is related to the function that public sector investment should perform in the future, to the role of taxation in the reinvestment of company profits and personnel training, and to policies affecting financial development and the capital market.

I

The macroeconomic context and investment

1. Trends in the 1980s

Over the last fifteen years, Latin America has been exposed to strong external shocks which have given rise to clearly defined stages in the region's macroeconomic development. Each stage has also registered differences in the process of capital accumulation: indeed, the way in which the shocks and the subsequent imbalances were dealt with –by means of stabilization and adjustment policies, along with structural reforms such as trade and financial liberalization, market deregulation and privatization– had a direct effect on public sector investment. This also affected the economic picture as a whole –political and economic stability and the potential for savings and financing– and thus

private investors' expectations (degree of certainty and confidence) and incentives.

During the first of these stages (1978-1981), the region benefited from the improvement in the terms of trade and from an ample supply of external credits from the international private banking system, making possible the implementation of expansive economic policies, which in many cases gave rise to unsustainable balance of payment deficits. A second stage (1982-1984) began when voluntary inflows of international capital were reversed (after Mexico ceased its debt payments in August 1982), international interest rates rose and the terms of trade deteriorated. This stage saw the beginning of a stringent adjustment process, designed to produce a trade surplus to cover the external sector deficit.

FIGURE 1

Effect of the macroeconomic context on investment

Effect of external shocks on public sector investment

Direct effect on investment financing

(-) Terms of trade		Income falls		
(-) Capital flows	→	External credit shrinks	→	(-) Investment financing
(+) External interest rate		Debt service rises		

Effect on public spending

(+) Debt service		(+) Domestic borrowing		Fiscal constraints
External debt	→	(+) Currency issue	→	

(+) Inflation

(-) Investment

Effect of external shocks on private investment

Public sector deficit
Monetary expansion
Devaluation →

Instability in:

* Prices
* Exchange rate
* Interest rates

(+) Risk → (-) Profitability

Closure of external
and fiscal gap →

Drop in demand →

Under-utilization of
production capacity

Financial crisis →

* (+) Domestic interest rates →
* (-) Long-term credit
* (+) Devaluation →

Decline in financing

Increase in external debt in
local currency

Source: Prepared by the author.

TABLE 1

**Latin America (17 countries): Evolution of
gross fixed capital formation and GDP, 1978-1994**

Country	Gross fixed capital formation ^a (Index, average 1978-1990=100)				GDP ^a (Annual average variation over the period)				Gross fixed capital formation as a proportion of GDP ^b (Percentages)			
	1978- 1981	1982- 1984	1985- 1989	1990- 1994	1978- 1981	1982- 1984	1985- 1989	1990- 1994	1978- 1981	1982- 1984	1985- 1989	1990- 1994
Argentina	97	73	67	82	0.3	0.9	-0.9	6.1	24.0	18.1	16.2	19.0
Bolivia	95	52	68	81	0.4	-3.1	1.3	4.0	16.6	9.9	13.3	14.2
Brazil	99	80	94	84	4.4	1.1	4.5	1.0	22.5	17.5	17.0	15.5
Chile	111	82	130	229	7.2	-3.1	6.1	5.6	17.4	14.0	17.8	22.3
Colombia	104	121	128	157	5.0	2.2	4.8	4.0	16.3	17.6	15.6	16.0
Costa Rica	93	61	90	135	2.3	1.1	3.8	4.7	24.5	16.5	21.3	24.5
Ecuador	99	79	76	80 ^c	5.3	0.7	2.2	3.3	23.2	17.2	15.2	14.1
El Salvador	92	57	72	91 ^c	-3.2	-0.9	1.5	4.2	15.2	11.2	13.3	16.6
Guatemala	100	70	66	85 ^c	3.7	-2.0	2.2	3.8	13.5	9.5	8.6	9.7
Honduras	95	74	78	113 ^c	5.2	0.5	3.9	2.6	24.5	18.2	16.9	21.9
Mexico	109	92	86	119	9.2	-0.4	1.1	3.0	23.9	18.6	17.2	20.8
Panama	108	111	84	120 ^c	8.3	1.6	-1.1	6.5	21.4	18.7	13.6	17.8
Paraguay	110	102	106	135 ^c	10.5	-0.2	4.2	2.9	25.8	21.4	19.9	21.4
Peru	109	104	89	89	3.9	-2.3	-0.2	2.8	22.9	22.0	17.6	19.7
Dominican Republic	100	87	114	129 ^c	4.0	2.2	4.4	1.8	22.5	22.0	21.6	21.1
Uruguay	102	66	49	71	4.9	-5.5	3.9	3.7	17.2	12.7	9.7	12.5
Venezuela	96	64	55	60	-1.1	-2.7	1.7	3.8	29.2	20.1	15.9	16.1

Source: ECLAC data, based on national accounts of each country.

^a In 1980 dollars.

^b Coefficient in constant currency of each country.

^c Average 1990-1993.

Figure 1 summarizes the mechanisms whereby the effect of the external shocks examined in this section is transmitted to public and private investment. One effect of the debt crisis was a generalized drop in the rate of growth of GDP, which contributed to the sharp contraction in investment owing to a slowdown in demand and the resulting under-utilization of production capacity. However, the adjustment process and the subsequent recovery of investment show clear differences from country to country.

Chile, Colombia and the Dominican Republic, for example, already exceeded their 1978-1981 investment levels by the period 1985-1989 (table 1). Studies carried out in the region¹ show that the factors affecting the differences in behaviour of the process of capital accumulation relate to: i) the level of indebtedness of each country at the beginning of the period; ii) trends in the terms of trade; iii) the relative amount of external financing received during the adjustment period; iv) the initial degree of openness of

the economy, and v) the consistency of economic policy, particularly foreign exchange and trade policy. Countries such as Colombia, Paraguay and the Dominican Republic, which had a low level of indebtedness and a small balance of trade deficit when the external debt crisis struck and were thus less vulnerable to external financial shocks, were able to deal with the deterioration in external conditions by means of gradual and moderate adjustment policies, without causing sharp drops in output or investment.

Countries which had borrowed heavily, in contrast, had to contend simultaneously with high external debt service payments and an external credit squeeze, which on the one hand cut their income, causing a contraction in domestic demand, and on the other reduced the availability of financing. The lack of foreign currency in turn led to a reduction in import capacity, which in less industrialized countries also sharply curtailed investment and the purchase of machinery and equipment (table 2). It is therefore not possible to understand the behaviour of investors in the region without taking into account the external constraints prevailing between 1982 and 1989.

¹ See Servén and Solimano (1993a), Bacha (1993a) and Schmidt-Hebbel, Servén and Solimano (1994).

