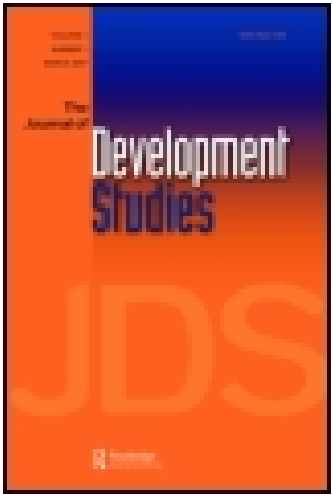

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Modelling the demand for foreign savings in developing countries: Testing a hypothesis with Latin American data

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Modelling the Demand for Foreign Savings in Developing Countries: Testing a Hypothesis with Latin American Data

*by Nathaniel H. Leff and Kazuo Sato**

The demand for foreign savings is an important feature of the economy in many LDCs, and it would be helpful to have a better understanding of its determinants. This paper considers one approach to modelling the demand for foreign savings in LDCs. If the demand for investment shifts out more buoyantly than does the supply of domestic saving in response to current macro-economic conditions, persistent demand for foreign savings will be generated as a normal feature of the development process. We test this hypothesis with elasticities computed from the parameters of investment and domestic saving equations estimated for a sample of 21 Latin American countries. The empirical results show that in approximately half of the countries in the sample (and most notably in Brazil and in Mexico), the demand for foreign savings is rooted in the parameters of the investment and domestic saving functions.

I. INTRODUCTION

What conditions determine the magnitude of foreign-capital flows to less-developed countries (LDCs)? The reduced-form answer, of course, is: risk-adjusted relative rates of return as between the capital-importing country and the international capital market. That answer is satisfactory as far as it goes. But to achieve a better understanding of the determinants of international capital flows, it may help to take the discussion further and distinguish between the demand and the supply sides of the market. Interpretations of variations in capital flows (over time or between countries) to LDCs typically emphasise conditions on the supply side of the international capital market. But as in other markets, movements on the demand side may also play a role, and it would be misleading to ignore them. The importance of demand conditions is suggested by a basic fact: although most developing countries have access to the same supply in the world capital market, differences between LDCs in the ratio of foreign capital inflow to Gross Domestic Product are large.[1]

Modelling the supply of foreign savings to individual LDCs is conceptually

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straightforward. Country-specific risks lead to an upward-sloping supply function for individual country capital-importers [*Diaz-Alejandro, 1985*]. That supply function is shifted by conditions in the international credit market, including changes in 'political factors' [*Taylor, 1983: 178*]. By contrast, modelling the demand side is more difficult.[2] This article specifies and tests one way of modelling an LDC's demand for foreign savings.

II. SOME BACKGROUND

One obvious way to proceed would be to estimate a model in which the demand for capital imports is a function of the difference between an LDC's domestic interest rate and the terms on which foreign savings are available. Lack of reliable data on the marginal costs of financing investment domestically, or (with credit rationing) from overseas precludes that methodological approach. Consequently, we proceed in a different manner, focusing on quantities rather than on prices.

National-income accounting shows that a country's use of foreign savings reflects a disparity between its aggregate investment and its domestic saving. That observation suggests the following hypothesis. Perhaps the demand for foreign saving is driven by differences in the pace at which a country's aggregate investment and domestic saving functions shift outward in the course of the development process. Under such circumstances, demand for foreign savings in an LDC would be 'structural' in the sense of being rooted in the parameters of the country's investment and saving equations. We investigate that hypothesis and explore its empirical relevance. We do so by considering elasticities computed from the parameters of investment and domestic saving equations for a set of developing countries. To keep the study manageable and to reduce the degree of institutional heterogeneity within the sample, the investigation is limited to a set of 21 Latin American countries. Also, in the spirit of progressing one step at a time, this article focuses on the demand side and does not specify and estimate equations for the supply of foreign capital.

The hypothesis that persistent demand for net foreign savings may be 'structural' in some LDCs is consistent with casual empiricism. Some Latin American economies seem to be characterized by chronic demand for capital imports. The demand for foreign savings is a mechanism through which patterns of consumption and production are reallocated over time in open (and semi-open) economies. Consequently, persistent demand for current-account deficits may seem to violate a basic equilibrium condition: that the present value of a country's current-account deficit equal zero. In practice, that condition may not always be satisfied – witness the external debt crisis of some Latin American countries. The conditions in the international capital market that made this situation possible involve perceptual and institutional distortions on the part of foreign lenders [*Guttentag and Herring, 1986*].

