CAT

SWP141

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

INTERNATIONAL DEVELOPMENT ASSOCIATION

Development Policy Staff Working Paper No. 141

INTERNAL AND EXTERNAL ASPECTS OF DEVELOPMENT PLANS AND PERFORMANCE, 1960-1970

By

Hollis B. Chenery and Nicholas G. Carter

February 1973

INTERNAL AND EXTERNAL ASPECTS OF DEVELOPMENT PLANS AND PERFORMANCE, 1960-1970

Hollis B. Chenery and Nicholas G. Carter

The analytical and philosophical basis for the aid and development programs of the past decade was formulated in the early 1960s.[2/] In outline form it asserts that:

a. external resources can be used by underdeveloped countries as a basis for a significant acceleration of investment and growth;

b. the maintenance of higher growth rates requires substantial changes in the structure of production and trade;

c. external capital can perform a critical role in both resource mobilization and structural transformation;

d. the need for concessionary aid declines once these structural changes are well under way although further capital inflow may be needed.

This rather optimistic diagnosis of the possibilities for achieving self-sustaining growth and the potential value of well-timed capital transfers has had widespread effects on the plans of both aid donors and developing countries.

More recently there has been a variety of criticisms of both the performance of countries receiving aid and the basic ideas on which aid programs have been conceived. It is asserted that aid is largely offset by increased consumption, that aid donors interfere with national priorities, and that aid permits countries to defer difficult policy changes that otherwise would have been taken.[3/]

Note: Paper prepared for the AEA Annual Meetings, Toronto, December 27-30, 1972.

The policies of the aid donors have been mixed. While aid as a share of GNP has declined continuously in the United States since 1963, this decline has been somewhat offset by increases in the European contributions. Official Development Assistance (ODA) from the DAC countries as a group now approximates .35% of their GNP, and total public and private flows amount to $18 billion or 0.8% of their GNP, considerably short of the UN targets of 0.7% and 1.0% respectively. It should be stressed, however, that only about 50% of these flows can be affected, in either direction, by official aid policies. In contrast, the balance, largely private flows, is much more sensitive to perceptions of recipient performance.

Against this background of qualified support for aid, it is somewhat surprising to find that the overall performance of the developing countries for the decade just ended has generally lived up to the expectations of the early sixties. For the decade as a whole, the net amounts of external capital supplied were not far short of the more conservative estimates of the amounts needed for accelerated growth, and market access for LDC exports has improved. Growth rates have accelerated in most countries, and over the decade a number of aid recipients have gone through the anticipated sequence of increased investment rates, structural transformation, and declining aid requirements. On the other hand, a number of countries have also confirmed the suspicions of the aid skeptics and show little benefit from the assistance received.

In this paper we present a summary evaluation of the interrelations between internal and external policies in the development experience of the past decade, focusing on the needs of policy makers in both developing and developed countries. The problem is complicated by the lack of any tested empirical methodology for determining the sources of growth in developing

countries. The factor productivity approach developed by Denison and others[4/] to study the performance of the advanced countries focuses entirely on internal factors and does not accommodate directly trade bottlenecks and other disequilibrium conditions common to developing countries. At the other extreme, approaches that center on a comparison of trade performance tend to exaggerate the importance of aid and exports.

Early attempts to treat internal and external factors in a single quantitative framework were derived from the methodology of development planning. The statistical series available in the early 1960s permitted only very crude estimates of the structural relations on which they were based. Ten years later, it is possible to draw on a vastly increased, but still short of ideal, supply of statistics to reformulate the basic relations among import requirements, exports and capital inflow on the one hand, and savings, investment and growth on the other. This reformulation helps in the interpretation of recent experience.

I. THE ANALYTICAL FRAMEWORK

From Plans to Behavioral Models. An assessment of development performance requires the use of a model which specifies the relationships between policy instruments and economic results.

The early formulations of two-gap models of aid and development were designed to modify the typical country plan results by specifying limits to the feasible range of structural change based on analyses of past behavior. The disequilibrium system described by these models results from the assumption of separate limits to the feasible values of the principal policy instruments - taxes and savings rates, investment rates, export growth and capital inflow.

Subsequent modifications in the framework for the analysis of aid and development have been of two sorts. The first has been in the direction of designing more satisfactory planning models by specifying more explicit objective functions and determining the optimal capital inflow over time with given constraints on the system. The second has consisted of reformulating the behavioral relationships and policy limits in the models on the basis of the increased statistical information now available.

The present paper pursues the second approach. We will first outline the principal modifications in the analysis of the aid-development relationship that are justified by the econometric studies of recent years. Since there are serious difficulties in estimating these relations under disequilibrium conditions, we will use the general results available as a basis for a less formal evaluation of the development experience of the past decade.

Aid-development relations were initially formalized in the two-gap models of Chenery and Bruno (1962), McKinnon (1964) and Chenery and Strout (1966).

These models are stated in terms of the limits to the extent of governmental influence on the variables that determine the capital inflow required for a given growth of GNP: investment, domestic savings, required imports and exports.

The Chenery-Strout version of this model is summarized in Table 1. It was designed to determine the capital inflow needed to sustain a specified rate of growth of GNP. Since the model describes growth as being either investment limited, savings limited or import limited, it is necessary to identify the principal constraint and to specify an adjustment mechanism in order to estimate the relations statistically.

Subsequent studies permit us to introduce several behavioral elements into these relations, thus incorporating statistical results common to a number of countries and presenting the policy choices in less aggregated form. It allows for:

a. possible limits to the government's ability to channel external assistance into productive uses;

b. the effects of differences in growth rates on both savings and capital requirements per unit of output;

c. the interdependence among the four basic functions in the aid-development relation.

The savings function of developing countries has received considerable attention in recent econometric studies.[5/] The level of exports, the inflow of external capital, and (to a lesser extent) the rate of growth of GNP have all been shown to have a significant effect on the level of savings in both time series and cross-section analyses.

The most important of these findings is the negative association between the level of savings (S) and the resource inflow (F). As Papanek has pointed out (1972), this result stems largely from the conventional definition of savings as investment minus the import surplus. It does not necessarily imply a change in the marginal propensity to save, defined as the partial derivative of savings with respect to income. However, it does imply that - contrary to the national accounting assumption - an increment in external resources is typically divided between investment and consumption.

These results suggest the following extension of the savings function. First, we assume that

$$(1) \quad C = c_0 + c_1 Y + c_2 F$$

where c_1 is the marginal propensity to consume out of GNP and c_2 is the (policy determined) fraction of the resource inflow going to consumption.

Second, we allow for the well-established effect of the share of exports in GNP on savings. Combining the (positive) effects of increased exports and the (negative) effects of increased capital inflow gives the following equation for potential savings ($\bar{S}$):

$$(2) \quad \bar{S} = s_0 + \bar{s}_1 Y + \bar{s}_2 F + s_3 E$$

This relationship is assumed to hold ex ante[6/] - i.e., unless other constraints intervene. Observed savings (S) will be lower when the trade gap is binding and potential savings cannot be realized.

There are two important modifications to be made in the investment function to reflect its interdependence with other elements of the model. It has been widely observed that more rapid growth leads to lower capital requirements per unit of output through economies of scale, fuller utilization of capacity, and the smaller proportion of gross investment required for

replacement and social overhead facilities.[7] Secondly, capital requirements are raised when import substitution is pushed too far, distorting the allocation of capital throughout the economy. These two elements are reflected in the following function for the investment required to sustain a given increase in GNP:

$$(3) \quad I = b_1 Y + b_3 \Delta Y$$

where: b_3 is the marginal capital-output ratio applicable to increases in GNP and b_1 is the share of GNP required for replacement and social overhead investment. In a disaggregated analysis, it is useful to add a third term to reflect the additional capital cost incurred by excessive import substitution, which can be diagnosed in country studies.

The import requirements function can be made more accurate by specifying the import content of each of the major components of GNP. For our purposes it is most important to distinguish imports of capital goods from those required to maintain the existing level of output. This leads to the following import requirements function:

$$(4) \quad M = m_1 Y + m_3 I$$

A somewhat better formulation can be had by separating imports into current and capital, thus avoiding multicollinearity between Y and I, but as yet there are no reliable breakdowns of imports available.

Exports have been treated as exogenous in most planning models, on the grounds that income and price elasticities of demand for most primary products are low and hence the growth of export earnings is largely determined by external factors. However, the development of non-primary exports in a given country depends largely on government investment and trade policies. The latter can be more usefully considered as separate policy instruments

in analyzing development performance. This breakdown leads to the following formulation of the export function:

$$(5) \quad E_t = E_{po}(1 + \epsilon_p)^t + E_{mo}(1 + \epsilon_m)^t$$

where E_p is primary exports, E_m is non-primary exports and the growth rate of the latter (ϵ_m) is taken as a policy variable.

From Target to Availability. In the previous section we discussed the modifications that have been made to the structural equations of the Chenery-Strout model. These are not new, but rather represent a consensus of work done since that paper and include most of the modifications that have been seriously put forward. Other changes certainly will be in order but these will have to await the availability of a sufficiently broad and reliable body of additional data.

There is, however, one major modification that must be made to the system before it is suitable for our analysis. This change arises not only from the fact that the original formulation is not really appropriate for recapitulations of the past, but also because in recent years there have been significant changes in the aid-donor-recipient relationship which are imperfectly represented by the original model. Briefly, the model must be changed from a target to an availability analysis.

When the earlier exercise was put together the theme of aid was targets. Countries were to assess their "best effort" and put the summary parameters into the model to obtain "aid requirements." If countries would do "their part" (effort), aid donors would do theirs (foreign aid) and targets could be achieved. This philosophy was even embodied in early UNCTAD exercises where past parameters were used with target growth rates to obtain aid requirements (thereby implying no effort beyond that of the

past on the part of recipients). The decade appeared to show that, on the average, neither side was perceived by the other as doing its "part." Recipients were seen to be squandering foreign resources while not improving their internal performance while donors were seen to be falling short of their targets, tying their aid, and otherwise raising the cost of their aid. On top of this came arguments[8/] to the effect that aid was harmful to the recipient. In the current state of affairs the prudent recipient plans in terms of "what can we do with the likely level of aid, "while the donors talk of what flows they can sustain subject to their balance of payments constraint on one hand and their aid "conscience" on the other.

Such a state of affairs calls for an "availability" approach to development modeling. Here, instead of growth targets and aid requirements, we have aid flows given and growth rates are the results. Moreover, if we are looking over a past period we want to ask first what happened with the aid flows the country received , then what might have happened if they had been more efficiently used and finally what would have happened if the flows had been higher. This cannot be done efficiently with a target model.

The methodology of target analysis was worked out in the Chenery-Strout paper. Availability is alluded to, but not worked through, and in fact, is somewhat more complex. Since foreign capital inflows are given, we start with this variable plus the equation for projection of exports (5). This determines imports. Income is then determined from the combination of the structural import equation (4) and the structural investment equation (3). The latter, however, needs to be modified, and as yet has not proven to be completely satisfactory. In the target model formulation investment is a function of the next change in income, a figure that is known because

we know the entire series of income a priori. This is not the case in the availability model and thus the formulation must be shifted back to the last change in income where it takes on an accelerator implication. Specifically:

$$(3a) \quad I = b_1'Y_t + b_3'Y_{t-1}$$

Then income is determined as follows:

$$(6) \quad Y_t = (M_t - m_1 - m_3 b_3' Y_{t-1})/(m_2 + m_3 b_1')$$

Specifically, it is the income that can be sustained given the demand for imports generated by income and investment and the supply of foreign exchange from exports and foreign capital inflow.

The saving side is nowhere near as easily dealt with. In particular, we cannot take the savings and investment equations and directly compute the determined income. The resulting figure is the income at which the savings plus foreign inflows are just equal to the investment requirements; this, however, is not a constraint.

The problem arises because in the Chenery-Strout model the investment equation does not represent a constraint, but rather a demand for investment so as either to avoid a future constraint, and/or to maintain the same degree of excess capacity in the system as in the initial year. The real constraint is capital stock and in order to make this effective in an availability sense one needs to know the initial stock, the initial capacity utilization, and the rate of depreciation - all of which are notoriously difficult concepts to deal with, particularly in the context of LDCs.

Our approach has been to put together what is possible with the data at hand and to present the results, but not to rely on them too heavily at this point for analytical purposes. For a large number of our countries we were able to go back to 1950 and derive a series for investment. We

assumed that output in the first year was one-third the value of capital stock and consequently built up a stock series as follows:

$$(7) \quad K_t = K_{t-1}(1 - d) + I_{t-1}$$

where d is the rate of depreciation (assumed). Rather than attempt to work out a rate of depreciation for each country, we tried various rates and found that at 5% per annum the consequent growth of capital stock looked reasonable.

The next step is to derive the gross output to capital ratio and to estimate initial capacity. Thus, we regressed output on capital stock for each of the countries. We also made estimates of initial capacity - this was done by adjusting the constant term of the regression upwards so as to have a line parallel to the estimated one going through the point of highest output to capital ratio.