TABLE 2

Latin America (9 countries): Evolution of investment components

Country	Index of volume of imports of goods, FOB (Base period 1978-1980=100)				Index of investment in machinery and equipment (Base period 1978-1980=100)			
	1978- 1981	1982- 1984	1985- 1989	1990- 1994	1978- 1981	1982- 1984	1985- 1989	1990- 1994
Argentina	104	67	59	127	106	99	100	112
Brazil	97	68	75	115	96	62	77	67
Chile	109	75	96	170	109	61	144	290
Colombia	104	122	110	181	104	116	116	166
Costa Rica	93	66	103	176	92	54	94	139
Mexico	117	91	132	279	111	78	77	136
Peru	112	123	106	128	112	96	59	39 ^a
Uruguay	101	61	76	132	101	49	47	81
Venezuela	799	79	80	84	97	69	75	65

	Private investment (As a percentage of GDP in constant currency of each country)				Public investment (As a percentage of GDP in constant currency of each country)			
	1978- 1981	1982- 1984	1985- 1989	1990- 1994	1978- 1981	1982- 1984	1985- 1989	1990- 1994
Argentina	17.0	13.4	11.5	16.7	7.0	4.6	4.7	2.4
Brazil	15.1	11.9	12.1	11.2 ^b	7.4	5.6	4.9	4.4 ^c
Chile	8.2	7.9	9.4	16.8	7.7	5.0	6.9	5.7
Colombia	8.7	7.7	7.6	...	7.6	9.9	7.9	...
Costa Rica	15.5	9.4	12.8	15.9	9.0	7.1	8.5	8.6
Mexico	13.0	11.0	12.0	16.0 ^a	11.0	8.0	6.0	5.0 ^a
Peru	16.6	15.3	13.4	15.7 ^a	6.3	6.7	4.2	4.0 ^a
Uruguay	10.8	7.3	5.9	8.9	6.4	5.5	3.8	3.6
Venezuela	15.8	8.2	6.9	5.9 ^a	13.4	11.9	9.0	10.3 ^a

	Investment in non-residential construction (As a percentage of GDP in constant currency of each country)				Investment in machinery and equipment (As a percentage of GDP in constant currency of each country)			
	1978- 1981	1982- 1984	1985- 1989	1990- 1994	1978- 1981	1982- 1984	1985- 1989	1990- 1994
Argentina	7.4	3.9	2.6	2.9	7.8	7.4	7.2	7.2
Brazil	8.9	7.4	7.1	6.3	8.0	5.4	5.5	4.7
Chile	5.6	4.3	5.6	5.9	6.6	3.9	7.9	11.9
Colombia	6.4	7.3	6.6	5.4	7.4	7.7	6.6	7.6
Costa Rica	...	...	...	...	13.1	7.9	12.3	14.6 ^d
Mexico	9.1	7.5	5.6	3.5	10.3	6.6	6.7	9.9
Peru	...	...	...	...	10.6	9.1	5.1	4.0 ^a
Uruguay	...	...	...	...	6.4	3.4	3.5	5.1
Venezuela	11.1	8.3	5.6	6.7	12.2	9.0	8.7	7.0 ^d

Source: ECLAC, on the basis of official data, and Hofman, 1995.

^a Averages for 1990-1993 only.

^b Averages for 1990-1991 only.

^c Includes investment in public enterprises.

^d Averages for 1990-1992 only.

The deterioration in the terms of trade, which had a generalized effect on all the countries of the region, also adversely affected the capital accumulation process. To begin with, a drop in the prices of the products that a country sells abroad has a direct effect on the export sector's profits and reduces the incentive to invest in the sector. If this situation is exacerbated by any links that may exist between the

export sector and other fields of economic activity, the economy's global accumulation process suffers. What is more, where the public sector owns the exportable natural resources (as in Ecuador, Chile, Mexico, Venezuela), volatility in their prices gives rise to unplanned budget imbalances which generally tend to translate into cutbacks in investment due to the increased constraints on current expenditure.

The relative amount of external financing the countries received also influenced their ability to control and limit imbalances. Countries such as Chile and Costa Rica diverged from the prevailing pattern in the region during this period: one received support from multilateral organizations and the other, unrequited transfers, and this made it possible for them not only to renegotiate their debt with the international private banking system but also to obtain external credits which supported their import capabilities.

One important component of the adjustment programmes designed to deal with external shocks was the increase in the real exchange rate. Although this policy was considered essential in order to provide an incentive to exporters, it pushed up the price of the capital goods required by all sectors of economic activity. On the one hand, the increase in the real exchange rate raised the cost of imports of machinery and equipment, especially in countries where capital goods manufacturing was less well-developed. In countries where the level of industrialization was higher and the degree of openness to the world economy lower (Brazil, Colombia, Mexico), this real devaluation compounded the effect of other policies which also raised the cost of capital goods, such as higher import tariffs and profits taxes. Companies with foreign currency debts also saw a rapid rise in the financial cost of those debts.

At the same time, the use of a crawling band exchange rate in many countries of the region to deal with external shocks gave rise to expectations of devaluation which helped to raise domestic interest rates and bring down the real price of capital, thus slowing private investment.

External constraints had a direct impact on the financing of public sector investment and indirectly affected the public sector deficit. With the exception of Colombia and Peru (the adjustment process in Peru occurred at the beginning of the 1990s), all the countries considered showed significant drops in public sector investment between 1982 and 1989: in some of them the position worsened between 1985 and 1989 and showed no sign of recovery in the first half of the 1990s (table 2).

The drop in public sector investment was not due only to the financial constraints generated by negative external shocks, but also to the heavy imbalances the latter caused in the fiscal accounts. From 1984 until the end of the decade, the increase in public debt service (mainly public sector debt or debt

transferred to the public sector through various mechanisms), the reversal of capital flows and the fall in tax revenue resulting from the decline in economic activity all made for a growing fiscal deficit, which became one of the determining factors in the rapid acceleration of inflation characterizing the region in this period.

In countries where the public sector was a net purchaser of foreign currency, such as Argentina, Brazil and Uruguay, the interaction between the processes of external and fiscal adjustment generated violent friction as a result of the phenomenon of internal transfer. The purchase of foreign currency to pay the interest on external debt was made through domestic borrowing, which put pressure on the financial markets, and/or by resorting to money creation, which exacerbated macroeconomic destabilization.

At the same time, in cases where the public sector was not able to obtain all the foreign currency it needed and major devaluations took place in order to boost the export process, pressure on the fiscal deficit mounted as a result of the local currency increase in external debt interest payments. Recovery of growth and stability in these countries was more difficult and more expensive. Public sector investment was cut back sharply, which also affected private investment in those countries with high complementarity between the two. Where the adjustment process was delayed (Argentina, Brazil, Peru), the inflationary process speeded up, as did demonetization of the economy and capital flight, and there was little incentive for capital accumulation amid the prevailing instability, uncertainty and risk.