Before proceeding to formal specification of the model, note some antecedents in the literature. Our hypothesis is the mirror image of the Hobson–Lenin interpretation (see also Scitovsky [*1969: 127–9*]) concerning the *supply* of capital exports from the economically-advanced countries. That

interpretation suggests that in the course of their economic growth, the economically more-developed economies normally generate a greater supply of domestic saving than of profitable domestic investment opportunities. The result is persistent pressure for capital exports. Analogously, we hypothesise that in their expansion path, LDCs generate a greater demand for investment than of domestic saving to finance it. In another antecedent line of analysis, some writers (see, for example, Sachs [*1981*] and Riedel [*1983*]) have also stressed the importance of LDC investment conditions in determining their demand for capital imports. In itself, that formulation is inadequate, for it does not explain why the supply of domestic saving does not increase sufficiently to finance the rise in investment. This article focuses on that more complete specification and testing of the demand for foreign savings. Finally, other writers have also emphasised the importance of intertemporal optimisation in determining the demand for current-account deficits in developing countries. The present article goes further by positing a structural basis for such behaviour.

III. THE ANALYTICAL FRAMEWORK

To specify the hypothesis formally, we begin with the gross national product identity:

$$Y = C + I + X - M; \tag{1}$$

where C = (public and private) consumption; I = gross domestic capital formation; X = exports (including factor income from abroad); and M = imports (including factor payments to foreigners). Following a standard convention of national-income analysis, an equivalent statement of (1) is the *IS* identity:

$$I = S + F \tag{2}$$

where S is gross domestic saving defined by

$$S = Y - C \tag{3}$$

and F is foreign savings, defined by

$$F = M - X = I - S. \tag{4}$$

As equation (4) indicates, the amount of foreign savings demanded, F^d, may reflect either domestic investment-saving (*IS*) conditions – the goods market – or export-import (*XM*) conditions, the foreign-exchange market. Further, in many LDCs, interest rates and exchange rates are not permitted to operate as market-clearing mechanisms [*Ronald McKinnon and Donald Mathieson, 1981*]. Consequently, F^d may well exceed F^s, the amount of foreign saving supplied, and either the *IS* or the *XM* gap will dominate. The hypothesis that we consider is that the demand for foreign savings, F^d, is determined by domestic saving and investment conditions. Obviously the model applies only if the *IS* constraint is binding; in other cases, the *XM* constraint holds.

More generally, we view the relation of F^d to the I and S functions as follows. When aggregate investment demand exceeds the supply of domestic savings, excess demand for goods spills over into the balance of payments and increases the demand for current-account deficits. In addition, excess demand for goods within the domestic economy raises the returns to capital, and leads firms to seek increased working capital in order to expand output and sales from their existing capital stock. Such pressure for increased working capital also generates demand for foreign savings. Both of these processes involve increased domestic credit expansion. Consequently, one might attribute the demand for F soley to domestic monetary conditions. Such an interpretation may be incomplete. Underlying the process and driving it, we hypothesize, may be persistent excess demand for goods determined by the parameters of the aggregate investment and domestic saving functions.

IV. SPECIFICATION AND ESTIMATION

At this point we should derive investment and domestic saving equations and estimate their parameters for the countries in our sample. We have already completed that task in another article [*Leff and Sato, 1988*], which is available from the authors. That paper presents in detail the reasoning that underlies our specification of the investment and saving equations. Consequently, our discussion here can be relatively brief.

One variable that may influence investment in developing countries is ΔY, the change of GNP over the preceding period. That term enters the investment function because of possible accelerator effects: the impact of current output growth on the returns to capital and hence on the desired capital stock. In addition, we expect ΔY to be associated with higher profits and internal cash flow, an important source of finance for capacity expansion in developing countries.

Investment in LDCs is also likely to be a positive function of the expected rate of price inflation, P^e. The expected-inflation term enters because of market or institutional constraints that preclude instantaneous cost adjustment. In the presence of such rigidities, firms may anticipate that under more inflationary conditions due to demand shocks, they will be able to raise prices ahead of costs and thus increase real profits. Likewise, the expected rate of inflation may be closely linked to real interest rates, in a way that makes I a positive function of P^e.