Once we have this, we can use the estimated equation to calculate capacity limited output at any time period. This is then compared with the trade limited figure and the smaller one becomes the level of determined output for that year. In the case of the trade income being smaller, the economy has excess capacity. If the capacity income is smaller, then the ratio of imports to income rises - exactly in the manner of the ex post savings dominant adjustment of the Chenery-Strout model.

We move now to the savings-investment equations. In the target model these can be interpreted as constraints without regard to the time period: in the availability model their importance is only intertemporal. What happens in year t will affect the level of capacity output in years t + 1 onward. Accordingly, the investment equation becomes the demand for gross additions to capital stock and is governed by whatever investment

behavior pertains in the particular economy. We have used a simple accelerator, but clearly this may not be adequate or entirely appropriate - most other formulations, however, await more complete data. The savings equation is more easily interpreted as the supply of funds for investment, since $I = S + F$, then

$$(8) \quad I^S = s_0 + s_1 Y + (1 + s_2)F + s_3 E$$

If the difference between the supply and demand for investment is greater than the trade determined capital inflow, then investment must fall short of the desired level. If on the other hand the difference is less, then savings falls below the potential level.

II. DEVELOPMENT PERFORMANCE IN THE SIXTIES

We now use this analytical framework to examine the performance of some developing countries in the past decade, focusing on the relations between the internal and external constraints to growth. We utilize for this purpose two sets of estimates: the projections of feasible growth and aid requirements compiled by Chenery and Strout for a sample of fifty countries for the period 1962-1975, and estimates of the actual values of the parameters in this model for the period 1960-1970, covering thirty-seven of the principal countries in this sample. Comparing the projections to the actual results provides a basis for interpreting differences in performance among countries as well as a test of the general methodology of disequilibrium analysis.

While we cannot estimate the relations in the aid-development model with any accuracy because of the periodic existence of disequilibrium in most countries, there are several aspects of the Chenery-Strout analysis that can be evaluated:

(1) the extent to which growth has been accelerated, and the relative importance of internal and external factors in this result;

(2) the extent to which each economy has been able to absorb external resources for productive uses;

(3) the extent to which the inability to adjust the trade and savings limits has produced disequilibrium conditions;

(4) the extent to which the allocation of external capital has departed from the amounts needed to sustain minimum rates of growth and the differences in the distribution of benefits that have resulted.

Overall Comparisons

The Projections. The Chenery-Strout Projections were made to determine the needs of developing countries for external capital under various assumptions as to external trade and aid policies and internal resource mobilization. They were based on four analytical elements:

(a) past performance of each country, particularly in the preceding five-year period (1957-1962);

(b) development programs of all countries for which they were available;

(c) intercountry econometric studies of the principal parameters of the system (capital-output ratios, import ratios, savings parameters; and

(d) independent estimates of export prospects for the principal commodities, which were used to modify individual country forecasts.

Since the primary objective was to determine aid requirements as a function of growth and domestic performance, alternative assumptions were made for each set of policy variables, reflecting a subjective judgment as to the likelihood of their achievement. We will use the central set of "plan" targets and "plan" performance as a basis for the present evaluation, since they were then considered to be the most probable outcome.2/

In the present analysis, we omit three of the larger countries in which there were political disturbances that significantly disrupted development and ten of the fourteen countries with populations below five

million.[10] Concentration on the sample of thirty-seven countries permits a more valid comparison of performance to plans, and does not significantly affect the conclusions reached.

GNP Growth Rates. Almost all countries that had not already achieved growth rates of more than 5% in the fifties planned for accelerated growth in the sixties. Even after the downward revisions by Chenery and Strout to make the plan targets more realistic, a significant acceleration in the rate of growth was projected for 40 of the 50 countries; in 35 of these cases some acceleration was achieved. The (un-weighted) average for the 37 countries in our sample was raised from historical rates of (4.4%) in 1957-62 to (5.25%) in 1960-70, about the same as the Chenery-Strout plan projections.

In 25 of the cases, actual growth was within ± 1.2% of the plan rate, and they are classified as "planned". The other twelve countries are fairly evenly divided, with five growing significantly faster than projected and seven significantly slower.

We focus our attention first on the means by which high rates of growth have been achieved or maintained. This group includes the principal developing countries outside of Europe whose past growth has equalled or exceeded the 6% rate that has been taken as the objective for all countries in the present decade. We will also be concerned with the six countries -- India, Ghana, Tunisia, Colombia, Ceylon and Chile -- in which growth has fallen significantly below realistic objectives for reasons that are not primarily political.[11]

External Aspects. The projections of GNP growth and required capital inflow started from an analysis of export growth that was then taken as exogenously given for each country. The export forecast, which was made on a commodity basis for developing countries as a whole, accurately predicted the slow increase in primary non-fuel exports of about 3%. The main difference is in the growth of manufactured exports and services, which have grown at 15% compared to the anticipated rate of 6%. Total exports for the sample group have therefore grown at 5.9% compared to the projected rate of 5.1%.

The more rapid growth of exports has been offset by a slower growth of external capital. Annual requirements for the 37 countries were predicted to double with a total net capital inflow between 1962 and 1970 of $69 billion. The actual inflow was about 40% less. Although the total flow of imports was approximately what was estimated to be necessary to support realistic plans of these developing countries, the aid component was financed on considerably harder terms than was anticipated, thus biasing the distribution in favor of countries able to borrow on such terms. India has been most seriously affected by this policy; it has received only 55% of the volume of assistance that was estimated to be necessary to sustain a growth rate of 5.3%.

Since the overall supply of foreign exchange, which constitutes the principal exogenous element in these projections, has been roughly as predicted, our analysis can concentrate on the factors affecting its distribution among countries. The higher growth of mineral and non-primary exports has been of considerable benefit to six of the countries

in our sample, shortfalls in primary exports have hampered another six. The distribution of external capital is a more complex phenomenon that is examined in detail in Section III. In general, successful development has generally led to increased supplies -- usually on harder terms -- whereas unsuccessful development has usually led to a reduction in the aid supplied. Therefore, although the total supply of public funds for external assistance can be taken as given, its distribution depends both on donor policy (both official and autonomous) and the performance of the recipients.

Internal Aspects. The savings and investment performance of the sample group was somewhat more favorable than the values projected. The mean value of the incremental capital-output ratio (ICOR) was about 3.3 in both cases, but the effect of accelerated growth in lowering this value in the fast growing countries was underestimated.

Interpretation of the savings results is complicated by the existence of disequilibrium in the ex ante trade and savings gaps. The Chenery-Strout projections assumed a median value of the potential marginal propensity to save of .24, but the projections resulted in a median realized propensity to save of .15. The median actual propensity to save was .21, which is consistent with the somewhat less restrictive supply of foreign exchange noted above.

When we consider total savings and investment for the 37 country sample, we find both appreciably above the predicted totals. In the fast growing group the higher than predicted growth rates have led to substantially larger amounts of savings and investment, even though marginal savings were not generally higher than predicted.

In the Group of countries of retarded growth, on the other hand, there has been less of a shortfall in savings and investment than in growth of GNP. As shown below, poor savings performance does not seem to have been a major factor in the failure to meet plan objectives.

We have also computed an approximate rate of growth in the capital stock of each country assuming a depreciation rate of 5% and an initial stock-flow relation to 1950. Although the median growth of the capital stock (3.5%) is sensitive to these assumptions, there are a number of countries (Iran, Korea, Taiwan, Tanzania, Malaysia, Pakistan, Kenya) in which the rate of GNP growth is substantially higher than the rate of capital growth. These cases suggest that fuller use is being made of the existing stock of capital to secure an acceleration of growth over a limited period. It is notable that where growth has been rapid for a longer period -- as in Israel, Taiwan, Mexico, Greece, and Thailand -- the capital stock has grown at about the same rate as the GNP.

The Constraints to Growth

The Chenery-Strout projections are derived from a simplified linear model which exaggerates the likelihood of disequilibrium between internal and external constraints to growth, since normally one or the other constitutes the dominant limit. Although we and others have tested various methods of determining the relative importance of these constraints in actual cases, we have found none that is entirely satisfactory. Despite these difficulties, we cannot fall back on the methodology of general equilibrium analysis, which assumes that capital and labor are fully utilized and gives no role to external factors. We will, therefore,

utilize the evidence of several sets of econometric tests in addition to the plan comparisons to form an intuitive judgment of the importance of the several factors involved.

In the cases where a "pure" savings or trade constraint can be identified, the analysis can be based entirely on the corresponding sub-model and is relatively straight-forward. In the savings-limited case -- a surplus labor economy with adequate foreign exchange supplies -- variations in the rate of growth are explainable by changes in savings rates, capital inflow, the productivity of additional investment and the efficiency of the use of existing capital. In the pure trade constrained case, growth is determined by the availability of foreign exchange, from exports or capital inflow. The latter case does not usually persist over long periods without corrective measures being taken, however, so our main difficulty lies in interpreting the experience of countries that are partially trade constrained.

In this brief survey, we will try to indicate the relative importance of these factors in the countries having large deviations from the original projections: the five cases of accelerated growth -- Taiwan, Korea, Iran, Thailand, Kenya -- and six cases of retarded growth -- India, Colombia, Ghana, Tunisia, Ceylon and Chile.

Cases of Accelerated Growth. When there are multiple constraints on growth and limited opportunities for medium-term substitution, an accurate assessment of the sources of improved performance can in principle be determined only from a solution to the planning model with alternative sets of assumptions. However, when the deviations from the plan assumptions

are concentrated in two or three parameters, we can give an approximate evaluation of their importance by less formal methods. We would assess their relative importance in the five cases of accelerated growth as follows:

	External		Internal	
	Exports	Capital Inflow	Savings	Excess Capacity
Taiwan	50%	--	50%	--
Thailand	50%	50%	--	--
Korea	40%	20%	20%	20%
Iran	20%	--	40%	40%
Kenya	--	40%	--	60%

The most significant difference is between Taiwan and Thailand on the one hand -- where rapid growth was established in the 1950 -- and the other three, where there was substantial acceleration in the 1960s. Taiwan had a very large increase in both export growth and savings, permitting both an acceleration of growth and a reduction in capital inflow, whereas Thailand required large additions of external capital. In Korea the substantial increase in external capital made possible a fuller mobilization of the economy's resources. The existence of excess capacity is indicated by the substantial fall in the capital-output ratio from its previous levels.

In Korea and Thailand it is impossible to separate the effects of the added growth of exports from the additional external resources, since both were substantial. In Kenya, the problem is simplified since neither savings nor exports were higher than projected; capital inflow and better internal management were the principal sources of improvements over the plan.[12/]

Cases of Retarded Growth. Analysis of the causes of the serious shortfalls from planned performance is complicated by the extensive interaction between external and internal performance. The two-gap model predicts that when there is a shortage of foreign exchange relative to minimum import requirements, there will be a fall in the savings rate and -- unless increased external capital is forthcoming -- a reduction in growth and underutilization of capacity. These symptoms were present to a greater or lesser degree in Ceylon, Ghana, India and Colombia.

Internal factors provide the primary explanation of slow growth in Tunisia and Chile. In Tunisia, both exports and aid were above plan levels. Tunisia has deliberately allocated a large share of investment to less immediately productive uses over much of the decade, which caused a slowdown in growth even though the plan level of investment was maintained. Chile also showed little evidence of a trade limit, due to favorable copper prices during most of the period. The capital-output ratio rose as a result of excessive import substitution, while the savings rate fell below the plan level as a result of failure to control inflation.

In Ceylon and Ghana, the retardation of growth can be largely attributed to market conditions for their major primary exports -- tea and cocoa, respectively -- which account for over 50% of total exports in each country. In Ghana, the problem was compounded by misallocation of investment and the consequent reduction of the inflow of external capital. Failure to anticipate and adjust to the slow growth of their principal export commodity must be considered the primary cause of retardation in both countries.

In India and, to a lesser extent, Colombia, the reduction in external assistance played a major role in retarding growth. In both cases the resulting shortage of imports was more serious than the shortage of finance for investment. The foreign trade bottleneck was made worse in both countries by trade policies that discriminate against exports of manufactured goods, which their degree of industrial development would otherwise have supported.

In retrospect, the plan growth rates for these six countries (which are a close reflection of their own plans) seem entirely reasonable. Among the several elements causing the shortfalls, a reduction in the expected capital inflow was a major element in India and to a lesser extent in Colombia, Chile and Ghana. Internally, failures of resource mobilization played a smaller role than failures of allocation, with too much reliance put on import substitution and little attention to export promotion or diversification.

III. DISTRIBUTION AND EFFICIENCY IN AID POLICY

The allocation of external resources is the result of the set of policies followed by the recipients as well as the allocation criteria of the donors. In the aid planning of the sixties, the donors were primarily concerned with (a) the efficiency of use of capital, (b) the risk of loss, and (c) intercountry equity. In recent years a fourth criterion, the effect on income distribution within countries, has been increasingly stressed, although it has not yet had much effect on the results.

The Chenery-Strout projections provide the only known "plan" for aid allocation among countries based on a consistent set of criteria. These implicitly assumed that external resources would not be provided to support unreasonably high growth rates -- above 7% -- except for Israel, which has separate sources of finance. They also revised the estimates in country plans to make the internal performance estimates comparable among countries. Comparing the actual growth projections and corresponding aid allocations to the projections therefore reveals something about the working of the mechanism through which external resources are allocated.