The countries where the accumulation process revived rapidly were those whose imbalances were not as great and whose policies were relatively moderate and gradual (Colombia), or those which had access to external financing (Chile and Costa Rica). In addition, the recovery of stability reduced uncertainty and thus had a favourable effect on expectations.

In other countries, however, the sharp fall in the terms of trade, the scale of external transfers and the severe cutbacks in public expenditure in order to control hyperinflation, in combination with the scarcity of external assistance, dragged the economy into a deep recession, from which recovery was extremely slow even where inflation was quickly brought under control (Bolivia is one of the extreme cases). In the remaining countries, adjustment and stabilization

policies generated great instability in key variables which affect the expectations of profitability of investments, such as the inflation rate, interest rates and the real exchange rate.

2. The 1990s: favourable macroeconomic context but poor investment rates

By the end of the 1980s, with the change in international strategy on external debt represented by the Brady Plan and with the development of the process of structural reform, a new economic environment was taking shape that offered greater stimulus to investment and growth. From 1991 onwards, there was a reversal of the negative trend displayed during the previous decade by key variables in the international context: there was a strong revival of international capital flows, external interest rates fell, debt service payments dropped, and the terms of trade stabilized. The increase in flows of foreign direct investment, though weak at first, and the public sector's saving drive also combined to improve investment performance. In 1990-1994 foreign direct investment in 10 countries of the region showed a sharp increase over the average for 1978-1980, except in Brazil and Uruguay (table 3). In countries such as Argentina, Mexico, Peru and Venezuela, a substantial part of these resources were devoted to acquiring privatized companies, which did not represent capital accumulation in the receiving country. However, over the last five years direct investment has made a significant contribution to the financing of new investment in countries such as Chile, Colombia and Costa Rica.

The internal macroeconomic picture during the first half of the 1990s also reveals greater stability at the regional level: the inflation rate has taken an extraordinary plunge, and the public sector has gone into surplus or is registering low, manageable deficits. In this context, economies are regaining a certain capacity for growth, against a background of greater stabilization and relaxation of external constraints, which has helped to raise investment as a percentage of GDP.

As regards gross fixed capital formation (table 1), in Chile, Colombia, Costa Rica, Paraguay and the Dominican Republic the level has risen by more than 30% between 1990 and 1994, as compared with the 1978-1980 average, and in the case of Chile it has more than doubled. The other countries considered in the table have not yet reached the level of the base

year. Investment as a proportion of GDP between 1990 and 1994, however, appears more negative: only in Chile does it exceed the 1978-1980 average, which was extremely low.

What is the explanation for the low rate of accumulation in the region, under conditions of economic stability and in a favourable international context? There are a number of hypotheses. The first stresses the speeding-up of the process of structural reform in recently stabilized economies. Trade and financial liberalization, the opening up of economies to foreign direct investment and the new regulatory framework for this, the deregulation of markets and the application of competitive policies to previously monopolistic markets all brought about great changes in the ground rules for entrepreneurs. In conjunction with the abolition of the State's role as protector of private agents and the unwillingness of the region's entrepreneurs to take risks, this has meant that the recovery of investment has been slow.

Although structural reforms were undoubtedly necessary, in practice they were not always coordinated with short-term macroeconomic policy, and thus mistakes were made which led in some cases to a reversal of the new policies. It is well known, for example, that financial deregulation at first caused crises of solvency in the system in nearly all countries, in the wake of which the bodies responsible for supervising banks and financial institutions were regulated and institutionally reinforced. The same happened with privatization operations, which were not at first backed up by policies to promote competition, especially in the public service market. Another example of high stabilization costs resulting from a lack of adequate coordination of short-term policies and reforms can be found in the abrupt liberalization of trade and the capital market, which coincided with inrushes of external capital and constant currency revaluations. This led in the end to major balance of payments crises, recent examples of which are those in Mexico and Argentina at the end of 1994 and the beginning of 1995. It is understandable, then, that initially entrepreneurs do not perceive new policies as being stable or irreversible, but prefer to wait for them to settle and bear fruit.

The second hypothesis turns for an explanation to the behaviour of public sector investment, which fell in all the countries examined between 1990 and 1994 (table 2). However, this should not have pushed down total gross fixed capital formation, unless it

TABLE 3

Latin America (10 countries): Foreign direct investment

Year	Argentina	Bolivia	Brazil	Chile	Colombia	Costa Rica	Mexico	Peru	Uruguay	Venezuela
<i>Millions of 1990 dollars</i>										
1978-1980	758	53	3 406	371	133	1 982	2 454	74	368	127
1982-1984	308	20	2 396	268	612	1 958	2 463	1	-2	151
1985-1989	826	5	1 374	814	618	1 994	2 271	31	28	-75
1990-1994	3 442	67	319	409	568	195	3 905	117	17	536
<i>Index 1978-1980=100</i>										
1978-1980	100	100	100	100	100	100	100	100	100	100
1982-1984	41	37	70	72	460	70	100	1	-1	119
1985-1989	109	10	40	220	465	114	93	42	8	-59
1990-1994	454	126	9	110	427	238	159	159	5	423

Source: ECLAC, on the basis of official figures.

affected the externalities that public sector investment usually provides to private investment. The reason could lie in the privatization process, but if this process transfers to the private sector part of the investment activities previously carried out by the public sector, total capital formation should not fall. However, experience of privatization processes indicates that they do not themselves lead to an increase in capital accumulation, and a number of countries have therefore chosen to introduce clauses or conditions in this respect into the negotiation of sales of public sector enterprises (as in Bolivia and Peru).

The third hypothesis puts the blame on the lack of the long-term financing necessary to make new investment projects viable. Global figures on sources of finance for gross fixed capital formation show that national saving has fallen five percentage points of GDP over the last 15 years without recovering, and that, as in 1980, external saving equivalent to four percentage points of GDP is needed to finance the current level of investment. Compared with East Asian countries, these levels of saving and investment are extremely low, especially if the region wishes to achieve higher and more sustained growth of GDP.

II

Determining factors in private investment

The previous section shows that private sector investment decisions in the region depend both on what have traditionally been considered determining factors in economic theory,² and on specific factors deriving from the macroeconomic context within which companies operate, which relate to the stability of policies and the degree of certainty within which agents have to work, to the characteristics of the region's financial markets, and to access to the infrastructure.

² I.e., the income accelerator, in the Keynesian approach, to which relative factor prices are added in the neoclassical approach; or the relation between the book value of an additional unit of capital and its market value, as in Tobin's *Q* theory.