For lack of reliable time-series on interest rates, that variable cannot be included directly in our investment equation. However, we do specify a variable related to the shadow price of credit. Firms in developing countries often rely heavily on bank credit to finance additions to their capital stock [*Blejer and Khan, 1984*]. Also, in economies where financial markets are often repressed, credit availability may exert a separate influence – distinct from interest-rate effects – on investment decisions. Accordingly, we also specify the change in the stock of real credit, ΔCR. Because the monetary authorities generally maintain interest rates below market-clearing levels [*McKinnon and Mathieson, 1981*], there is usually excess demand for credit. For this reason, we interpret changes in ΔCR as reflecting shifts in the supply of credit.[3]

For reasons discussed at length in Leff and Sato [*1988*], we do not specify foreign capital inflow as an explanatory variable in the investment (or in the savings) equation. Thus, including a constant term to capture the effects of predetermined variables we have not considered and adding a stochastic term u, we write the investment equation as:

$$I = a_0 + a_1\Delta Y + a_2\dot{P}^e + a_3\Delta CR + u \tag{5}$$

As regards the signs of the parameters in equation (5), we expect a_1, a_2, $a_3 > 0$.

We view saving as a process in which people increase their asset holdings in order to reach desired wealth targets (see, for example, Metzler [*1951*]). That view leads to the expectation that saving will be a positive function of current income growth, ΔY. In addition, saving in LDCs may well be a function of P^e. In the absence of a large stock of inflation-indexed assets, higher expected inflation may induce people to save more in order to maintain their real asset and liquidity positions. Such a real-balance effect would imply a positive sign on the P^e term. Likewise, higher expected inflation and its associated higher variance increase agents' uncertainty [*Glezakos and Nugent, 1986*]. As a result, expectations of higher inflation may lead to increased saving for precautionary purposes.

There are also *a priori* reasons for expecting a negative effect of P^e on saving in these countries. With lags in the adjustment of interest rates or exchange rates to inflation, higher expected inflation may lead to increased spending on domestic or imported consumer durables [*Lluch,* et al., *1977*]. P^e is also likely to be correlated with expectations concerning exchange-rate devaluation. The latter variable has been shown to affect portfolio decisions in Latin American countries [*Edwards, 1985; Marquez, 1987*], and may well exert a negative influence on domestic saving. All these considerations urge inclusion of P^e in the savings equation; but the differing *a priori* perspectives leads to indeterminacy concerning this term's expected sign. Finally, actual saving may not adjust instantaneously to desired saving levels. Accordingly, we also specify a lagged endogenous variable in the saving equation. Adding a constant term to capture the effects of omitted predetermined variables and a stochastic term, v, we write the savings function as:

$$S = b_0 + b_1\,\Delta Y + b_2\,\dot{P}^e + b_3\,S_{-1} + v \tag{6}$$

We expect the signs of b_1 and $b_3 > 0$; while the sign of b_2 is indeterminate *a priori*. As noted earlier, in the national-income accounts, foreign saving is measured as the difference between aggregate investment and domestic saving. Because we estimate the investment and saving equations as functions of the determinants of I and S, our model gives behavioural content to what would otherwise be only an accounting identity. The model's parameters, in conjunction with the right-hand-side variables, thus determine the specific level of I, S, nd F^d at which the economy actually operates.

Equations (5) and (6) were estimated with time-series observations for each of 21 Latin American countries. The data are from the International Monetary Fund's *International Financial Statistics* tape. All variables except P^e are expressed in constant-price local-currency units, and the observations

are for the years 1955–83. Simultaneous-equations bias is clearly a potential problem in estimating investment and savings functions. For this reason, equations (5) and (6) were estimated using three-stage least-squares. Instrumental variables were used to generate estimates of the endogenous variables ΔY and P^e. The instruments specified reflected the current information available on the correlates and determinants of short-run income growth and inflation in LDCs. Hence this procedure provided a rough approximation of a rational-expectations series for P^e and ΔY. In addition, recognising that the error terms of the investment and saving equations may be correlated, we applied the Zellner [*1962*] method to estimate (5) and (6) as a system of seemingly unrelated regressions. Hatanaka's [*1974*] method was utilised to correct for serial correlation of the error term in (6) due to the lagged endogenous variable. The equations were estimated with the observations weighted to mitigate problems of heteroscedasticity.

Details of the estimation procedures, and tables presenting the parameter estimates of equations (5) and (6) are available in Leff and Sato [*1988*]. For present purposes, it suffices to note that for almost all countries in the sample, the model fit well. Most parameters were estimated with a high degree of precision, as indicated by low standard errors. Data on this question are presented in the Appendix of this article.