Recipient Policy

The choices facing recipients of external capital vary considerably according to their past success in development. Countries that are seen to be effective users of external resources are favored by both private suppliers and aid donors. The most successful countries

have therefore had the choice of (a) accelerating growth further on the basis of additional external capital; (b) reducing their capital inflow, as envisioned in the prototype of the two-gap sequence.

The high growth countries have responded differently to these alternatives: Greece, Korea, Iran, Mexico, Costa Rica, and Thailand have chosen to increase both GNP growth and capital inflow, while Taiwan, Turkey and Malaysia have reduced their external capital requirements from the plan levels through improved export performance.

The less successful countries have a more limited choice. In several cases they have tried to increase the inflow of capital to offset slow export growth with only limited success. Of the thirteen countries in that group only Indonesia, Tunisia, Sudan and Burma received amounts of external capital as great as -- or even close to -- the projected decade totals. While the reduction was usually justified by poor internal performance of the recipient, this was not always the case.

The Distribution of Benefits

The dozen or so agencies that provide the bulk of official assistance operate on different sets of criteria and with differing geographical and political preferences. Although there are some common elements - such as favoring countries that make effective use of aid - it is impossible to construct a general rationale for donor policy over the past decade. We can, however, derive some conclusions as to the distribution of benefits by comparing the overall results to those projected.

On the benefit side, the decade growth of GNP for the group was from $153 billion to $251 billion, which was less than 5% below the prediction. On the external cost side, the shortfall in capital inflow (from $66 projected to $40 billion actual) can be allocated in part (perhaps 30%) to the substitution of manufactured and service exports for aid in countries such as Brazil, Taiwan, and Turkey. A large part of the remainder is the result of a shift away from the less successful countries as measured by their growth performance.

The relation of growth and aid to the initial level of per capita income is shown below in which countries are grouped by income level. The principal distributional effect can be brough out more clearly by treating India separately. On this basis, the projected and actual distribution of growth and aid for the three groups is as follows:

	Population	Total GNP ($) 1960	Total GNP ($) 1970 (Proj.)	Total GNP ($) 1970 (Act.)	GNP Growth Proj.	GNP Growth Act.	Capital Inflow Proj.	Capital Inflow Act.
A. 16 countries over $190	321	74	135	129	6.1%	5.7%	30	13
B. 20 countries under $190 p.c.	606	43	69	72	4.8%	5.3%	24	20
C. India	538	35	59	50	5.3%	3.5%	12	6
	1,465	153	263	251	5.6%	5.1%	66	40

The shift in distribution is striking. The first group fell short of its target growth by 7% while the capital inflow was only 43% of that planned. Almost the entire shortfall can be identified as coming in four large Latin American countries - Argentina, Brazil, Chile and

Colombia - where a substantial increase in manufacturing and service exports over the anticipated was experienced. The second group received 80% of the expected inflows and exhibited growth rates 10% above the planned. Clearly, as would be expected, the efficiency of transformation of capital inflows into growth in this group was somewhat lower. India, in contrast, received only 55% of the estimated need, and this shortfall was probably the main single factor in her inability to grow more rapidly. In this case there is a clear failure of the system of international distribution of assistance, which is heavily biased toward smaller countries.

Aid and India

We have pointed out that aid to India during the analysis period 1962-70 was only 55% of that needed to sustain the projected plan rate of GNP growth of 5.3% per annum. Specifically the shortfall was on the order of $5 billion. In addition, exports fell slightly short (about 500 million) of the projected, principally in the disastrous year of 1965. We want to use the model framework developed above to predict what might have happened had India received the aid that was planned and the exports that were anticipated. In simplistic terms the answer is of course the projected GDP growth rate of 5.3%. However, this is using the projected parameters of the model. In actual fact the import rate was more favorable than anticipated, particularly after the 1967 devaluation and the subsequent strict import controls. Savings were not as high as predicted but this reflects the ex post fall that accompanies a trade gap dominance. Moreover, it is fairly clear to us that had all the expected aid been forthcoming, India would probably have run into a capacity constraint.

The model is, of course, very imperfect, and in addition the results are sensitive to the parameters, particularly in the capital constraint side. However, we ran simulation experiments on India using our extended model. Without aid or trade (i.e., the actual rather than the expected) the economy grew by 3.5% per annum. The addition of the lost exports adds only about 0.5% per annum, but the further addition of the lost aid brings the growth rate up to 6.8% per annum. In this simulation the economy is capacity constrained in the years 1963, 1968 and 1970; the other years being trade constrained. Experiments are underway in making similar ex post analyses of the rest of our country sample, but none are as spectacular as the Indian example. These results and a tightening up of the analytical model will be the subject of a further paper.

Efficiency of the Aid Process

The negative association between capital inflow and savings has led some authors such as Griffin and Enos (1970) to question the efficiency of the aid process. The proper test of the effectiveness of aid, however, is its effect on growth or other social objectives rather than on savings as conventionally measured.[13/] The two-gap model in its optimizing version[14/] demonstrates that with a trade constraint it is optimal policy to increase the capital inflow even though the effect will be to raise consumption as well as investment, and the productivity of external capital in this case is very high.

We have conducted several tests to try to determine whether most of the negative effect of capital inflow on savings can be explained as purely a two-gap phenomenon, as suggested by Landau (1971). There are

only a few countries[15/] in which a trade constraint can be ruled out; here the negative coefficients can be taken as indications of inefficiency in transforming the capital inflow into increased investment. In cases where there is a constraint other than savings, or where the constraints are mixed over the time period, the negative association can be expected as a result of ex post savings falling below ex ante as the system is constrained elsewhere. The association between aid and savings in these cases (the vast majority) is not direct and, in fact, were we to reduce F, savings would rise, but output, investment and consumption would fall. Also, even in pure savings constrained systems, a significant proportion of F comes in as consumption goods (e.g., food aid) and is not expected to increase investment, thus the effect on savings is negative to begin with. In general, however, the countries that have raised their savings rates as a result of the aid-supported growth process greatly outweigh the cases in which an unnecessary diversion to consumption can be demonstrated.

Footnotes

1/ Development Policy Staff, IBRD. We would like to acknowledge the help of Mr. Agarwal. Statistical assistance was provided by F.F. Jen and R. Bhakta, editorial assistance by H. Elkington and to all we are indebted.

2/ Representative academic contributions to this formulation include Milliken and Rostow (1957, Rodan (1961), Chenery and Bruno (1962), Little and Clifford (1966), United Nations (1964). A useful summary is given by Hagen (1968).

3/ A representative set of criticisms are Johnson (1967), Rahman (1968), Hirschman (1961), Griffin and Enos (1970), and Weisskopf (1972). Griffin and Enos assert that "If anything, aid may have retarded development by leading to lower domestic savings, by distorting the composition of investment and thereby raising the capital-output ratio, by frustrating the emergence of an indigenuous entrepreneurial class, and by inhibiting institutional reforms" (p. 326).

4/ E.g., Abramovitz (1956), Aukrust (1959), Denison (1967), Maddison (1972).

5/ See Landau (1971), Chenery, Elkington and Sims (1970), Griffin and Enos (1970), Singh (1972), Chenery and Eckstein (1970), Weisskopf (1972), and Papanek (1972).

6/ Potential savings and required imports are indicated by barred values.

7/ Leibenstein (1966), Vanek (1968), Chenery and Eckstein (1970).

8/ See Griffin and Enos (1970) for example.

9/ These estimates were adjusted from the original plans of the countries according to the authors' judgment to make them more "realistic" - i.e., with a probability of achievement of .5. Other projections based on historical performance and an "upper limit" estimate - defined by a probability of .2 - were also made, giving a total of 18 projections for each country.

10/ The larger omissions are Algeria, South Vietnam and Rhodesia. The only other major omissions from the Chenery-Strout sample were Afghanistan, Nepal, Yugoslavia and Zaire. Eleven countries of population between 5 and 10 million were also omitted, for lack of data. Eastern European countries, N. Korea, N. Vietnam and Cuba were omitted as non-recipients of Western assistance. The small countries retained in the sample were Israel, Jordan, Jamaica and Costa Rica.

11/ Without undertaking a detailed analysis, we have assumed that the shortfall in growth in Nigeria, Sudan, Burma and Egypt - as well as in a number of the countries omitted from the sample - is largely political in origin.

12/ In countries where the economy had previously been growing slowly, the ICOR based on this experience overstates the capital requirement. A fall in the ICOR reflects both use of excess capacity and other aspects of internal management.

13/ Papanek has demonstrated that much of the apparent association is explainable on purely statistical grounds.

14/ E.g., Chenery and MacEwan (1966).

15/ Thailand, Venezuela, Jordan.

References

Abramovitz, M., "Resource and Output Trends in the United States since 1870," American Economic Review, 46, May 1956, 5-23.

Aukrust, O., "Investment and Economic Growth," Productivity Measurement Review, February 1959.

Chenery, H.B. and M. Bruno, "Development Alternatives in an Open Economy: The Case of Israel," Economic Journal, 72, March 1962, 79-103.

Chenery, H.B. and P. Eckstein, "Development Alternatives for Latin America," Journal of Political Economy, 78, August 1970, 966-1006.

Chenery, H.B. and H. Elkington and C. Sims, "A Uniform Analysis of Development Patterns," Harvard University Center for International Affairs, Economic Development Report No. 148, 1970.

Chenery, H.B. and A. MacEwan, "Optimal Patterns of Growth and Aid: The Case of Pakistan," in Adelman and Thorbecke (eds.), The Theory and Design of Economic Development, Baltimore: Johns Hopkins Press, 1966.

Chenery, H.G. and A.M. Strout, "Foreign Assistance and Economic Development," The American Economic Review, 56, September 1966, 679-733.

Denison, E.F., "Why Growth Rates Differ: Postwar Experiences in Nine Western Countries," Washington: Brookings Institution, 1967.

Griffin, K.B. and J.L. Enos, "Foreign Assistance: Objectives and Consequences," Economic Development and Cultural Change, 18, April 1970, 313-327.

Hagen, E.E., The Economics of Development, Homewood, Illinois: R.D. Irwin, 1968.

Hirschman, A.O., Latin American Issues, New York: Twentieth Century Fund, 1961.

Johnson, H.G., Economic Policies Toward Less-Developed Countries, New York: Praeger, 1967.

Landau, L., "Saving Functions in Latin America," in Chenery ed., Studies in Development Planning, Cambridge: Harvard University Press, 1971.

Leibenstein, H., "Incremental Capital-Output Ratios and Growth Rates in the Short run," Review of Economics and Statistics, 48, February 1966, 20-27.

Little, I.M.D. and J.M. Clifford, International Aid, Chicago: Aldine, 1966.

Maddison, A., "Explaining Economic Growth," Banca Nazionale del Lavoro Quarterly Review, 102, September 1972.

McKinnon, R.I., "Foreign Exchange Constraints in Economic Development and Efficient Aid Allocation," Economic Journal, 74, June 1964, 388-409.

Millikan, M.F. and W.W. Rostow, A Proposal: Key to an Effective Foreign Policy, New York: Harper and Row, 1957.

Papanek, G.F., "The Effect of Aid and Other Resource Transfers on Saving and Growth in Less Developed Countries," Economic Journal, September 1972, 934-950.

Rahman, A., "Foreign Capital and Domestic Savings: A Test of Haavelmo's Hypothesis with Cross-Country Data," Review of Economics and Statistics, 50, February 1968, 137-138.

Rosenstein-Rodan, P.N., "International Aid for Underdeveloped Countries," Review of Economics and Statistics, 43, May 1961, 107-138.

Singh, S.K., "The Determinants of Aggregate Savings," International Bank for Reconstruction and Development, Working Paper No. 127, 1972.

United Nations, Department of (?), Studies in Long-Term Economic Projections for the World Economy, New York, 1964.

Vanek, J. and A.H. Studenmund, "Towards a Better Understanding of the Incremental Capital-Output Ratio," Quarterly Journal of Economics, 82, August 1968.

Weisskopf, T.E., "An Econometric Test of Alternative Constraints on the Growth of Underdeveloped Countries," Review of Economics and Statistics, 54, February 1972, 67-78.

Weisskopf, T.E., "The Impact of Foreign Capital Inflow on Domestic Savings in Underdeveloped Countries," Journal of International Economics, February 1972, 25-38.

Notes to the Tables

A. Data Sources

The data used in the analysis comes from the IBRD World Data Bank, and is identical with that used for "A Uniform Analysis of Development Patterns" by Chenery and Syrquin (forthcoming). Data in the Bank are in current prices which are then converted into ratios to GDP. For the present study these ratios were transformed into constant 1964 US$ figures by use of the IBRD World Atlas series. The resulting accounts are distorted in the sense that changes in ratios include both structural changes as well as changes in price relatives. They are, however, consistent for countries and for years. Also not included are changes in the savings series due to gains or losses in terms of trade. Work on such data is underway at the IBRD but was not ready in time for the present study. The data used thus represent an intermediate improvement between the ideal system of separate deflators for each series and terms of trade adjustments, and the methodology of previous studies which have generally used national accounts in constant prices (often with a single GDP deflator) and balance of payments in current US$.