1. Private investment and macroeconomic stability

The empirical studies reviewed³ show that, in Latin America, one of the characteristics of the macroeconomic context of investment decisions which is clearly different from that of developed countries is the instability of basic prices (exchange rate, interest rates and consumer prices). They show that entrepreneurs in the region are averse to risk and that their decisions take account of both the average and the variations of

³ For a good summary of these, see Servén and Solimano (1993a).

variables affecting the yield from their investment projects. In other words, a stable, predictable set of incentives would seem to be at least as important as the actual level of the incentives. This underlines the importance of macroeconomic stability and clear, well-established regulations in order to elicit a positive response from entrepreneurs to new policies. Thus, the performance of private investment in countries which undertook structural reforms but where investors responded very slowly to the new incentives may have been due to inadequate follow-up or to inconsistencies in economic policy or between different areas of economic reform which may have reduced the stability or predictability of relative prices.

Recent publications also stress the importance of risk and introduce the idea of irreversibility (Dixit, 1992; Dixit and Pyndick, 1993; Pyndick, 1991; Pyndick and Solimano, 1993): generally speaking, investments are made in a specific sector and, once the project begins operating, switching the capital to another sector implies a considerable loss in most cases. Thus, investors put off making decisions, especially if the macroeconomic and policy environment is not stable. Consequently, the greater the uncertainty, the greater the advantage to be gained from waiting, and thus the slower will be the response of investors to improvements in macroeconomic conditions. As regards variability, examination of the rates of variation in the consumer price indices, real exchange rates and interest rates of 11 countries from 1978 to 1994 (table 4) shows that all experienced a sharp rise in these rates during the subperiods 1982-1984 and 1985-1989. It is worth noting that at the beginning of the 1990s, Argentina, Brazil and Peru were still experiencing hyperinflation.

It can also be seen that the variability of real interest rates has been much greater than that of the consumer price index (CPI) and the real exchange rate in all the countries. The combination of this factor and often extremely high interest rates helped to discourage investment projects, the only viable ones being those with a very high return, those located in monopolistic markets, or those with related financing.

As to relative prices, empirical studies in the region make reference to three important variables, two of which relate to the return on investment (the terms of trade and the real price of shares, or Tobin's Q) and the third of which relates to the cost of capital, which in some cases is measured using the relative price of investment (ratio between the investment de-

flator and the GDP deflator) or using the real exchange rate index (in order to incorporate the importance of the cost of imported machinery and equipment in the behaviour of investment).

The deterioration in the terms of trade affected all the countries of the region, adversely affecting the process of capital accumulation and saving. In this connection, Cardoso (1993) carried out panel regressions including data on the coefficient of private investment in GDP for Argentina, Brazil, Chile, Colombia, Mexico and Venezuela in 1970-1983, 1974-1977, 1978-1981 and 1982-1985, and he concluded that this deterioration was a significant factor in the variance of investment.

As noted in the preceding section, a central component in policies to deal with the external debt crisis was real devaluation. Although this was considered essential as an incentive to the export sector, it had side-effects: it depressed investment in the other sectors of economic activity and pushed up the cost of imported machinery and equipment and thus the cost of capital, particularly in countries where capital goods manufacturing was not well developed. It also meant that companies with foreign-currency debt suffered a rapid rise in the financial cost of their debt.

In countries where the level of industrialization was higher and the degree of openness to the world economy lower (Brazil, Colombia, Mexico), the effects of the rise in the real exchange rate were accompanied by those of other policies which also raised the cost of capital goods, such as higher import tariffs and profits tax. Furthermore, the drop in domestic demand in these countries caused a contraction in capital goods production, leading to acute under-utilization of installed capacity; to maintain profitability, these industries passed the effect on in their prices.⁴ Between 1978 and 1994 (table 5), there was a generalized rise in the cost of capital goods as compared with overall prices in the economy, and during the 1990s the ratio of the gross fixed capital formation deflator (roughly speaking, the price of capital goods) to the GDP deflator (overall prices in the economy) fell below 1978-1980 levels in only half the countries considered.

⁴ In Brazil's case, Dias Carneiro and Werneck (1993) show that the relative cost of investment in machinery and equipment rose 42% in relation to the GDP deflator between 1986 and 1989, and they explain this behaviour by the sharp drop in utilization of capacity in the capital goods producing sector and the high level of protection during this period.

TABLE 4

Latin America (11 countries): Indicators of instability
(Coefficients of variation)

Country	Consumer price index				Real exchange rate				Real interest rate			
	1978-1981	1982-1984	1985-1990	1991-1994	1978-1981	1982-1984	1985-1990	1991-1994	1978-1981	1982-1984	1985-1990	1991-1994
Stabilized countries												
Colombia	0.11	0.07	0.09	0.04	0.03	0.02	0.03	0.04	0.80	0.23	0.39	0.29
Chile	0.18	0.28	0.15	0.12	0.05	0.09	0.03	0.03	0.41	0.55	0.66	0.86
Countries which have successfully applied stabilization policies												
Mexico	0.05	0.19	0.17	0.09	0.04	0.09	0.05	0.03	...	0.72	0.59	1.15
Costa Rica	0.22	0.33	0.18	0.14	0.08	0.06	0.02	0.02	0.33	2.26	0.23	0.21
Bolivia ^a	0.24	0.44	0.49	0.08	0.06	0.31	0.13	0.01	0.26 ^b	0.45	0.01 ^c	0.19 ^a
Countries with persistently high inflation												
Ecuador	0.11	0.29	0.13	0.12	0.03	0.05	0.07	0.04	0.36	1.65	3.68	2.19
Venezuela	0.16	0.16	0.25	0.09	0.04	0.06	0.11	0.05	...	...	0.58	0.39
Uruguay	0.13	0.19	0.08	0.09	0.06	0.11	0.04	0.04	3.03	0.38	0.24	0.14
Countries with hyperinflation												
Argentina	0.11	0.18	0.52	0.47	0.14	0.15	0.17	0.04	0.15 ^b	1.13	2.25	0.33
Brazil	0.09	0.08	0.33	0.34	0.04	0.04	0.04	0.07	0.68	0.81	1.00 ^d	1.18
Peru	0.10	0.10	0.44	0.40	0.05	0.04	0.18	0.05	...	...	0.53 ^c	1.35

Source: Prepared by the author on the basis of official figures.

^a Average 1991-1993.

^b Average 1980-1981.

^c Average 1986-1989.

^d Average 1985-1989.