V. ELASTICITIES AND THE DEMAND FOR FOREIGN SAVINGS

Our focus here is not on the investment and saving equations *per se*, but rather on the possibility that I and S shift outward at different rates in a manner that generates demand for F. We can approach this question in the following way. We use the parameter estimates of the investment and saving equations to compute standardised response coefficients: the impact elasticities of I and S with respect to the key macroeconomic variables that the investment and savings equations have in common, current income growth and expected inflation. We can then consider the differences, if any, between the saving and the investment elasticities in individual countries. Table 1 presents the elasticities of aggregate saving and investment with respect to ΔY and P^e for 21 Latin American countries. These elasticities were computed using the mean values for ΔY and P^e in each country, and the parameter estimates of equations (5) and (6).[4]

Table 2 focuses on the central feature of these elasticities in this context, by displaying the differences in the responses of saving and of investment. The first column shows the difference for each country between the investment and domestic saving elasticities with respect to ΔY. These differences were computed by subtracting the investment elasticity from the saving elasticity. Hence, a negative figure in column (1) indicates a country where current income growth induces more demand for investment than supply of domestic saving. For countries with negative differences, the hypothesis proposed in the Introduction is supported: the parameters of the saving and investment functions generate demand for foreign saving. The differences presented in column (2) were computed in a like manner from the elasticities with respect to P^e. In that column, too, a negative difference shows that the

TABLE 1
ELASTICITIES OF SAVING AND INVESTMENT WITH RESPECT TO INCOME GROWTH AND EXPECTED INFLATION IN 21 LATIN AMERICAN COUNTRIES

Country	$e[S,\Delta\bar{Y}]$	$e(I,\Delta\bar{Y})$	$e[S,\hat{\bar{P}}^e]$	$e[I,\hat{\bar{P}}^e]$
ARGENTINA	0.013	0.005a*	0.135	0.205
BOLIVIA	0.078	0.367	0.164	0.182
BRAZIL	0.157	0.464	0.025	0.239
CHILE	0.260	0.344	-0.034	-0.038
COLOMBIA	0.178	0.328	0.158	0.406
COSTA RICA	0.360	0.249	0.020a*	0.102
DOMINICAN REPUBLIC	0.046a*	-0.240	0.065	0.185
EL SALVADOR	0.112	0.182	0.062	0.115
GUATEMALA	0.084	0.206	0.061	0.126
GUYANA	0.021	0.040	0.079	0.015a*
HAITI	0.241	0.065a*	-0.022a*	0.126
HONDURAS	0.143	0.048	0.073	0.266
JAMAICA	0.012a*	-0.002a*	0.045a*	0.010a*
MEXICO	0.179	0.569	0.094	0.197
NICARAGUA	0.132	0.141	-0.000a*	0.096
PANAMA	0.173	-0.009a*	0.010a*	0.172
PARAGUAY	0.363	0.448	-0.037a*	0.187
PERU	0.172	0.111	0.164	0.178
TRINIDAD AND TOBAGO	0.169	0.436	0.072	0.086
URUGUAY	0.042	0.106	0.154	0.058
VENEZUELA	0.020a*	-0.044a*	0.039	0.129

Note: a* denotes elasticity computed on the basis of a parameter estimate not greater than its standard error.

magnitude of the investment response exceeds the saving response, and thus suggests a structural basis to the demand for foreign saving.

The results presented in Table 2 indicate considerable behavioral diversity within the set of Latin America countries. For the ΔY elasticities, 11 of the 21 countries show a negative elasticity difference greater in absolute value than $-.05$.[5] The size of the negative differences for Bolivia, Brazil,

TABLE 2
DIFFERENCES BETWEEN SAVINGS AND INVESTMENT ELASTICITIES IN 21 LATIN AMERICAN COUNTRIES

COUNTRY:	(1) Difference with respect to $\Delta\hat{Y}$	(2) Difference with respect to $\hat{P}^e$
ARGENTINA	0.008	-0.070
BOLIVIA	-0.289	-0.018
BRAZIL	-0.307	-0.215
CHILE	-0.084	0.004
COLOMBIA	-0.150	-0.248
COSTA RICA	0.111	-0.082
DOMINICAN REPUBLIC	0.257	-0.120
EL SALVADOR	-0.069	-0.052
GUATEMALA	-0.122	-0.064
GUYANA	-0.020	0.064
HAITI	0.176	-0.148
HONDURAS	0.095	-0.492
JAMAICA	0.013	0.036
MEXICO	-0.389	-0.103
NICARAGUA	-0.010	-0.096
PANAMA	0.182	-0.162
PARAGUAY	-0.085	-0.224
PERU	0.061	-0.014
TRINIDAD AND TOBAGO	-0.267	-0.014
URUGUAY	-0.063	0.097
VENEZUELA	0.064	-0.090

Note: Computed from the elasticities presented in Table 1.