B. Regression Results

Presented in the tables (11-17) are the regression results of the structural equations discussed in the paper. Covered are each of the three structural equations (savings, imports, and investment) for both the period 1960-70 and the full sample period (at most 1950-1970). Results are presented on a uniform basis for all countries (except UAR-Egypt where the data will not support any analysis) and reported as such without rejection of unsuitable results or searching for better fits. Our purpose is thus informative rather than analytical, and we do not, at this stage of the research, put much analytical weight on the results. Moreover, we wished to keep strictly to a priori functional forms rather than best fits. For example the import equation behaves better if exports (or foreign capital)and income are used as the explanatory variables. This has in fact been used by some authors (e.g. Landau, 1971), but this mixes up supply and demand whereas we wished to estimate to demand only. The same can be said for the investment equation where many authors have included F or M as a right hand variable. To do so, however, is to estimate the savings equation instead (supply for investment) whereas we wished to adhere to demand. Regression results are reported with t-statistics next to the coefficients.

For all the relationships presented we tried both two-stage least squares and also instrumental variables. This is the recommended econometric procedure, but it presents problems when one is working with as few observations as we had, and our study was no exception. Moreover, it is an open question as to whether such methods are appropriate when one is estimating a partial model as we are in this paper, so that one does not have a complete idea of the simultaneity involved. Results were either barely different from the OLS results in the case of the really good fits, or they were more difficult to reconcile with the given theory than OLS for the poor fits. We present the OLS results in this paper but can supply the simultaneous equations estimates upon request.

Table 1

Comparison of Growth Models

	A. Chenery-Strout Model	B. Extended Model
I. Target Model		
1. Saving Limit	$S_t \leq \bar{S}_t = s_1 + s_2 Y_t$	$S_t \leq \bar{S}_t = s_1 + s_2 Y_t + s_3 F_t + s_4 \delta_t$
2. Trade Limit	$M_t \geq \bar{M}_t = m_1 + m_2 Y_t$	$M_t \geq \bar{M}_t = m_1 + m_2 Y_t + m_3 I_t$
3. Investment Requirements	$I_t = k_g Y$	$I_t = b_1 Y_t + b_2 (Y_{t+1} - Y_t)$
4. Export Earnings	$E_t = E_0 (1 + \epsilon)^t$	$E_t = E_{po}(1+\epsilon_p)^t + E_{mo}(1+\epsilon_m)^t$
5. Target Growth Rate	$Y_t = Y_0 (1 + \bar{g})^t$	$Y_t = Y_0 (1 + \bar{g})^t$
6. ICOR	$k = \frac{I_t - 1}{Y_t - Y_{t-1}}$	$k = \frac{I_{t-1}}{Y_t - Y_{t-1}}$
7. Identities	a. $Y_t = C_t + I_t + E_t - M_t$ b. $F_t = I_t - S_t = M_t - E_t$	$Y_t = C_t + I_t + E_t - M_t$ $F_t = I_t - S_t = M_t - E_t$

	A. Chenery-Strout Model	B. Extended Model
II. Availability Model		
1. Resource Gap	$\bar{F}_t = \bar{M}_t - \bar{E}_t$	$F_t = \bar{M}_t - \bar{E}_t$
2. Export Earnings	$\bar{E}_t = \bar{E}_0 (1 + \epsilon)^t$	$\bar{E}_t = E_{po}(1+\epsilon_p)^t + E_{mo}(1+\epsilon_m)^t$
3. Imports	$M_t = m_1 + m_2 Y_t$	$M_t = m_1 + m_2 Y_t + m_3 I_t$
4. Investment Demand	$I_t^D \leq \alpha_g Y$	$I_t^D \leq b_1' Y_t + b_2' Y_{t-1}$
5. Trade Limited Income (from 3)	$Y_T \leq (M_t - m_1)/m_2$	(from 3 and 4) $(M_t - m_1 - m_3 b_2' Y_{t-1})/(m_2 + m_3 b_1')$
6. Capacity	$K_t = \sum_{T=0}^{T=t-1} I_t$	$K_t = K_{t-1}(1-\delta) + I_{t-1}$
7. Capacity Limit Income	$Y_k \leq 1/k (K_t)$	$Y_k \leq a_1 + a_2 K_t$
8. Income	$Y_t = (Y_T, Y_k)$, which ever smaller	$Y_t = (Y_T, Y_k)$ which ever smaller
9. Investment Supply (Savings)	$I_t^S = s_1 + s_2 Y_t + \bar{F}_t$	$I_t^S = s_1 + s_2 Y_t + (1+s_3) F_t + s_4 \bar{S}_t$
10. Savings - Investment Adjustment	$I_t = (I_t^S, I_t^D)$, which ever smaller	$I_t = (I_t^S, I_t^D)$, which ever smaller

Definition of Symbols (subscript indicates year)

Y_t = gross domestic product

I_t = gross investment

S_t = gross domestic savings, $\bar{S}_t$ = potential gross domestic savings

M_t = imports of goods and non-factor services, $\bar{M}_t$ = required imports of goods and non-factor services

E_t = exports of goods and non-factor services

E_{pt} = exports of primary products

E_{mt} = exports of manufactures and non-factor services

F_t = net inflow of foreign capital (resource gap)

C_t = consumption

k = gross incremental capital to output ratio

ϵ = growth rate of exports

ϵ_p = growth rate of primary exports

ϵ_m = growth rate of non-primary exports

$\bar{g}$ = target growth rate

Table 2

Intercountry Estimates of Savings and Investment Functions

Savings Functions

a. $S = a + .183Y - .227F + .176E$

b. $\frac{S}{Y} = a + .047 \log \frac{Y}{P} - .534 \frac{F}{Y}$

c. $\frac{S}{Y} = a + .14 \ln \frac{Y}{p} - .004 (\ln \frac{Y}{p})^2 - .443 \frac{F}{Y} + .20 \frac{E}{Y}$

d. $S = a + .143Y - .721F + .364E$

Capital Requirements

e. $I_t = 2.06(V_{t+1} - V_t) + .07V_t$

Import Functions

f. $M = a - .0063Y + .458I$

Sources:

a. Sample of 17 savings limited countries (Weisskopf, 1972).
b. Sample of 18 Latin American countries (Landau, 1971).
c. Pooled sample of 300 observations on 70 countries (IBRD).
d. Pooled sample of 592 observations on 36 countries (IBRD, 1972).
e. Median values of coefficients in separate equations for 16 Latin American countries (Chenery and Eckstein, 1970).
f. Same as (d).

Table 3

Summary Values of Growth Parameters

Distribution of Parameters, 37 Country Sample

	Upper Quartile	Median	Mean	Lower Quartile
A. Chenery-Strout Estimates (1962-1970)				
ICOR	3.770	3.270	3.340	2.720
Rate of Growth of GDP (%)	6.000	5.300	5.290	4.750
Marginal Savings Rate (ex post)	.235	.200	.140	.150
Marginal Savings Rate (ex ante)	.235	.200	.196	.150
Marginal Import Rate (ex post)	.331	.200	.251	.260
Marginal Import Rate (ex ante)	.236	.190	.204	.164
Rate of Growth of Exports (%)	7.120	4.450	5.080	3.160
Rate of Growth of Imports (%)	6.470	4.770	5.270	3.720
Rate of Growth of Population (%)	3.000	2.700	2.600	2.300
Capital Inflow (excluding outflows)/1			6.44%	
B. Actual Values (1960-1970)				
Rate of Growth of Investment (%)	10.160	7.900	7.440	3.580
ICOR	3.800	3.000	3.250	2.450
Rate of Growth of GDP (%)	6.450	5.100	5.360	3.900
Marginal Savings Rate	.245	.212	.180	.100
Marginal Import Rate	.332	.228	.214	.078
Rate of Growth of Exports (%)	8.090	5.370	5.140	2.640
Rate of Growth of Population (%)	3.100	2.900	2.740	2.450
Rate of Growth of Imports (%)	8.910	6.030	5.820	3.100
Capital Inflow (excluding outflows)/1			5.89%	

/1 These rates imply, over the period 1962-70, that the cumulative shortfall in capital inflow was only 2.2%. In the text it stated that the shortfall was 40%. The difference is due to the difference between the "trend" base period figures for 1962 of the Chenery-Strout exercise and the actual figures for the years 1960-62. The "trend" was optimistic, good part of the decade drop in flows had already taken place by 1962, therefore the "projected" growth rate is an underestimate.

Table 4

Projected[1] vs. Actual: Growth of GNP

Country	Historical Rate (1957-62)	Plan 1/ Rate (1962-70)	Actual Rate (1960-70)	Actual - Historical	Actual - Plan
I. High Growth (Actual greater than 6%)					
A. Planned					
1. Israel	9.0	9.0	7.9	-1.1	-1.1
2. Greece	6.0	6.5	7.3	1.3	0.8
3. Mexico	5.0	6.0	7.2	2.2	1.2
4. Costa Rica	5.5	6.0	6.5	1.0	0.5
5. Jordan	5.6	5.6	6.4	0.8	0.8
6. Turkey	5.3	6.0	6.4	1.1	0.4
7. Malaysia	4.0	5.0	6.2	2.2	1.2
8. Tanzania	4.2	5.0	6.1	1.9	1.1
B. Accelerated (Actual - Plan ≥1.5%)					
9. Taiwan	6.0	7.0	10.0	4.0	3.0
10. Korea	4.3	5.0	9.4	5.1	4.4
11. Iran	4.4	5.5	8.3	3.9	2.8
12. Thailand	5.0	6.0	8.0	3.0	2.0
13. Kenya	1.7	3.5	6.7	5.0	3.2
II. Normal Growth (Actual 4.9 to 5.9)					
A. Planned					
14. Philippines	5.0	5.5	5.9	0.9	0.4
15. Venezuela	4.5	6.0	5.8	1.3	-0.2
16. El Salvador	5.0	6.0	5.4	1.4	-.6
17. Brazil	5.5	5.5	5.3	-0.2	-0.2
18. Ecuador	4.2	5.0	5.1	0.9	0.1
19. Guatemala	4.0	5.0	5.1	1.1	0.1
20. Jamaica	4.0	4.5	5.1	1.1	0.6
21. Pakistan	4.5	5.3	5.1	0.6	-0.2
22. Uganda	1.7	4.0	5.1	3.4	0.9
23. Ethiopia	4.5	4.5	5.0	0.5	0.5
24. Colombia	5.0	6.1	4.9	-0.1	-1.2
III. Low Growth (Less than 4.8%)					
A. Planned					
25. Peru	5.5	5.5	4.5	-1.0	-1.0
26. Argentina	3.1	4.3	4.0	0.9	-0.3
27. Ceylon	4.2	5.0	3.9	-0.3	-1.1
28. Morocco	2.8	4.0	3.9	1.1	-0.1
29. Chile	3.5	5.0	3.9	0.4	-1.1
30. Indonesia	1.0	3.0	3.0	2.0	0.0
B. Retarded (Plan - Actual ≥1.2%)					
31. Egypt	4.5	5.5	4.2	-0.3	-1.3
32. Sudan	5.1	5.5	3.9	-1.2	-1.6
33. India	4.3	5.3	3.5	-0.8	-1.8
34. Tunisia	4.1	5.0	3.5	-0.6	-1.5
35. Nigeria	4.0	4.5	3.0	-1.0	-1.5
36. Burma	3.2	4.0	2.7	-0.5	-1.3
37. Ghana	4.5	5.5	2.2	-2.3	-3.2
TOTAL SAMPLE		5.4	5.4		0.0

1/ Median Projections of Chenery-Strout

Table 5

Projections vs Results : External Aspects (1960-1970)