At the same time, as happened in many countries of the region, the maintenance of a crawling exchange rate as a defence against external shocks, devaluing by more than the inflation rate, gave rise to expectations of devaluation which helped to push up domestic interest rates, widening the gap between them and international rates, pulling down the real price of capital (i.e. share prices or the value of investments already made), and thus acting as yet another source of discouragement to private investment. ⁵

2. Private investment and the availability of financing

A further key factor in the ability to control and limit imbalances was the relative amount of external financing received. An organized approach to the financing of external disequilibria greatly influenced the agents' expectations by reducing the level of uncer-

tainty, which is vital when deciding to invest. Empirical studies of private investment in the region ⁶ show that variables relating to the availability of external financing are significant. ⁷

The level of financial consolidation, particularly the availability of long-term credits which make investment projects viable and the way in which credit is allocated (through the market or by administrative means), is another basic constraint on private investment in Latin America. Empirical studies have taken account of this constraint, but in general it has not been measured very well: the variables used to estimate it are liquidity coefficients (M1/GDP or M2/GDP) and do not reflect the effective availability of credit to com-

⁶ De Melo and Tybout (1986) on Uruguay; Ocampo, Londoño and Villar (1988) on Colombia; and Greene and Villanueva (1990) and Love (1989) on a group of developing countries.

⁷ The studies in question use a variety of indicators to measure the availability of external financing: exports, international reserves, capital flows, real exchange rate. As Rama (1993) points out, these indicators may relate to the "climate of investment" but not necessarily to the rationing of credit.

⁵ Cardoso (1993) adapts the Mundell-Fleming and Dornbusch models of 1976 in order to show the mechanisms whereby external shocks are transmitted to the real value of invested capital.

TABLE 5

Latin America (11 countries): Relative price indicators

Country	Indexes of real exchange rate (Average 1978-1980=100)				Ratio of investment deflator to GDP deflator (Indexes, average 1978-1980=100)				Real interest rates (Percentages)			
	1978- 1981	1982- 1984	1985- 1990	1991- 1994	1978- 1980	1982- 1984	1985- 1990	1991- 1994	1980- 1981	1982- 1984	1985- 1990	1991- 1994
Argentina	92.5	144.8	129.4	48.8	100	104	97	86	17.7	61.9	39.7 ^a	33.9
Bolivia	90.5	71.8	82.7	76.9	100	117	87	100	-11.2	-53.0	-12.2	32.2 ^b
Brazil	97.2	107.6	91.9	52.3	100	116	131	...	-13.3	20.6	99.8	...
Chile	91.6	91.3	115.4	83.4	100	105	105	107	17.7	25.5	9.2	9.8
Colombia	94.7	78.1	107.0	93.9	100	98	114	110	2.4	6.3	6.2	8.7
Costa Rica	114.1	127.9	106.7	88.9	100	127	100	95	-17.0	-8.9	11.8	13.8
Ecuador	94.1	80.2	110.5	98.7	100	103	128	135	-5.6	-10.6	-7.4	-1.1
Mexico	91.8	94.7	85.4	50.3	100	103	110	96	...	-12.8	-2.1	5.6
Peru	92.0	72.5	48.0	17.9	100	112	126	...	...	...	...	27.1
Uruguay	90.6	98.8	97.6	56.2	100	101	113	106	10.3	27.6	18.9	29.0
Venezuela	93.0	72.6	101.7	94.4	100	87	98	94	...	...	-13.6	-2.1

Source: The figures for the real exchange rate and real interest rates were prepared by the author on the basis of the averages of monthly figures obtained from the International Monetary Fund, *International Financial Statistics* (various issues). The deflators of the national accounts were taken from the ECLAC data base, prepared on the basis of official figures from each country.

^a The year 1990 has been excluded on account of hyperinflation.

^b The figure calculated is not given here because it does not correspond to the effective rate charged to firms.

panies nor the changes that have been made to banking regulation systems, which usually determine the availability of financing (Rama, 1993). On the other hand, statistical analysis has found a correlation between liquidity coefficients and private saving, both measured as a proportion of GDP. According to Burki and Edwards (1995) and Held, Titelman and Uthoff (1995), this finding tends to confirm that the accumulation of funds in financial institutions contributes to capital formation through the financing of investment projects which otherwise would not have been carried out.

The high domestic interest rates prevailing in the region (table 4) have presented a further obstacle to the growth of investment, affecting both the cost of capital and the process of financial consolidation. Although this phenomenon was not inconsistent with the adjustment and stabilization processes of the 1980s, Held, Titelman and Uthoff (1995) assert that it contributed to an increase in the "systemic" risk in bank portfolios. This, in conjunction with major failings in prudential regulation—such as weak supervision of solvency, excess of related credits and capitalization of interest on risky credits—unleashed deep crises in the financial systems of nearly all the countries of the region: in the Southern Cone during the 1980s and in Bolivia, Mexico, Paraguay and Venezuela during the 1990s.

The conclusion to be drawn from the Latin American experience and from empirical studies of

different groups of countries at the international level (Larraín and Vergara, 1993) is that moderate, positive interest rates are closely linked to favourable economic performance and financial consolidation.

3. Private and public investment in infrastructure

The scarcity of financing which predominated after the external debt crisis, and the need to sharply reduce the fiscal deficit in order to control inflation, led to cutbacks in public sector investment, which until then had accounted for virtually all infrastructure investment. These cutbacks held up important projects—and at times even delayed spending on maintenance—in the areas of energy, port infrastructure, irrigation and roads.

Private enterprise did not escape the consequences of this. Lack of maintenance has shortened the useful life of installations and reduced available capacity and the efficiency of services, thus affecting productivity in real activities as a whole. Examples of this are the limits on exports imposed by lack of port installations, the drop in production caused by electricity cuts due to lack of maintenance or expansion, and the deterioration in supply due to lack of roads. To illustrate this process in the region, it may be noted that between 1990 and 1994 investment in non-residential

construction had still not recovered fully from the sharp decline which began in 1982, except in Chile (table 2). A study carried out by the World Bank and quoted in Burki and Edwards (1995) draws a number of conclusions from this fact, noting that the region faces serious deficits in electrical energy generation, road construction, water supply and telecommunications, and that, in order to provide the capital necessary for export-led growth, infrastructure investment would need to rise by US\$60 billion per year over the next ten years (equivalent to 4.4% of the region's GDP).