Colombia, and Mexico are especially noteworthy. But for several countries, the net response with respect to ΔY is positive. In the case of the P^e responses, the pattern is also mixed. Fourteen countries show an elasticity difference greater than $-.05$. The figures for Brazil, Colombia, Haiti, Honduras, Mexico, Panama, and Paraguay are particularly large. Overall, the data of Table 2 suggest that the demand for capital imports reflects disparate investment-saving responses to current macroeconomic conditions in approximately half of the countries in the sample. Among these are Brazil and Mexico, two of the largest countries in the region.

It might appear attractive at this point to compare the results of Table 2 with actual flows of foreign capital, country by country, to see how well the flows are predicted. The problem with that approach is that it does not control for differences in induced policy efforts and controls to curb investment and/or promote saving. Just *because* of heavy parameter-induced demand for foreign saving, the domestic authorities may implement offsetting monetary and fiscal policies to reduce what they consider excessive tendencies in that direction.

VI. SOME IMPLICATIONS FOR GROWTH AND ADJUSTMENT

For the countries to which our model applies, the prospects for self-sustaining, autonomous development are clearly constrained. In those countries, economic expansion, particularly if accompanied by heightened inflationary expectations, will generate demand for increased capital imports. But if foreign saving is not elastically available, domestic economic growth will abort in an induced balance-of-payments crisis. Policy-makers have few options in this context. One possibility is to attempt to manage the economy in a manner that maintains creditworthiness in the international capital market. Another possibility is to curb the excess demand for foreign saving by means of controls, with the ensuing disequilibrium also affecting other markets in the economy.

The elasticity differences shown in Table 2 also have implications for longer-term development regimes. For countries where persistent demand for capital imports stems from the domestic saving and investment parameters, embarking on a new development pattern that does not involve either continuing dependency on foreign-capital inflow or macroeconomic disequilibrium would clearly be difficult. The economy's development options could be expanded if the parameters of the savings equation would change – or could be altered by policy action – to generate a more buoyant supply of domestic saving. Unfortunately, few empirically-grounded and politically-feasible proposals can be suggested for raising domestic saving rates in developing countries [*Leff and Sato, 1987*]. Without change in the *IS* parameters, however, patterns of dependent or self-limiting growth are likely to persist.

Our results also indicate that balance-of-payments dynamics in developing countries are richer than an analysis focusing exclusively on the supply side of the international capital market would imply. For example, the shift in supply that occurred with petrodollar recycling in the 1970s was obviously

a key feature of capital movements during that period. But our analysis suggests that by affecting ΔY and P^e in a capital-importing LDC, foreign-capital inflow may also stimulate a cumulative expansion in the demand for capital imports. If that expanded demand outpaces supply, lending rates may rise sharply, leading to a crisis in the country's international accounts. Similarly, researchers have considered the implications for a country's capital imports of exogenous shifts in international interest rates or in the external terms of trade [*Persson and Svensson, 1985*]. Our results indicate that in some countries, such changes will also affect the arguments of the country's F^d function. The actual outcome depends on the magnitudes of the parameters on the ΔY and P^e terms.

In the Latin American countries to which our model does not apply, the demand for current-account deficits derives from a source other than the parameters of the domestic saving and investment functions. The insights of the 'two-gap' model – in which either the *IS* or the *XM* constraint dominates – are relevant here. Equation (4) indicates that if domestic demand for current-account deficits is not determined by *IS* conditions, it reflects export-import conditions that lead to excess demand for foreign exchange. In these countries, exchange-rate policy has special importance for macro-economic management.

Within the set of countries to which our *IS* hypothesis applies, Table 2 also shows that F^d may respond differently to changes in income growth and in expected inflation. These results have implications for the design of stabilisation programmes. Consider the case where the supply of foreign savings falls, and the country's balance of payments must be stabilized. Our results suggest the possibility of situations where ΔY falls in a stabilising manner, but with lags in the downward adjustment of P^e, the demand for F continues to rise. In such circumstances, the persistence of stabilization problems becomes readily understandable. So too does the proclivity of LDC policy-makers to apply quantitative controls on domestic investment or on the credit expansion that promotes it.