	BASE YEAR (1960)				ANNUAL RATES						CAPITAL INFLOW (1970) 1/		
	Primary Exports	Mfg. Exports and Services	Capital Inflow 1/	Imports	GDP	Primary Exports (Actual)	Mfg. Exports (Actual)	Total Exports (Forecast)	Total Exports (Actual)	Imports (Forecast)	Imports (Actual)	(Forecast)	(Actual)	Actual - Forecast
I. High Growth														
A. Planned:														
1. Israel	60	184	215	459	7.9	15.30	17.80	14.63	15.43	8.91	12.45	350	1,124	+774
2. Greece	279	43	510	832	7.1	3.64	22.79	7.12	9.56	6.72	6.85	363	908	+544
3. Mexico	1,239	210	160	1,608	7.2	3.60	12.22	7.03	4.68	5.76	5.47	-15	274	+288
4. Costa Rica	88	4	20	112	6.5	-4.29	26.73	4.63	9.69	5.15	11.35	.1	91	+38
5. Jordan	33	3	95	130	6.4	8.37	19.25	7.68	8.27	4.77	7.45	13	132	-1
6. Turkey	166	90	134	300	6.4	13.02	13.33	4.00	7.72	9.03	6.25	627	377	-300
7. Malaysia	878	60	-219	719	6.1	4.08	13.70	2.74	5.37	4.33	5.68	61	-132	-192
8. Tanzania	171	12	-13	170	6.1	3.38	4.14	4.74	5.62	4.64	6.37	47	72	+26
B. Accelerated:														
9. Taiwan	150	24	117	291	10.0	2.90	46.55	7.12	20.69	6.57	15.51	196	23	-173
10. Korea	73	13	239	325	9.4	11.21	53.29	7.56	27.10	6.37	17.80	379	611	+232
11. Iran	696	61	-161	575	8.3	10.78	6.32	7.12	10.68	8.08	13.30	111	-357	-773
12. Thailand	330	92	.0	459	8.0	9.13	0.42	6.06	7.91	5.01	9.88	-2	272	+275
13. Kenya	258 2/	49 2/	.38	269 2/	6.7	2.61	2.85	4.45	2.39	4.24	6.67	11	23	+13
TOTAL I	4,399	755	1,525	6,248								2,330	3,857	1,527
II. Normal Growth														
A. Planned:														
14. Philippines	410	20	-33	398	5.9	6.80	18.24	4.09	7.16	4.60	7.85	160	45	-115
15. Venezuela	1,611	0	-609	1,002	5.8	4.67	72.59	2.76	4.33	3.07	8.63	-727	-509	218
16. El Salvador	95	11	24	129	5.4	3.73	22.45	4.89	7.52	5.24	7.38	29	4	-24
17. Brazil	759	94	185	1,037	5.3	7.63	14.36	3.74	6.18	1.29	3.79	625	185	-440
18. Ecuador	139	3	-3	138	5.1	0.95	-1.41	4.45	1.97	4.13	4.75	66	85	19
19. Guatemala	114	8	18	141	5.1	7.01	27.95	4.45	10.35	4.70	9.19	95	9	-85
20. Jamaica	185	25	2	212	5.1	5.06	6.10	4.45	5.37	2.95	6.57	11	122	111
21. Pakistan	293	167	135	646	5.1	-3.55	13.59	4.59	8.72	5.69	5.16	578	389	-190
22. Uganda	130	10 2/	-12	118 2/	5.1	4.55	6.39	3.54	4.50	3.96	6.03	66	-89	-44
23. Ethiopia	93	3 2/	13	109 2/	5.0	5.70	-4.92	7.12	5.62	4.64	6.69	14	26	12
24. Colombia	508	7	0	515	4.9	1.81	28.76	3.56	3.80	5.54	3.92	573	102	-471
TOTAL II	4,336	338	427	4,444								2,174	867	-1,207
III. Low Growth														
A. Planned:														
25. Peru	418	171	-66	524	4.5	2.30	3.10	6.85	2.20	7.35	1.57	122	-161	-283
26. Argentina	1,371	144	172	1,687	4.0	1.05	10.13	3.74	2.64	5.20	.30	706	16	-690
27. Ceylon	389	5	39	433	3.9	-0.96	4.83	2.31	-.72	3.47	.74	96	46	-50
28. Morocco	402	111	-21	491	3.9	2.08	2.33	2.47	2.72	3.41	2.80	174	57	-117
29. Chile	354	39	84	477	3.9	6.73	-0.29	2.69	6.20	3.34	2.48	387	-24	-411
30. Indonesia	1,056	7	-61	1,052	3.0	-3.23	43.51	1.42	4.97	1.53	10.09	302	581	279
B. Retarded:														
31. Egypt	590 2/	57 2/	-5	642 2/	4.2	-2.90	12.60	1.73	.15	4.24	1.92	546	254	-292
32. Sudan	169 2/	0 2/	-7	163 2/	3.9	3.47	-4.62	8.01	2.64	6.83	3.39	23	-8	-31
33. India	1,031	800	1,081	2,912	3.5	0.12	3.89	2.67	1.97	5.43	-0.38	1,775	249	-1,525
34. Tunisia	93	47	43	182	3.5	6.25	3.00	4.45	5.48	2.59	3.39	116	58	-57
35. Nigeria	504	10	192	706	3.0	6.05	15.90	7.12	7.57	6.69	3.55	295	113	-180
36. Burma	223	10	12	245	2.7	-12.15	-3.00	10.23	-11.68	10.61	-7.63	-17	35	52
37. Ghana	251	18	55	324	2.2	-4.42	15.70	2.05	-1.33	3.47	-4.20	197	-18	-150
TOTAL III	684	1,419	1,678	2,786								4,736	1,408	-3,260
GRAND TOTAL	15,584	2,513	3,630	20,477								9,239	6,233	-2,940

1/ Negative values (outflows) are not included in adding groups I, II, III as well as in the total of all the countries.
2/ 1964.
3/ 1961.

NOTE: Totals may not add right because of rounding.

Table 6

Projections vs. Results : Internal Aspects

(Figures in $US million)

Country	Savings 1960	Savings 1970 (Projected)	Savings 1970 (Actual)	Capital Inflow 1960/1	Capital Inflow 1970 (Projected)/1	Capital Inflow 1970 (Actual)/1	Investment 1960	Investment 1970 (Projected)	Investment 1970 (Actual)	Marginal Savings Rate (Predicted)	Marginal Savings Rate (Actual)	ICOR (Predicted)	ICOR (Actual)	Growth of Capital Stock	Growth of GDP
I. High Growth:															
A. Planned:															
1. Israel	257	-41	271	215	350	1,124	471	1,134	882	.281	-.0049	3.00	3.0	7.50	7.9
2. Greece	433	925	1,115	510	363	908	912	1,288	1,906	.230	.2208	3.10	3.8	7.34	7.3
3. Mexico	2,077	3,431	4,704	160	-15	274	2,237	3,416	4,978	.170	.2238	2.52	2.5	5.14	7.2
4. Costa Rica	59	94	96	20	53	91	80	146	196	.200	.1457	3.27	3.3	6.38	6.5
5. Jordan	-48	-34	-28	95	133	132	47	99	162	.200	.0261	3.37	2.2	4.11	6.4
6. Turkey	775	1,065	1,654	134	627	327	909	1,691	1,981	.256	.2285	2.91	2.7	4.57	6.4
7. Malaysia	434	289	717	-219	61	-132	215	350	555	.200	.2165	2.50	2.1	3.85	6.2
8. Tanzania	102	83	160	-13	47	72	89	129	174	.150	.2156	2.93	2.4	1.70	6.1
B. Accelerated:															
9. Taiwan	197	373	975	117	196	23	314	569	997	.210	.3509	2.62	2.4	9.92	10.0
10. Korea	-2	148	997	239	379	611	281	526	1,608	.150	.2862	3.27	2.1	6.07	9.4
11. Iran	798	1,024	2,016	-161	111	-357	638	1,440	1,660	.150	.3034	3.70	1.9	3.09	8.3
12. Thailand	346	691	881	36	-2	272	382	688	1,153	.250	.2437	2.50	2.8	8.04	8.0
13. Kenya	157	121	202	-33	11	23	120	132	220	.150	.1468	4.00	2.5	1.70	6.7
TOTAL I	5,500	8,167	13,752	1,585	2,330	3,857	6,694	11,609	16,492						
II. Normal Growth:															
A. Planned:															
14. Philippines	580	666	1,067	-33	160	45	481	825	1,309	.260	.2019	2.58	3.2	5.47	5.9
15. Venezuela	1,452	2,110	2,751	-609	-127	-509	879	1,998	2,142	.290	.3081	3.64	3.3	3.39	5.8
16. El Salvador	56	97	79	24	29	4	80	126	90	.180	.0612	2.50	2.6	2.44	5.4
17. Brazil	2,411	2,815	3,440	185	625	185	2,596	3,440	3,811	.270	.1309	2.90	3.6	8.13	5.3
18. Ecuador	123	171	159	-3	66	85	120	237	212	.200	.0748	3.74	2.9	2.85	5.1
19. Guatemala	81	184	219	18	95	9	100	279	229	.200	.2460	3.50	2.4	2.02	5.1
20. Jamaica	186	154	186	2	11	122	155	165	234	.180	.2404	3.50	4.6	4.55	5.1
21. Pakistan	670	1,237	1,408	185	578	390	856	1,815	1,762	.240	.1351	3.00	2.7	1.30	5.1
22. Uganda	70	55	159	-12	44	-89	58	99	151	.150	.2238	4.00	2.3	3.31	5.1
23. Ethiopia	106	127	155	13	14	26	119	141	153	.170	.1336	2.50	2.6	0.06	5.0
24. Colombia	681	1,430	998	0	573	102	680	2,003	1,056	.260	.2107	4.80	4.0	3.26	4.9
TOTAL II	6,393	9,681	11,020	421	2,174	967	6,098	11,128	11,288						
III. Low Growth															
A. Planned:															
25. Peru	602	897	664	-66	122	-161	537	1,019	503	.285	.0003	4.94	3.4	4.26	4.5
26. Argentina	3,055	3,178	4,443	172	706	16	3,227	3,883	4,459	.220	.2701	5.30	6.3	3.45	4.0
27. Ceylon	146	253	354	39	96	45	185	348	405	.150	.2168	3.24	3.1	2.60	3.9
28. Morocco	235	259	328	-21	174	37	213	433	364	.150	.2118	4.00	2.7	0.76	3.5
29. Chile	410	481	770	84	387	-24	495	869	692	.160	.2963	3.40	4.2	3.40	3.9
30. Indonesia	689	571	898	-61	302	591	628	872	1,479	.100	.0233	2.75	2.3	-1.18	3.0
B. Retarded:															
31. Egypt	396	289	294	-5	546	254	379	835	551	.170	.0119	2.68	3.8	3.36	4.2
32. Sudan	126	238	151	-7	23	-8	119	261	186	.150	.0034	2.50	3.7	2.97	3.9
33. India	4,697	7,765	6,426	1,081	1,775	249	5,778	9,540	6,662	.210	.1016	3.20	4.5	3.18	3.5
34. Tunisia	45	103	160	43	115	58	88	218	218	.200	.3833	4.00	4.9	6.62	3.5
35. Nigeria	192	1,257	556	192	295	113	384	540	607	.110	.3758	3.80	4.1	4.10	3.0
36. Burma	130	324	184	12	-17	35	142	308	229	.180	[illegible]	4.00	3.6	2.62	2.7
37. Ghana	182	250	192	55	197	-18	237	447	174	.072	[illegible]	3.50	5.6	3.79	2.2
TOTAL III	10,904	15,865	15,428	1,678	4,735	1,408	12,410	19,573	16,519						
GRAND TOTAL	22,900	33,714	40,206	3,630	9,239	6,232	25,202	42,310	44,293						

NOTE: Totals may not add up because of rounding.

/1 Negative values (outflows) excluded from totals.

Table 7

Growth Performance: Selected Countries

Country	GNP Growth			Export Growth			Import Growth			Marginal Savings Ratio			ICOR			Total Capital Inflow		
	Plan	Actual	Difference	Plan	Actual	Difference	Plan	Actual	Difference	Plan	Actual	Difference	Plan	Actual	Difference	Plan	Actual	Ratio
Accelerated Growth Cases																		
1. Taiwan	7.0	10.0	3.0	7.12	20.68	13.56	6.57	15.51	8.94	.21	.351	.141	2.62	2.4	-.22	1,435.1	411.0	.29
2. Thailand	6.0	8.0	2.0	6.05	7.91	1.86	5.01	9.89	4.87	.25	.244	-.006	2.50	2.8	.30	191.6	1,024.0	5.34
3. Korea	5.0	9.4	4.4	7.56	27.10	19.54	6.37	17.80	11.43	.15	.286	.136	3.27	2.1	-1.17	2,769.4	4,026.0	1.45
4. Iran	5.5	8.3	2.8	7.12	10.68	3.56	8.08	13.30	5.22	.15	.303	.153	3.70	1.9	-1.80	-13.5	-3,039.6	
5. Kenya	3.5	6.7	3.2	4.45	2.28	-2.17	4.24	6.67	2.43	.15	.147	-.003	4.00	2.5	-1.50	110.4	74.6	.68
Retarded Growth Cases																		
1. Tunisia	5.0	3.5	-1.5	4.45	5.48	1.03	6.59	3.39	-3.20	.20	.107	.187	4.00	4.9	.90	1,062.0	1,553.0	1.46
2. Chile	5.0	3.9	-1.1	2.49	8.04	5.55	3.34	2.48	-.86	.16	.206	.046	3.40	4.2	.80	2,864.1	-142.6	-.04
3. Ceylon	5.0	3.9	-1.1	2.31	-.72	-3.03	3.47	.76	-2.71	.15	.217	.067	3.24	3.1	-.14	536.7	394.1	.74
4. Ghana	5.5	2.2	-3.2	2.15	-1.30	-3.45	3.42	-4.20	-7.62	.07	.091	.019	3.50	5.6	2.10	1,310.9	233.7	.18
5. India	5.3	3.5	-1.8	2.67	1.97	-.70	5.43	-.38	-5.81	.21	.102	-.108	3.20	4.5	1.30	11,457.2	6,312.5	.55
6. Colombia	6.1	4.9	-1.2	3.56	3.80	.24	5.54	3.92	-1.62	.26	.211	-.049	4.80	4.0	-.80	4,409.1	411.0	.09

NB. Plan refers to Chenery-Strout estimates.