Considering the process of structural reform that became a general phenomenon at the end of the 1980s, it might be thought that it would be most appropriate for the private sector to take on this expense. However, trends in private investment from 1978 to 1994 (table 2) are no different from those for public sector investment, which prompts the question of whether a joint effort is not called for. The debate on this subject is not new, but it is still relevant: on the one hand, there are those who hold that an increase in public sector investment would raise the capital accumulation rate above what private agents would like, with the result that the latter would reduce their spending on machinery and equipment. However, expenditure on capital to be allocated to infrastructure also has a complementary relationship with private investment, so that it would be necessary to assess the predominant effect. In Latin America, the limited development of statistics precludes rigorous analyses. Servén and Solimano (1993b), however, found in a sample of nine Latin American countries between 1982 and 1988 that the contraction in public-sector expenditure on gross fixed capital formation explained an annual drop in private investment equivalent to 0.5% of GDP. Similarly, with regard to the United States, Aschauer (1989a and 1989b) shows that public sector spending on infrastructure and non-military equipment complements private capital in the production of goods and services, by raising both the profitability and the productivity of private capital. The author emphasizes the close relationship between total factor productivity and public sector capital, and points out that the decline in productivity from 1970 onwards was preceded by a cut in public sector investment.

It can be argued that however clear the complementarity may be between public sector and private investment, there is simply no financing available in the region for public sector investment,

and countries that attempt to stimulate it are open to a resurgence of inflation. Indeed, in a number of countries the privatization process can be closely linked with the need to balance public sector finances in order to control inflation. This would in fact be an appropriate point to make some observations on privatization and the future of public sector investment.

First, if the sectoral distribution of privatization operations is analysed (Cominetti, 1995), it may be concluded that within public utilities the process has mainly affected the telecommunications and electricity sectors, which, once they were deregulated, became profitable for private agents; it has been much weaker in the infrastructure sector—water, ports and roads—where profitability is less easily identified and investment is riskier. In these areas, as in the developed world, the public sector has an important role to play both as regards financing (including obtaining external resources) and in taking the lead in forming investment partnerships with the private sector. Many of these investments take a long time to mature, and the private sector finds it difficult to identify them or does not see them as profitable.

Second, the privatization process in Latin America has suffered from a number of flaws (Devlin and Cominetti, 1994), some of which have been persistent obstacles to a proper accumulation process, such as the lack of regulation in non-competitive markets—which has meant that the gains in efficiency supposedly resulting from privatization have not been passed on to the community in the form of lower prices—and the scant progress in the coverage and quality of services. It is not always evident, then, that the sale of such services to the domestic or foreign private sector brings improvements.

Third, since in many cases the main objective was to obtain income in the short term, it was only exceptionally that a process of accumulation was encouraged in the privatized sectors by making the promotion of new investment an explicit part of the bidding conditions, as in Bolivia and Peru. In Bolivia, under the capitalization mechanism, strategic partners are obliged to contribute 50% of the value of the company when they buy. In Peru, clauses on future investment were incorporated in the bidding conditions, with definite undertakings on amounts and dates: thus, between 1992 and 1994, the public sector received the equivalent of US\$3.544 billion for 83 privatized enterprises, while US\$4.067 billion was committed in respect of investment projects

TABLE 6

**Latin America (8 countries): Estimated effect of
macroeconomic context on productive investment ^a**

Investment in machinery and equipment as % of GDP	Price ratio			Demand		Debt burden ^f	Insta- bility ^g	DEP ^h (-1)	R ² ⁱ	Durbin Watson statistic
	TI ^a	Tobin's Q ^b	CK ^c	% of GDP ^d	UCAP ^e					
Argentina: (1971-1994)	-	-	-0.002 (-2.4) ^j	-	-	-	-0.03 (-3.3)	0.17 (1.1)	0.71	2.1
Brazil: IPROD/GDP ^k (1971-1994)	-	-	-	-	0.11 (3.2)	-0.04 (3.8)	-0.04 (-4.9)	0.73 (11.8)	0.97	2.1
Colombia: IMYE/GDP ^l (1971-1994)	-	-	-0.03 (-1.9)	0.02 (3.1)	-	-	0.13 (0.19)	0.49 (3.0)	0.72	2.0
Costa Rica: IMYE/GDP (1971-1994)	-	-	-0.11 (-3.80)	-	0.26 (3.6)	-	-0.08 (-1.0)	0.30 (2.6)	0.91	1.96
Chile: IMYE/GDP (1971-1994)	-	0.04 (5.6)	-	-	0.06 (2.0)	-0.8 (-2.8)	-0.02 (-0.7)	0.03 (.03)	0.94	2.0
(1971-1984)	-	0.07 (5.3)	-	-	0.07 (3.4)	-0.01 (-4.3)	-0.03 (-1.5)	-	0.90	1.9
Mexico: IMYE/GDP (1971-1994)	-	-	-	-	0.44 (7.8)	-0.15 (-1.5)	-0.04 (-2.2)	0.80 (12.6)	0.95	2.0
(1982-1994)	-	-	-	-	-	-0.06 (-1.4)	-10.0 (-2.5)	0.70 (4.9)	0.87	1.9
Peru: IMYE/GDP (1971-1994)	0.06 (2.5)	-	-	0.10 (2.6)	-	-0.07 (-1.9)	-	0.70 (9.6)	0.93	2.2
(1983-1994)	0.06 (5.2)	-	-	-	-	-	-0.04 (5.8)	0.34 (8.8)	0.99	2.0
Venezuela: IPROD/GDP (1971-1994)	0.04 (1.2)	0.58 (2.54)	-	-	-	-	-0.38 (-1.9)	0.43 (2.3)	0.78	2.0

Source: Prepared by the author, on the basis of national accounts in the case of IPROD/GDP, IMYE/GDP, CK and annual variations in GDP; on the basis of ECLAC data in the case of T and the debt burden; and on the basis of data from IMF, *International Financial Statistics*, in the case of Tobin's Q and instability.

^a TI: Index of ratio of terms of trade for exports FOB to terms for imports CIF (1980=100).

^b Tobin's Q: Index of value of shares deflated by CPI (1980=100).

^c CK: Ratio of deflator of gross fixed capital investment to GDP deflator.

^d Percentage of GDP: Annual variation of GDP (logarithmic difference).

^e UCAP: Quotient of effective and potential product (the latter variable being estimated by the maximum values method) (1980=100).

^f Debt burden: Index of quotient of total debt/exports or debt service/exports (1980=100).

^g Instability: Index based on coefficient of annual variation of CPI, or of real exchange rate, or of real interest rates, on the basis of monthly data.

^h Lagged dependent variable.

ⁱ Correlation test.

^j Figures in brackets correspond to Student's T statistics.

^k IPROD/GDP: Index of quotient of productive investment (machinery and equipment + non-residential construction)/GDP (1980=100).

^l IMYE/GDP: Index of quotient of investment in machinery and equipment/GDP (1980=100).

(Cominetti, 1995). In the other countries, the privatized companies that have increased their capital and investments have been in telecommunications and energy (hydroelectricity, gas and oil) or have been big mining companies with good potential for expansion. However, as this is a recent process in many of the countries, it may not yet be reflected in the figures for gross fixed capital formation at the global level.