VII. CONCLUSIONS

This article has focused on the conditions that determine the demand for foreign savings in developing countries. The hypothesis we have considered is straightforward. Are the relative magnitudes of the parameters of the domestic saving and investment functions such as to generate demand for F as a normal feature of economic growth and/or expected inflation? When we examined the elasticities that reflect the behavioural responses of S and I in the Latin American countries, we found support for the hypothesis in half the countries of the sample. For those countries (which include Brazil and Mexico), a focus on the parameters of the saving and investment equations seems useful for understanding the underlying causes of LDC demand for foreign savings. By contrast, in the remaining countries of the sample, other conditions determine the demand for current-account deficits. As noted, these diverse behavioral patterns have implications for current-account dynamics and for the design of stabilisation programmes.

The article also provides a useful reminder concerning behavioral heterogeneity among developing countries. The degree of institutional and cultural similarity is probably greater within Latin America than within the set of less-developed countries as a whole. Nevertheless, our results show considerable diversity within the sample in the conditions that determine the demand for foreign savings. Finally, the theory of foreign-capital demand that we have considered here is a formalisation of a broader perspective that sees LDCs as facing a surfeit of high-return investment opportunities – a larger opportunity set than they can finance from domestic resources. If the model does not in fact apply for many LDCs, one is led to question the empirical relevance of that underlying presumption.

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NOTES

1. For example, in a sample of 21 Latin American countries, the annual ratio of aggregate net capital inflow (F) to GDP (Y) ranged from −7.1 per cent to +7.7 per cent. The mean F/Y for the 21 countries was 2.0 per cent, with a standard deviation of 3.4. These figures were computed from data in the International Monetary Fund's *International Financial Statistics* tape, and refer to the years 1955–83.
2. Rudiger Dornbusch [*1985*] has also noted this difference. Writing in the context of bank lending to Latin American countries, he points out (p. 214) that 'On the demand side, the reasons for the debt build-up are much less clearcut'.
3. As discussed below, P^e is estimated using instrumental variables, and thus is statistically independent of ΔCR.
4. As indicated in Table 1, some of the parameter estimates used to compute the elasticities were smaller than their standard errors. The elasticities were also computed for those cases; for those point estimates provide the best available information on the magnitude of the relevant parameter.
5. The relative magnitudes of ΔY and F in many countries are such that even with elasticities of .05, year-to-year changes in $\Delta Y/Y$ that are not unusually large (for example, an increase in the rate of economic growth from .03 to .04) are associated with large movements in F^d/Y.

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APPENDIX

This appendix supplies data concerning the parameter estimates cited in the text, but presented in another article [*Leff and Sato, 1988*]. For almost all of the 21 countries in the sample, the model fit the data well; most parameters were estimated with low standard errors. Appendix Table 1 shows information on the statistical significance of the three parameters estimated for the investment equation (5). As the table indicates, most countries had at least two of the three parameter estimates significant at the 0.95 confidence level. Only one country (Jamaica) had no parameter estimates significantly different from zero at that level.

APPENDIX TABLE 1
STATISTICAL SIGNIFICANCE OF THE PARAMETER ESTIMATES FOR THE INVESTMENT EQUATION IN 21 LATIN AMERICAN COUNTRIES

Number of Countries	Number of parameter estimates significant at the 0.95 level
1	0
1	1
13	2
6	3

Note: Compiled from information in Leff and Sato [*1988: Table 1*]. The data presented here refer to the three parameters in equation (5) other than the constant term.

Appendix Table 2 presents similar information for the parameter estimates of the savings equation (6). The model did not fit the data for two countries (Haiti and Jamaica), for which no parameter estimates were significant at the 0.95 level. But as the Table indicates, most countries had at least two parameter estimates significant at the 0.95 level.

APPENDIX TABLE 2
STATISTICAL SIGNIFICANCE OF THE PARAMETER ESTIMATES FOR THE SAVINGS EQUATION IN 21 LATIN AMERICAN COUNTRIES

Number of Countries	Number of parameter estimates significant at the 0.95 level
2	0
2	1
9	2
6	3

Note: Compiled from information in Leff and Sato [*1988: Table 2*]. The data presented here refer to the three parameters in equation (6) other than the constant term.