Table 8

Distribution of External Capital and Growth

Country	Per Capita GNP (1960)	Population (1970)	GNP (1960)	GNP 1970 (Projected)	GNP 1970 (Actual)	Growth of GNP per capita (Projected)	Growth of GNP per capita (Actual)	TOTAL CAPITAL INFLOW 1962-70 (Projected)	TOTAL CAPITAL INFLOW 1962-70 (Actual)	Ratio Actual/Proj.
A. GNP Per Capita (1960)> $190										
1. Israel	843	2,910	1,781.5	4,217.5	3,772.1 1/	5.5	4.7	3,656.8	4,487.7	1.23
2. Venezuela	752	10,399	5,003.0	8,959.6	9,087.0	2.6	2.3	-6,111.4	-3,007.3	-
3. Argentina	681	23,212	14,208.6	21,646.7	19,512.3	2.6	2.5	4,565.3	-1,196.7	-0.26
4. Greece	417	8,892	3,475.5	6,524.0	6,286.8 1/	5.6	6.6	2,635.0	5,218.1	1.98
5. Jamaica	388	1,888	580.9	902.1	866.6	3.2	3.5	197.2	224.7	1.14
6. Chile	371	9,780	2,848.4	4,639.7	4,135.2 1/	2.7	1.6	2,884.1	-112.6	-0.04
7. Mexico	352	50,670	13,197.7	23,635.0	26,105.5	2.9	3.7	670.1	423.5	0.63
8. Costa Rica	340	1,727	416.4	745.7	778.8	2.1	3.2	361.5	343.2	0.95
9. Guatemala	253	5,190	967.0	1,575.1	1,594.5	2.0	2.0	836.1	184.5	0.22
10. Peru	247	13,586	2,482.4	4,240.3	3,975.5 1/	3.2	1.4	1,015.1	-167.0	-0.16
11. Colombia	221	21,632	3,310.7	5,595.1	5,056.3 1/	3.2	1.7	4,409.1	411.0	0.09
12. Turkey	217	35,230	6,014.9	10,771.7	10,691.5	3.1	3.9	3,597.1	1,820.3	0.51
13. El Salvador	210	3,534	516.6	925.1	846.4 1/	3.3	1.7	185.0	157.3	0.85
14. Malaysia	208	10,945	1,683.3	2,747.9	3,273.1	1.8	3.1	-112.1	-920.7 8/	-
15. Brazil	193	92,764	14,091.1	24,069.6	21,953.9 1/	2.4	2.4	4,936.3	-113.9	-0.02
16. Iran	192	28,662	3,802.4	6,495.0	7,961.7 1/	3.0	5.4	-13.5	-3,069.6	-
SUB-TOTAL		321,021	74,380.4	4,785.4	125,897.2			29,938.7	13,270.3 2/	0.44
B. GNP Per Capita (1960)< $190										
17. Ecuador	182	6,093	790.7	1,288.0	1,205.8 1/	2.0	1.7	392.7	165.6	0.42
18. Morocco	167	15,495	1,941.7	2,874.2	2,076.4 1/	1.3	1.0	1,421.9	265.1	0.19
19. Jordan	160	2,317	271.3	467.8	540.6 1/	2.9	2.9	1,041.2	1,076.4	1.03
20. Ghana	158	8,640	1,047.3	1,789.3	1,379.4	3.0	-0.4	1,310.9	233.7	0.17
21. Tunisia	156	5,075	606.5	987.9	980.8 1/	2.9	0.5	1,062.0	1,553.0	1.46
22. Philippines	149	36,850	3,715.6	6,346.8	6,297.4 1/	2.3	2.3	1,040.7	773.9	0.74
23. China (Taiwan)	147	14,035	1,558.5	3,065.8	3,796.4	4.1	7.1	1,435.1	411.0	0.29
24. Ceylon	131	12,514	1,309.4	2,132.9	2,086.6	2.2	1.5	530.7	394.1	0.74
25. Egypt	129	33,329	3,138.4	5,360.8	4,740.9	3.0	1.7	3,539.3	1,697.4	0.48
26. Thailand	111	36,218	2,427.9	4,348.0	5,116.9	2.9	4.9	191.6	1,024.0	5.34
27. Korea	104	31,793	2,566.8 4/	4,181.0	6,126.6 1/	2.1	6.8	2,769.4	4,026.0	1.45
28. Kenya	101	11,250	906.6 4/	986..	1,264.1	0.5	3.6	110.4	74.6	0.68
29. Indonesia	89	115,567	7,976.1 2/	10,719.2	11,261.0	0.7	1.0	2,507.9	3,430.7	1.37
30. Uganda	89	9,814	566.3 2/	797.6	901.4 1/	1.5	2.4	362.2	208.7	.58
31. Sudan	88	15,695	997.9 2/	1,640.6	1,357.4 1/	2.7	1.0	251.8	244.5	.96
32. India	83	538,129	35,341.0	59,232.6	48,276.5 1/	2.9	1.2	11,457.2	6,312.5	.55
33. Pakistan	71	130,166	7,318.8	12,266.5	11,894.1 1/	2.7	2.4	3,997.8	3,478.4	.87
34. Nigeria	70	55,070	3,568.1	5,541.1	4,407.2 2/	2.5	0.1	2,210.1	854.4	.39
35. Tanzania	65	13,270	624.2	1,016.8	986.8 6/	3.0	4.1	402.4	-50.8	-.13
36. Burma	56	27,584	1,189.2	1,760.3	1,623.9	1.8	0.6	- 116.2	88.9	-
37. Ethiopia	45	24,625	984.7 2/	1,456.4	1,301.4 2/	3.1	2.8	217.6	208.0	.96
SUB-TOTAL (b)		1,143,529	78,847.2	128,260.0	118,421.6			36,255.9	26,520.9 2/	.73
TOTAL (a & b)		1,464,550	153,227.6	263,045.4	244,318.8			66,194.6 2/	39,791.2 2/	.60

1/ 1969.
2/ 1961.
3/ 1967.
4/ 1964.
5/ 1966.
6/ 1968.
7/ 1964-70.
8/ No data for 1964.

2/ Excludes negative numbers (outflows).

Table 9: TRADE - LIMIT

w<0	x<0	w>(1+α)	Country	m=(1+α)	c_3	c_2	b_3	b_2	$w = \frac{c_3(c_2-b_2)}{b_3 + c_2c_3}$
	✓	✓	Argentina	1.003	.785	.104	-.155	.251	1.573
			Brazil	1.038	.181	.009	.062	.008	.003
✓	✓		Burma	.923	.558	.244	-.325	.147	.287
✓			Ceylon	1.007	.424	.261	-.079	.279	-.241
			Chile	1.025	.295	.456	.046	.151	.500
		✓	China (Taiwan)	1.155	1.067	-.374	.040	.360	2.181
			Colombia	1.039	1.011	.675	-.0996	.192	.838
			Costa Rica	1.112	.217	1.193	.441	.116	.334
			Ecuador	1.048	.244	.263	.127	.178	.108
			El Salvador	1.079	.857	.289	.256	.128	.274
			Ethiopia	1.065	-1.017	.126	.346	.178	.243
✓	✓		Ghana	.958	.603	.208	-.250	-.193	-1.941
			Greece	1.069	.520	.754	.059	.318	.503
		✓	Guatemala	1.092	.523	-.382	.170	.274	11.518
	✓		India	.996	.043	-.108	-.011	.006	.313
✓			Indonesia	1.101	-.142	.449	.427	.129	-.125
✓			Iran	1.103	.754	.169	.026	.282	-.555
			Israel	1.125	.513	.641	.441	.005	.424
✓			Jamaica	1.066	.623	.002	.319	.421	-.815
✓			Jordan	1.075	.957	.184	.151	.367	-.535
			Kenya	1.067	.641	.234	.072	.217	.049
			Korea	1.179	.679	.775	.084	.294	.535
		✓	Malaysia	1.057	1.148	-.204	.106	.168	3.331
			Mexico	1.055	-.031	.0005	.082	.241	.091
/			Morocco	1.028	.272	.090	.082	.201	-.284
	✓	✓	Nigeria	1.036	2.007	-.270	-.348	.272	1.222
			Pakistan	1.052	.347	.498	.014	.134	.676
			Peru	1.016	.381	.213	.085	-.053	.610
	✓	✓	Philippines	1.099	1.081	-.152	-.068	.265	1.940
			Sudan	1.034	.400	.136	.225	-.019	.229
		✓	Tanzania	1.064	.735	-.290	.087	.307	3.478
			Thailand	1.099	.006	.481	.247	.262	.005
	✓	✓	Tunisia	1.038	.802	-.169	-.039	.265	1.995
			Turkey	1.063	-.099	-.174	.089	.265	.409
			Uganda	1.060	-.674	.142	.388	.226	.194
✓			Venezuela	1.086	.505	.035	.089	.395	-1.704

Equations:

$M_t = a_3 + b_3Y_t + c_3I_t$

$I_t = a_2 + b_2Y_t + c_2(Y_t - Y_{t-1})$

Text equivalents:

$m_1 = b_3$, $m_3 = c_3$, $b_1' = (b_2 + c_2)$, $b_3' = -c_2$

Stability conditions:

A. Trade Root Dominant — $m > w$
B. Non-oscillatory — $w > 0$
C. Positive coefficient on trade root — $x > 0$

Differential equation:

$Y_t = A(w)^t + \left(\frac{x}{m-w}\right)(m)^t - \left(\frac{h}{1-w}\right)$

Table 10: Capital Stock to Output Relationship

Obs.	Country	A	B	r^2	$\left(\frac{I^{ki}}{Y}\right)_{1960}$
21	Argentina	-1614 (-1.7)	.44 (17.2)	.940	1.062
20	Brazil	-8137 (-7.7)	.745 (21.4)	.962	1.070
21	Burma	-959 (-4.3)	.979 (9.5)	.825	1.098
21	Ceylon	-1780 (-15.4)	1.073 (27.4)	.975	1.010
20	Chile	-1735 (-9.6)	.694 (26.2)	.975	1.029
21	China (Taiwan)	-300 (-2.6)	.643 (19.8)	.954	1.129
20	Colombia	-1110 (-8.8)	.553 (35.9)	.986	1.086
21	Costa Rica	-84 (-6.3)	.576 (40.8)	.989	1.000
20	Ecuador	-751 (-15.7)	1.017 (32.5)	.983	1.039
12	El Salvador	-1033 (-4.1)	1.242 (6.8)	.821	1.207
7	Ethiopia/3	-2372 (-52)	1.177 (76.7)	.999	1.005/2
21	Ghana	-98 (-1.1)	.496 (12.8)	.896	1.000
20	Greece	-231 (-1.3)	.487 (23.2)	.968	1.056
21	Guatemala	-2291 (-7.5)	1.79 (10.9)	.863	1.184
10	India	-838 (-.18)	.493 (8.8)	.907	1.069
13	Indonesia/3	-60140 (-5.6)	3.008 (6.4)	.789	1.076
11	Iran	-8186 (-9.6)	1.27 (15.9)	.966	1.163
20	Israel	-187 (-3.3)	.527 (40.6)	.989	1.032
17	Jamaica	-53 (-1.9)	.496 (24.8)	.976	1.071
11	Jordan	-394 (-5.4)	1.014 (10.9)	.930	1.259
6	Kenya	-1446 (-4.3)	1.115 (7.4)	.932	1.103/1
18	Korea	-2210 (-5.1)	.852 (12.8)	.910	1.257
11	Malaysia	-1546 (-9.8)	1.123 (25.7)	.988	1.116
21	Mexico	-8332 (-20)	.907 (56.5)	.994	1.056
12	Morocco	-4934 (-1.2)	1.418 (1.7)	.231	1.342
17	Nigeria	-5312 (.7)	1.592 (4.2)	.545	1.000
10	Pakistan	-28396 (6.8)	1.745 (9.1)	.910	1.198
21	Peru	-432 (-3.7)	.46 (27.5)	.976	1.105
20	Philippines	-2355 (-4.4)	.822 (11.7)	.884	1.054
9	Sudan	197 (.85)	.431 (4.2)	.718	1.136/2
9	Tanzania	-2718 (-5.2)	1.894 (6.7)	.865	1.201
19	Thailand	-706 (-3.2)	.677 (16.7)	.942	1.072
11	Tunisia	368 (5.4)	.312 (6.9)	.841	1.230
21	Turkey	-3797 (-11.5)	.832 (31.3)	.981	1.035
9	Uganda	-446 (-4.5)	1.109 (11.8)	.952	1.110/2
21	Venezuala	-2054 (-6.4)	.651 (23.8)	.968	1.223

$Y = A + BK$

/1 Starts at 1964.
/2 Starts at 1961.
/3 Assumes 3% depreciation.