4. Empirical estimates of the factors determining investment

In order to assess the effect on investment of the macroeconomic environment and financial constraints, functions for productive investment were estimated, measured as proportions of GDP, for eight countries which had figures available for 1970-1994 (table 6). The exercise was carried out using a partial

adjustment model traditionally employed to reflect the dynamics of an adjustment process applied to a desired stock of capital. The explanatory variables may be grouped as follows: i) those related to the income accelerator effect (variation in GDP or in degree of utilization of installed capacity); ii) relative prices (including the cost of capital, an approximate index of Tobin's Q and the terms of trade); iii) an indicator of instability, such as the rate of variability of the CPI, of the real interest rate, or of the real exchange rate (this latter indicator gave the best results); and iv) –since no suitable indicator of financial constraints was available– an indicator of the debt burden (measured as the amount of total external debt or of financial debt service) over exports of goods and services, on the assumption that this indicator is in inverse relation to the availability of finance in the private sector.

The results show that in Brazil and Mexico the relative price indicators were not significant, and the variables which explained over 90% of the variance of the coefficient of productive investment were the use of installed capacity, instability and the debt burden. Only in three of the eight countries did indicators of investment cost and profitability have a significant impact. However, it was confirmed that risk coefficients, measured by the coefficients of variation of monthly inflation, real exchange rate or real inter-

est rates, had a significant negative effect in all those countries which have undergone periods of high instability, such as Argentina, Brazil, Mexico and Peru. In Colombia, Costa Rica and Chile (this last from 1985 onwards), it was established that investment was not appreciably affected by variability in basic prices.

In countries where the adjustment of domestic demand was sudden, intensive and prolonged, the indicator of utilization of installed capacity (effective output/potential output) was significant and had a greater impact on investment than that of relative prices. This was only to be expected, since those countries faced severe constraints on sales, and although these gradually recovered, this led at the same time to great under-utilization of installed capacity and did not fulfil investment requirements. Later, the reorientation of production towards external markets, with the consequent need to modernize and raise production, created a new drive in investment, particularly from the early 1990s onwards. As to debt burden indicators, in four of the countries worst affected by the crisis of the 1980s (Brazil, Chile, Mexico and Peru) the variables were negatively significant, as expected: i.e., higher debt service payments reduce savings for financing investment, while a higher level of borrowing affects the country risk coefficient and the feasibility of obtaining external resources.

IV

Policies to stimulate investment

It may be concluded from the foregoing analysis that, in the first place, although macroeconomic stability is not of itself a sufficient condition, it is certainly fundamental to the establishment of a favourable climate for investment, and it is the government's duty to maintain it. Short-term successes in stabilization or growth are not enough if they are not backed up by progress in the macroeconomic base.

The experience of the early 1980s and, more recently, the 1990s, when the availability of external financing coincided with inducements to spend, reveals the danger of suffering balance of payments crises or having to make harsh adjustments of economic activity to avoid such crises, with their corollary of marked fluctuations in key prices and the

subsequent disincentive to investment. This suggests that a process of growth that is moderate and consistent with trends in potential GDP, and in which prices remain stable and predictable, carries the assurance of greater potential for growth in the future.

Second, Latin American entrepreneurs are rather conservative in their behaviour, with marked aversion to risk, which is not surprising in as yet fragile macroeconomic scenarios where economic reforms are still being consolidated. They are cautious about moving into new scenarios of economic reform and hesitate to show confidence in new policies until these attain a certain level of permanence in time, since investments are long-term operations and it is costly to reverse them once they have been made.

Private investment has thus been rather slow to react to the structural reforms of recent years. Policy modifications in some countries, or the implementation of reforms in line with inconsistent macroeconomic policies, have also not helped to establish a climate favourable to investment. Consequently, consistency between economic policy and reforms, and the long-term stability of both these elements, are fundamental.

Third, the drop in public investment during the 1980s led in many countries to a serious deterioration in the infrastructure of sectors where it was complemented with private investment and provided positive externalities (the energy, telecommunications, port infrastructure and roads sectors). In order to increase competitiveness and continue promoting exports, these countries will have to undertake large investment projects in the areas in question over the next five years. Cooperation with the private sector, through concession systems, co-management or joint exploitation, is a formula which has allowed joint financing of projects, sharing a task which was previously the sole responsibility of the State. Examples of such cooperation, which is spreading through the region, are road construction, which in a number of cases (such as Mexico) has been left entirely in the hands of the private sector, which recoups its investment by charging users directly according to State-regulated tariffs, and joint or State-subsidized financing of projects where there are multiple externalities (less pollution, improvement of the environment, elimination of traffic jams and noise, etc.)

With regard to telecommunications and the energy sector, there is general consensus that it is necessary to get away from both the traditional public service model and that of private monopolies. Currently, national debates cover issues ranging from the need for regulations that stimulate private competition and make it work when such services are privatized, to the need for clauses and undertakings on the coverage and modernization of services and the execution of investments in them. The recently-established process of public link-ups with private investment in the health sector in Chile and the privatization operations which have got under way in Bolivia and Peru in recent years are moves in this direction.

Among policy instruments, one which has not yet been developed very much in the region is the establishment of tax incentives for entrepreneurial investment. Despite the reforms carried out, the tax

burden in the countries of the region continues to be low, and modernization of tax administration and control of evasion is still by no means completed. The structure of the system also allows for fresh modifications tending to create tax incentives for ploughing profits back into companies. One mechanism applied in other countries is to transfer the tax burden from the companies to individuals, by exempting profits reinvested in the company.

The 1984 Chilean tax reform sought explicitly to create tax incentives for company savings, through the reinvestment of profits. This reform significantly reduced the marginal tax rate on profits ploughed back into companies, as compared with the tax on distributed profits; it equalized the tax treatment of corporations and limited companies, eliminating the additional tax on the former; it taxed retained earnings at a rate of only 10%; it removed retained earnings from the taxable income of owners of limited companies, and it standardized tax credits on non-wage income for all entrepreneurs. After the reform came into effect, company savings rose from 8.0% to 16.3% of GDP between 1986 and 1994. This progress was also aided by average annual GDP growth of over 6%, rapid financial development, a climate of macroeconomic stability and the long-term continuation of the incentives.

Another mechanism that is not sufficiently widely used is the financing of personnel training through matching tax reductions, that is to say, promotion of investment in human capital. This instrument has taken a variety of forms (training in specialized institutions or abroad, agreements between business organizations and universities) and has raised worker productivity and improved business competitiveness.

Lastly, it may be noted that the public sector savings drive of the 1990s has not been matched by a similar drive in the private sector, and this has limited the availability of internal financing for investment. Financial reform has not always favoured the process of investment, whether because appropriate long-term instruments have not been developed or because the task of completing markets was not addressed in the best way, by attending to sectors which were marginalized in terms of access to credit. Furthermore, high domestic interest rates, which varied enormously with respect to international rates, did not help to create competitive conditions for new investment projects. Currently, a number of countries are implementing policies which aim to link financial saving

with investment, to improve prudential regulation and supervision of the banks, to expand and disseminate long-term instruments and to regulate interna-

tional capital flows. However, these policies are not yet general throughout the region.

(Original: Spanish)

Bibliography

- Amadeo, E. J. (1993): Adjustment, stabilization, and investment performance: Chile, Mexico and Bolivia, in L. E. Bacha (ed.), *Savings and Investment Requirements for the Resumption of Growth in Latin America*, Washington, D. C., Inter-American Development Bank (IDB).
- Aschauer, D. (1989a): Is public expenditure productive?, *Journal of Monetary Economics*, No. 23, Amsterdam, North-Holland Publishing Company.
- (1989b): Does public capital crowd private capital?, *Journal of Monetary Economics*, No. 24, Amsterdam, North-Holland Publishing Company.
- Bacha, L. E. (ed.) (1993a): *Savings and Investment Requirements for the Resumption of Growth in Latin America*, Washington, D. C., IDB.
- (1993b): Public sector savings: The cases of Argentina, Brazil, and Colombia, *Savings and Investment Requirements for the Resumption of Growth in Latin America*, Washington, D. C., IDB.
- Burki, S. and S. Edwards (1995): *América Latina y la crisis mexicana: nuevos desafíos*, Serie documentos de trabajo, No. 235, Santiago, Chile, Centre for Public Studies (CEP).
- Cárdenas, M. and M. Olivera (1995): *La crítica de Lucas y la inversión en Colombia: nueva evidencia*, Santafe de Bogotá, National Planning Department (DNP), Macroeconomic Analysis Department.
- Cardoso, E. (1993): Macroeconomic environment and capital formation in Latin America, in L. Servén and A. Solimano (eds.), *Striving for Growth after Adjustment. The Role of Capital Formation*, Washington, D. C., World Bank.
- Chisari, O., J. M. Fanelli, R. Frenkel and G. Rozenwurcel (1993): Argentina and the role of fiscal accounts, in L. E. Bacha (ed.), *Savings and Investment Requirements for the Resumption of Growth in Latin America*, Washington, D. C., IDB.
- Cominetti, R. (1995): *El proceso de privatización en América Latina*, Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), mimeo.
- Corbo, V. and P. Rojas (1993): Investment, macroeconomic stability and growth: The Latin American experience, *Revista de análisis económico*, vol. 8, No. 1, Santiago, Chile, Latin American Institute of Social Theory and Social Studies (ILADES).
- De Melo, J. and J. Tybout (1986): The effects of financial liberalization on savings and investment in Uruguay, *Economic Development and Cultural Change*, vol. 34, No. 3, Chicago, IL, The University of Chicago, April.
- Devlin, R. and R. Cominetti (1994): *La crisis de la empresa pública, las privatizaciones y la equidad social*, Serie reformas de política pública, No. 26, LC/L. 832, Santiago, Chile, ECLAC.
- Dias Carneiro, D. and R. L. Werneck (1993): Obstacles to investment resumption in Brazil, in L. E. Bacha (ed.), *Savings and Investment Requirements for the Resumption of Growth in Latin America*, Washington, D. C., IDB.
- Dixit, A. (1992): Investment and hysteresis, *The Journal of Economic Perspectives*, vol. 6, No. 1, Menasha, WI, The American Economic Association.
- Dixit, A. and R. Pyndick (1993): *Investment under Uncertainty*, Princeton, NJ, Princeton University Press.
- Greene, J. and D. Villanueva (1991): *Private investment in developing countries: An empirical analysis*, Staff Papers, vol. 38, No. 1, Washington, D. C., International Monetary Fund (IMF).
- Held, G., D. Titelman and A. Uthoff (1995): *Ahorro, instituciones financieras y formación de capital en América Latina y el Caribe*, Santiago, Chile, ECLAC, October, mimeo.
- Hofman, A. (1995): *Capital stock in Latin America: A 1994 update* (mimeo). (To be published in the *Cambridge Journal of Economics*).
- Larraín, B., F. Vergara and R. Vergara (1993): Inversión y ajuste macroeconómico: el caso del este de Asia, *El Trimestre Económico*, vol. 60 (2), No. 238, April-June.
- Love, J. (1989): Export instability, imports and investment in developing countries, *The Journal of Development Studies*, vol. 25, No. 2, London, Frank Cass & Co. Ltd., January.
- Ocampo, J. A., L. Londoño and L. Villar (1988): Saving and investment in Colombia, in R. Werneck (ed.), *Saving and Investment in Latin America. Report 207*, Ottawa, International Development Research Centre (IDRC).
- Pyndick, R. (1991): Irreversibility, uncertainty, and investment, *Journal of Economic Literature*, vol. XXIX, No. 3, Menasha, WI, The American Economic Association.

- Pyndick, R. and A. Solimano (1993): *Economic instability and aggregate investment*, Policy Research Working Papers, No. 1148, Washington, D. C., World Bank, June.
- Rama, M. (1993): Empirical investment equations in developing countries, in L. Serven and A. Solimano, *Striving for Growth after Adjustment. The Role of Capital Formation*, Washington, D. C., World Bank.
- Sánchez, F. and E. Lora (1993): Savings, investment, and growth perspectives in Colombia, in E. L. Bacha (ed.), *Savings and Investment Requirements for the Resumption of Growth in Latin America*, Washington, D. C., IDB.
- Serven L. and A. Solimano (eds.) (1993a): *Striving for Growth after Adjustment. The Role of Capital Formation*, Washington, D. C., World Bank.
- (1993b): Economic adjustment and investment performance in developing countries: The experience of the 1980's, in *Striving for Growth after Adjustment. The Role of Capital Formation*, Washington, D. C., World Bank.
- (1995): La inversión privada y el ajuste macroeconómico: una evaluación, in A. Villagómez (ed.), *El financiamiento del desarrollo en América Latina: la movilización del ahorro interno*, Mexico City, Centre for Latin American Monetary Studies (CEMLA).
- Schmidt-Hebbel, K., L. Serven and A. Solimano (1994): *Saving, investment and growth in developing countries: An overview*, Policy Research Working Papers, No. 1382, Washington, D. C., World Bank, November.
- Solimano, A. (1989): *How private investment reacts to changing macroeconomic conditions: The case of Chile in the 1980s*, Policy, Planning and Research Working Papers, No. 212, Washington, D. C., World Bank.