TABLE 11 : SAVINGS REGRESSIONS

1960-1970

Obs.	Country	Constant	Y	F	r^2
11	Argentina	-1,096 (-2.8)	.277 (11.9)	.170 (1.1)	.9481
10	Brazil	1,094 (1.4)	.117 (2.6)	-.754 (-1.6)	.6225
11	Burma	15 (.12)	.100 (1.1)	.094 (.23)	.1870
11	Ceylon	-167 (-3.1)	.245 (6.6)	-.368 (-1.2)	.8800
10	Chile	-116 (-.40)	.202 (2.5)	-.583 (-1.3)	.9321
11	China (Taiwan)	-328(-13.5)	.343 (45)	-.298 (-2.4)	.9971
10	Colombia	-112 (-.84)	.217 (6.6)	-.388 (-1.0)	.8629
11	Costa Rica	-13 (-.57)	.221 (4.5)	-.559 (-2.1)	.7506
10	Ecuador	70 (4.8)	.065 (4.1)	.089 (.82)	.8894
10	El Salvador	38 (1.7)	.058 (1.7)	.058 (.2)	.3698
7	Ethiopia	-60 (-1.8)	.177 (4.9)	-.913 (-1.8)	.8779
11	Ghana	307 (1.9)	-.112 (-.89)	-.669 (-2.1)	.4151
10	Greece	-345 (-4.1)	.205 (8.2)	.159 (.89)	.9592
11	Guatemala	-167 (-7.1)	.246 (14.1)	-.305 (-1.2)	.9640
10	India	1,817 (.9)	.097 (2.4)	-.113 (-.18)	.5717
11	Indonesia	-1,925 (-2.6)	.312 (3.7)	-1.362 (-5.5)	.7900
10	Iran	-386 (-4.8)	.304 (25.3)	.012 (.06)	.9899
10	Israel	322 (2.6)	-.023 (-.31)	.119 (.31)	.0149
10	Jamaica	-63 (-1.4)	.300 (4.4)	-.418 (-1.3)	.7750
10	Jordan	-51 (-2.3)	.140 (1.9)	-.386 (-2.3)	.4334
6	Kenya	34 (.34)	.137 (1.4)	.061 (.13)	.7336
11	Korea	-677(-11.5)	.252 (7.5)	.267 (1.1)	.9826
10	Malaysia	-45 (-1.3)	.194 (13.5)	-.620 (-6.7)	.9760
11	Mexico	-962 (-5.7)	.230 (25.1)	-.563 (-1.4)	.9893
10	Morocco	-226 (-2.4)	.216 (5.4)	-.339 (-.95)	.8073
7	Nigeria	-686 (-2.9)	.289 (5.8)	-.721 (-2.2)	.9752
10	Pakistan	-205 (-.57)	.125 (2.5)	.196 (.31)	.6653
11	Peru	625 (6.4)	-.001 (-.04)	-.080 (-.44)	.0235
10	Philippines	-211 (-1.5)	.240 (8.1)	-.755 (-3.7)	.9050
9	Sudan	78 (.84)	.061 (.71)	-.251 (-.46)	.0769
9	Tanzania	-50 (-2.2)	.216 (7.7)	-.337 (-1.6)	.9122
11	Thailand	-424 (-3.8)	.338 (8.8)	-1.173 (-2.9)	.9470
11	Tunisia	-180 (-4.6)	.379 (8.6)	-.291 (-1.7)	.9079
11	Turkey	-640 (-6.7)	.238 (19.5)	-.627 (-2.2)	.9806
9	Uganda	-93 (-6.4)	.265 (14.0)	-1.254 (-8.2)	.9731
11	Venezuela	-228 (-.42)	.326 (7.2)	-.247 (-.63)	.9054

TABLE 12 : IMPORT REGRESSIONS

1960-1970

Obs.	Country	Constant	Y	I	r^2
11	Argentina	1,433 (3.5)	-.155 (-4.0)	.785 (6.0)	.8242
10	Brazil	-370 (-.55)	.062 (1.4)	.181 (.66)	.4918
11	Burma	529 (3.8)	-.325 (-2.8)	.558 (1.9)	.5038
11	Ceylon	438 (6.9)	-.079 (-1.1)	.424 (1.8)	.4821
10	Chile	169 (1.7)	.046 (.92)	.295 (.93)	.6205
11	China (Taiwan)	-123 (-.75)	.040 (.2)	1.067 (1.7)	.9637
10	Colombia	152 (1.6)	-.0996(-1.8)	1.011 (4.6)	.8891
11	Costa Rica	-100 (-4.2)	.441 (4.2)	.217 (.62)	.9570
10	Ecuador	9.554 (.45)	.127 (3.1)	.244 (1.3)	.9139
10	El Salvador	-74 (-5.3)	.256 (9.9)	.857 (5.9)	.9805
7	Ethiopia	-103 (-2.3)	.346 (3.5)	-1.017 (-2.0)	.9056
11	Ghana	446 (2.0)	-.250 (-1.9)	.603 (1.4)	.6647
10	Greece	80 (.85)	.059 (1.2)	.520 (3.8)	.9644
11	Guatemala	-73 (-1.3)	.170 (2.0)	.523 (1.5)	.9549
10	India	2,874 (2.3)	-.011 (-.42)	.043 (.20)	.0247
11	Indonesia	-2,526 (-1.6)	.427 (2.0)	-.142 (-.21)	.4923
10	Iran	-13.4 (-.17)	.026 (.8)	.754 (6.8)	.9943
10	Israel	-589 (-3.0)	.441 (5.7)	.513 (1.5)	.9133
10	Jamaica	-51 (-1.3)	.319 (3.1)	.623 (2.5)	.9651
10	Jordan	42 (1.2)	.151 (1.2)	.957 (3.0)	.8659
6	Kenya	137 (3.0)	.072 (.97)	.641 (2.9)	.9621
11	Korea	-78 (-.51)	.084 (1.1)	.674 (3.8)	.9878
10	Malaysia	309 (6.0)	.106 (1.9)	1.148 (4.1)	.9756
11	Mexico	439 (1.4)	.082 (1.2)	-.031 (-.11)	.9335
10	Morocco	256 (2.3)	.082 (1.1)	.272 (.90)	.6720
7	Nigeria	1,102 (2.1)	-.348 (-1.5)	2.007 (2.3)	.7637
10	Pakistan	278 (1.4)	.014 (.36)	.347 (2.0)	.7285
11	Peru	138 (1.3)	.085 (4.0)	.381 (3.1)	.7467
10	Philippines	103 (.59)	-.068 (-.75)	1.081 (3.6)	.9411
9	Sudan	-106 (-1.0)	.225 (2.1)	.400 (.84)	.6513
9	Tanzania	43 (1.5)	.087 (1.2)	.735 (2.7)	.9609
11	Thailand	-153 (-1.9)	.247 (4.2)	.006 (.03)	.9853
10	Tunisia	133 (4.3)	-.039 (-.64)	.802 (5.6)	.9247
11	Turkey	62 (.13)	.089 (.52)	-.099 (-.14)	.4723
9	Uganda	-53 (-.95)	.388 (2.4)	-.674 (-1.1)	.8787
11	Venezuela	42 (.24)	.089 (1.8)	.505 (4.1)	.9795

TABLE 13 : INVESTMENT REGRESSIONS

1960-1970

Obs.	Country	Constant	Y	Δ Y	r^2
11	Argentina	-822 (-.66)	.251 (3.3)	.104 (.50)	.6679
10	Brazil	1,738 (1.6)	.008 (1.3)	.009 (.52)	.3137
11	Burma	-49 (-.26)	.147 (1.1)	.244 (1.3)	.4462
11	Ceylon	-219 (-2.7)	.279 (4.3)	.261 (.55)	.9011
10	Chile	3.2 (.002)	.151 (3.8)	.458 (1.5)	.7116
11	China (Taiwan)	-256 (-7.9)	.360 (20.9)	-.374 (-2.1)	.9916
10	Colombia	-121 (-.71)	.192 (3.5)	.675 (1.4)	.8920
11	Costa Rica	21.6 (1.3)	.116 (2.8)	1.193 (4.4)	.9596
10	Ecuador	-44 (-.93)	.178 (3.2)	.263 (.73)	.7914
10	El Salvador	-2.6 (-.05)	.128 (2.0)	.289 (.70)	.4023
7	Ethiopia	-66 (-.93)	.178 (1.9)	.126 (.16)	.9094
11	Ghana	405 (3.2)	-.193 (-1.8)	.208 (.74)	.3187
10	Greece	-520 (-2.3)	.318 (6.7)	.754 (1.8)	.9157
11	Guatemala	-167 (-5.4)	.274 (9.4)	-.382 (-1.4)	.9430
10	India	4,266 (2.4)	.006 (1.4)	-.108 (-1.1)	.2687
11	Indonesia	-519 (-.44)	.129 (.93)	.449 (1.1)	.6139
10	Iran	-679 (-3.6)	.282 (4.6)	.169 (.45)	.9747
10	Israel	428 (2.5)	.005 (.71)	.641 (1.9)	.5295
10	Jamaica	-146 (-3.0)	.421 (5.9)	.002 (.06)	.8783
10	Jordan	-83 (-1.8)	.367 (3.3)	.184 (.51)	.6659
6	Kenya	-55 (-.48)	.217 (1.9)	.234 (.65)	.7812
11	Korea	-580 (-4.8)	.294 (6.1)	.775 (2.9)	.9807
10	Malaysia	13.3 (.14)	.168 (5.6)	-.204 (-.61)	.8401
11	Mexico	-1,170 (-6.7)	.241 (18.7)	.0005(.005)	.9911
10	Morocco	-186 (-1.3)	.201 (3.3)	.09 (.85)	.7568
9	Nigeria	-543 (-8.1)	.272 (15.8)	-.270 (-4.5)	.9882
10	Pakistan	-88 (-.19)	.134 (2.40)	.498 (1.1)	.6947
11	Peru	752 (2.8)	-.053 (-.73)	.213 (.62)	.1467
10	Philippines	-266 (-3.4)	.265 (13.9)	-.152 (-1.4)	.9799
9	Sudan	193 (2.4)	-.019 (-.29)	.136 (1.5)	.3347
9	Tanzania	-113 (-4.2)	.307 (8.0)	-.290 (-1.7)	.9415
11	Thailand	-359 (-5.1)	.282 (11.4)	.481 (2.4)	.9777
10	Tunisia	-40 (-.45)	.285 (2.8)	-.189 (-.99)	.5848
11	Turkey	-711 (-7.1)	.265 (17.6)	-.174 (-1.7)	.9852
9	Uganda	-65 (-4.3)	.226 (10.3)	.142 (2.0)	.9689
11	Venezuela	-1,276 (-3.5)	.395 (7.8)	.035 (.1)	.9005

Table 14: SAVINGS REGRESSIONS - FULL SAMPLE 1950-1970

Obs.	Country	Constant		Y		F		r^2
19	Argentina	-683.2	(-2.694)	.2444	(13.64)	-.2636	(-1.537)	.9760
19	Brazil	64.84	(.2148)	.1736	(8.212)	-.6271	(-1.288)	.8285
19	Burma	-57.41	(-5.225)	.1763	(83.12)	-.7784	(-2.730)	.9977
19	Ceylon	-1.911	(-.07266)	.1441	(7.310)	-.8132	(-8.228)	.8229
19	Chile	-75.28	(-1.238)	.1894	(9.332)	-.5217	(-2.454)	.8651
19	China (Taiwan)	-190.8	(-4.136)	.2650	(15.25)	.05464	(.1797)	.9502
19	Colombia	-112.1	(-1.369)	.2225	(9.167)	-.6656	(-2.002)	.8438
19	Costa Rica	-8.265	(-3.102)	.2024	(92.20)	-.3087	(-2.441)	.9987
19	Ecuador	23.69	(2.526)	.1150	(9.975)	-.3966	(-3.054)	.8736
11	El Salvador	25.20	(1.236)	.0730	(2.191)	.1427	(.4843)	.5345
7	Ethiopia	-60	(-1.8)	.177	(4.9)	-.913	(-1.8)	.8772
19	Ghana	-102.7	(-9.334)	.2630	(58.66)	-1.048	(-6.121)	1.000
19	Greece	-284.9	(-5.741)	.2202	(7.875)	-.1437	(-.7160)	.9463
20	Guatemala	-1.632	(-.06694)	.09210	(3.390)	.6659	(3.288)	.9950
10	India	1,817	(.9)	.097	(2.4)	-.113	(-.18)	.5717
12	Indonesia	-1,919	(-2.872)	.3118	(3.959)	-1.364	(-5.938)	.7967
10	Iran	-385.6	(-4.772)	.3035	(25.29)	.01187	(.05654)	.9899
19	Israel	41.89	(.7490)	.1395	(3.851)	-.2802	(-.9332)	.6224
19	Jamaica	-17.88	(-2.104)	.2233	(53.19)	-.5223	(-2.026)	1.000
10	Jordan	-50.95	(-2.264)	.1401	(1.891)	-.3859	(-2.264)	.4334
6	Kenya	34	(.34)	.137	(1.4)	.061	(.13)	.7336
17	Korea	-527.1	(-8.288)	.2370	(5.133)	.1061	(.3162)	.9866
14	Malaysia	-82.70	(-3.630)	.2097	(23.29)	-.5900	(-7.788)	.9821
19	Mexico	-1,905	(-2.738)	.3379	(9.164)	-4.648	(-2.533)	.9940
11	Morocco	-232.9	(-2.862)	.2181	(6.078)	-.3139	(-.9896)	.8223
19	Nigeria	-387.1	(-.8440)	.2300	(7.526)	-.4670	(-1.421)	.7970
10	Pakistan	-205	(-.57)	.125	(2.5)	.196	(.31)	.6653
19	Peru	103.9	(2.003)	.1609	(8.320)	-.2761	(-1.105)	.8260
19	Philippines	-222.8	(-3.471)	.2367	(13.87)	-.5390	(-2.872)	.9249
9	Sudan	78	(.84)	.061	(.71)	-.251	(-.46)	.0769
9	Tanzania	-50	(-2.2)	.216	(7.7)	-.337	(-1.6)	.9122
19	Thailand	-300.4	(-13.42)	.2968	(55.81)	-.7597	(-4.964)	.9993
11	Tunisia	-180	(-4.6)	.379	(8.6)	-.291	(-1.7)	.9079
19	Turkey	-299.7	(-2.372)	.1804	(8.293)	.05728	(.1091)	.8371
9	Uganda	-93	(-6.4)	.265	(14.0)	-1.254	(-8.2)	.9731
19	Venezuela	473.1	(4.841)	.1747	(303.6)	-.5961	(-3.624)	1.000

Table 15: IMPORT REGRESSIONS - FULL SAMPLE 1950-1970

Obs.	Country	Constant		Y		I		r^2
19	Argentina	295.7	(.743)	-.0751	(-1.120)	.7428	(2.635)	.5091
19	Brazil	592.5	(1.901)	-.1126	(-2.281)	.8438	(3.245)	.4397
19	Burma	137.4	(8.951)	-.0335	(-.912)	.6176	(2.966)	.9911
19	Ceylon	333.6	(3.733)	-.2364	(-1.398)	1.836	(1.963)	.2462
19	Chile	27.23	(.372)	.0007	(.014)	.7808	(2.962)	.7314
19	China (Taiwan)	34.22	(2.340)	-.0597	(-2.931)	1.182	(14.40)	.9880
19	Colombia	290.9	(4.081)	-.2533	(-4.811)	1.636	(7.772)	.8709
19	Costa Rica	62.82	(10.15)	-.1708	(-1.943)	1.454	(3.471)	.9781
19	Ecuador	-8.452	(-.981)	.0256	(.890)	1.116	(6.086)	.9567
11	El Salvador	-58.80	(-4.271)	.2529	(8.405)	.732	(4.790)	.9772
7	Ethiopia	-103	(-2.3)	.346	(3.5)	-1.017	(-2.0)	.9056
19	Ghana	146.8	(6.196)	-.0713	(-1.265)	1.016	(1.778)	1.000
19	Greece	31.30	(.566)	-.0916	(2.244)	.4350	(3.572)	.9793
20	Guatemala	-42.59	(-2.217)	.1867	(6.370)	.1475	(1.630)	.9976
10	India	2,874	(2.3)	-.011	(-.42)	.043	(.20)	.0247
12	Indonesia	-2,437	(-1.771)	.4165	(2.201)	-.1316	(.208)	.5221
10	Iran	-13.41	(-.168)	.0262	(.798)	.7541	(6.784)	.9947
19	Israel	-185.9	(-2.336)	.3740	(5.229)	.2104	(.669)	.9081
19	Jamaica	114.0	(12.95)	-.0763	(-.821)	1.148	(2.658)	.9998
10	Jordan	42.12	(1.162)	.1514	(1.193)	.957	(3.038)	.8633
6	Kenya	137	(3.0)	.072	(.97)	.641	(2.9)	.9623
17	Korea	-226.1	(-2.402)	.1482	(2.782)	.545	(3.972)	.9873
15	Malaysia	261.7	(6.111)	.0881	(1.787)	1.371	(6.042)	.9876
19	Mexico	1,070	(12.20)	.0035	(.326)	.208	(8.077)	.9961
11	Morocco	242.3	(2.184)	.0780	(1.019)	.341	(1.183)	.7206
18	Nigeria	967.8	(2.325)	-.1653	(-3.048)	.974	(4.643)	.6213
11	Pakistan	278	(1.4)	.014	(.36)	.347	(2.0)	.7286
13	Peru	7.026	(.263)	.1031	(6.144)	.514	(5.498)	.9659
18	Philippine	165.4	(1.205)	-.0336	(-.445)	.853	(3.426)	.9239
8	Sudan	-106	(-1.0)	.225	(2.1)	.400	(.84)	.6513
9	Tanzania	43	(1.5)	.087	(1.2)	.735	(2.7)	.9603
19	Thailand	-338.7	(-1.572)	.3493	(1.561)	-.043	(-.056)	.9828
11	Tunisia	133	(4.3)	-.039	(-.64)	.802	(5.6)	.9243
19	Turkey	415.3	(2.749)	-.1361	(-2.557)	.960	(3.912)	.5701
9	Uganda	-53	(-.95)	.388	(2.4)	-.674	(-1.1)	.8787
19	Venezuela	679.1	(7.133)	-.0462	(-.915)	.557	(1.942)	.9993

Table 16: INVESTMENT REGRESSIONS - FULL SAMPLE 1950-1970

Obs.	Country	Constant		Y		Δ Y		r^2
19	Argentina	-200.3	(-.5874)	.2077	(8.351)	.1032	(1.124)	.5[illegible]
19	Brazil	92.28	(.3015)	.1685	(7.848)	.0739	(.3657)	.[illegible]
19	Burma	-46.92	(-4.183)	.1550	(15.62)	.2500	(2.161)	.[illegible]
19	Ceylon	-24.62	(-1.064)	.1560	(7.934)	.1100	(1.081)	.[illegible]
19	Chile	-43.93	(-.6711)	.1729	(7.431)	.2148	(1.243)	.[illegible]
19	China (Taiwan)	-93.11	(-2.724)	.1900	(8.314)	.7449	(2.816)	.[illegible]
19	Colombia	-142.0	(-1.937)	.2144	(7.909)	.3824	(1.160)	.[illegible]
19	Costa Rica	-.7808	(-.2456)	.1721	(11.02)	.6746	(2.429)	.[illegible]
19	Ecuador	-1.467	(-.1254)	.1492	(8.947)	-.0706	(-.3857)	.[illegible]
11	El Salvador	-15.27	(-.5105)	.1387	(3.229)	.4197	(1.262)	.[illegible]
7	Ethiopia	-66	(-.93)	.178	(1.9)	.126	(.16)	.[illegible]
19	Ghana	-93.21	(-9.207)	.2416	(20.47)	.3218	(1.988)	1.[illegible]
19	Greece	-365.4	(-5.595)	.3155	(13.95)	.2031	(.8395)	.[illegible]
20	Guatemala	-187.2	(-10.90)	.2817	(11.15)	.0295	(1.680)	.[illegible]
10	India	4,266	(2.4)	.006	(1.4)	-.108	(-1.1)	.[illegible]
12	Indonesia	-452.7	(-.5617)	.1217	(1.244)	.4629	(1.354)	.[illegible]
10	Iran	-510.8	(-2.295)	.2448	(3.275)	.2874	(.6150)	.[illegible]
19	Israel	111.6	(2.194)	.1791	(6.581)	.3821	(1.782)	.[illegible]
19	Jamaica	-4.789	(-.9705)	.2067	(18.29)	.1733	(.7476)	1.000
10	Jordan	-57.07	(-1.526)	.3114	(3.351)	.1674	(.4701)	.6476
6	Kenya	-55	(-.48)	.217	(1.9)	.234	(.65)	.[illegible]
17	Korea	-410.6	(-5.505)	.2483	(6.872)	.8685	(3.978)	.[illegible]
14	Malaysia	-131.8	(-3.377)	.1983	(8.503)	.1406	(.6905)	.[illegible]
19	Mexico	-2,729	(-5.540)	.3385	(5.407)	.6127	(1.151)	.[illegible]
11	Morocco	-201.7	(-1.854)	.2070	(4.214)	.0971	(1.039)	.[illegible]
19	Nigeria	-223.7	(-8.705)	.1887	(22.86)	-.0942	(-2.877)	.[illegible]
10	Pakistan	-88	(-.19)	.134	(2.40)	.498	(1.1)	.[illegible]
19	Peru	138.6	(2.306)	.1431	(5.787)	.2775	(1.009)	.[illegible]
19	Philippines	-487.6	(-7.820)	.2866	(15.43)	.1710	(.9910)	.[illegible]
9	Sudan	193	(2.4)	-.019	(-.29)	.136	(1.5)	.[illegible]
9	Tanzania	-113	(-4.2)	.307	(8.0)	-.290	(-1.7)	.[illegible]
19	Thailand	-279.1	(-17.98)	.2833	(41.15)	.1435	(1.199)	.[illegible]
11	Tunisia	-40	(-.45)	.285	(2.8)	-.189	(-.99)	.[illegible]
19	Turkey	-258.3	(-1.842)	.1970	(7.708)	.0083	(.0482)	.8296
9	Uganda	-65	(-4.3)	.226	(10.3)	.142	(2.0)	.9689
19	Venezuela	214.6	(2.562)	.1699	(18.84)	.2254	(.6717)	1.000

Table 17: Savings 1960-70

Obs.	Country	Constant		Y		X		F		r^2
11	Argentina	-1,384	(4.5)	.248	(12.1)	.482	(2.7)	.230	(2.0)	.974
10	Brazil	1,168	(1.3)	.094	(1.3)	.260	(0.5)	-.594	(-.98)	.635
11	Burma	-190	(1.2)	.199	(1.99)	.406	(1.8)	.350	(.90)	.434
11	Ceylon	-254	(-.79)	.248	(6.0)	.213	(.28)	-.317	(-.83)	.861
10	Chile	-96	(-.32)	.157	(1.4)	.274	(.58)	-.444	(-.81)	.935
10	Colombia	-163	(-2.2)	.105	(3.2)	.996	(4.1)	-.450	(-2.2)	.964
11	Costa Rica	-112	(-2.5)	.751	(3.3)	-1.352	(-2.4)	-.811	(-3.4)	.861
10	Ecuador	78	(5.0)	.097	(3.2)	-.228	(-1.2)	-.067	(-.4)	.911
10	El Salvador	69	(3.7)	-.180	(-2.1)	.771	(2.9)	.085	(.42)	.735
7	Ethiopia	-69	(-3.3)	.262	(7.1)	-.680	(-2.8)	-1.070	(-3.4)	.966
11	Ghana	97	(.45)	-.005	(-.003)	.319	(1.3)	-.394	(-1.1)	.535
10	Greece	-404	(-3.6)	.283	(2.9)	-.520	(-.84)	.035	(.15)	.963
11	Guatemala	-145	(-2.6)	.206	(2.3)	.131	(.45)	-.254	(-.85)	.965
10	India	3,549	(1.9)	.149	(3.6)	-1.92	(-2.1)	-.329	(-.65)	.753
11	Indonesia	-1,756	(-2.6)	.257	(3.0)	.389	(1.6)	-1.435	(-6.2)	.846
10	Iran	238	(1.1)	-.294	(-1.5)	2.317	(3.0)	.201	(1.3)	.996
10	Israel	2.197	(.009)	.217	(1.2)	-.849	(-1.5)	.516	(1.1)	.277
10	Jamaica	-6.211	(-.11)	-.240	(-.64)	1.241	(1.5)	-.238	(-.75)	.833
10	Jordan	-52	(-2.2)	.209	(1.3)	-.381	(-.49)	-.409	(-2.2)	.455
6	Kenya	-112	(-.65)	.019	(.13)	.826	(1.0)	.228	(.45)	.827
11	Korea	-1,014	(-2.9)	.394	(2.6)	-.661	(-.96)	.375	(1.4)	.984
10	Malaysia	-140	(-2.1)	.072	(1.5)	.372	(2.6)	-.394	(-3.6)	.988
11	Mexico	-440	(-1.2)	.292	(7.3)	-.920	(-1.6)	-.835	(-2.1)	.992
10	Morocco	-208	(-1.5)	.228	(2.8)	-.091	(-.18)	-.373	(-.87)	.803
7	Nigeria	-430	(-1.7)	.172	(2.3)	.330	(1.6)	-.845	(-3.0)	.986
10	Pakistan	-565	(-.71)	.103	(1.5)	1.171	(.51)	.018	(.02)	.679
11	Peru	568	(2.2)	-.014	(-.23)	.154	(.25)	.005	(.01)	.032
10	Philippines	-130	(-.75)	.180	(2.3)	.280	(.83)	-.612	(-2.3)	.914
9	Sudan	86	(.83)	.082	(.73)	-.178	(-.33)	-.156	(-.24)	.096
9	Tanzania	-57	(-3.1)	.063	(.81)	.647	(2.1)	-.013	(-.06)	.952
11	Taiwan	-315	(-5.8)	.332	(8.2)	.026	(.27)	-.294	(-2.2)	.997
11	Thailand	-404	(-2.7)	.295	(1.5)	.190	(.23)	-1.031	(-1.4)	.947
11	Tunisia	-165	(-5.0)	.169	(1.6)	.792	(2.2)	-.026	(-.14)	.945
11	Turkey	-629	(-8.0)	.259	(18.6)	-.458	(-2.2)	-.478	(-1.9)	.988
9	Uganda	-91	(-5.9)	.298	(5.8)	-.157	(-.69)	-1.374	(-5.8)	.975
11	Venezuela	-713	(-1.8)	-.088	(-.66)	1.775	(3.2)	.344	(1.0)	.961