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On Gapsmanship and the Prospects for the Less-Developed...

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On Gapsmanship and the Prospects for the Less-Developed Countries

(or Around the Third World in 65 Pages)

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The development efforts of the LDCs are hemmed in by many yawning gaps. This paper attempts to show that the increasing dominance of the exchange gap in the savings-foreign exchange gap set and the resulting deceleration of the growth rate in an increasing number of LDCs is a consequence as well as a contributing cause of the widening income and technological gaps, vis-à-vis the economically advanced countries. Given the prevailing economic policies of the LDCs and the advanced countries, accelerating the long-term growth rate of advanced countries may only reinforce the dominance of the exchange gap in many LDCs and sustain the deceleration of their growth rate.

At first glance it may seem unwarranted to place the two sets of gaps in the same plane of discourse. The interactions of the savings and foreign exchange gaps with the rate of economic growth has been worked up in considerable analytic detail in two-gap models by Chenery, Bruno, McKinnon, Vanek, Linder and other trade and development economists and has served as the basis for national planning, econometric projections, estimates of aid requirements and similar exercises. The uses of the income and technological gaps, on the other hand, have been more hortatory than analytic.

The great differences in the levels of income and of technological and organizational skills between the advanced countries and the LDCs are, of course, the starting points for most analyses of economic development problems of the LDCs. Development is viewed as essentially a

process of catching up with the advanced countries by absorbing various of their behavioral characteristics which account for their superior productivity: work and savings habits, organizational methods, technology, educational levels, labor force distribution, etc.

But what about income? It is difficult enough to visualize India or Upper Volta reaching the current per capita income of, say, France in the next century. If in addition most of the LDCs continue to experience rates of growth of per capita output well below that of any of the advanced countries, catching up with their levels of income becomes an impossible dream. Nevertheless, by an heroic failure of nerve the disconcerting analytic implications of this seem to have been largely sidestepped. The LDCs are viewed, in effect, as progressing, Coke machine by TV set, cleansing themselves of their traditionalist norms, learning to use modern technology with facility, improving their capacity to accumulate, allocate and utilize economic resources, and thus gradually arriving at a full state of mini-modernization or mini-development with a per capita income which is an even smaller fraction of that of the advancing countries on arrival day than before the "Great Ascent" began.¹

How the LDCs can catch up technologically and organizationally while the income gap widens would seem to be a most relevant question. It is

1. Which advanced country? It doesn't matter much. According to Felix's Constant, the ratio between the highest and lowest per capita income among the developed countries is always less than 4 to 1. This constant was discovered accidentally while experimenting under an O.N.R. research contract with Kuznets' compilation of historical national income statistics in order to test what happens to the growth rate if the Drive to Maturity Stage precedes the Pre-conditions Stage. The constant seems to hold for the 19th as well as the 20th century.

avoided, however, by setting up the analysis of the LDCs as though it didn't much matter economically whether they are engaged in catching up with fixed or changing norms. The important thing is that they grow, and modernity and development will come to them in the fullness of time regardless of what happens meanwhile to the income technological and structural features of the countries from which the norms are deduced. In fact, the impact of more rapid growth of the advanced countries on the LDCs is, in the conventional view, almost wholly benign. It stimulates the demand for LDC exports and broadens and deepens the pool of technology from which the LDCs can draw. The effect on the high level manpower braindrain from the LDCs of widening international income differences and the adverse effect which the natural resource saving bias of technological progress of the advanced countries is having on primary exports from the LDCs are, to be sure, receiving increased attention. But they have not apparently reversed the conventional judgment of economists that an increase in the rate of growth of the advanced countries is generally favorable for the LDCs.

The emphasis on diverging rates of technological progress and income has, therefore, emerged from another part of the forest of development literature; from the softwoods of political and hortatory manifestos rather than the solid hardwoods of economic analysis. The increasing North-South divergence is used to prick the consciences of the rich countries in order to extract more aid and trade concessions for the LDCs. Underlying the exhortations is also the uneasy notion that there is something unstable and even politically explosive about a world whose peoples are drawing rapidly together in terms of communication and transportation time and rapidly pulling apart economically. But for most economists, as long as both North and South are growing, there are no compelling

economic reasons for either pessimism or for major modification of development analysis and prescription in the fact that the North keeps pulling away from the South. The following statement from a recent OECD report expresses the conventional view among economists.²

The concept of the "gap" is useful for demonstrating the great contrast between the affluence and the poverty which is present in the world. However, to set the closing of the gap as an objective is mistaken and irrelevant. It makes the evidence of progress in the less-developed countries depend upon the growth of the developed countries. Such a comparison conceals the very real progress made by the less-developed countries... It is important that progress should be measured against a country's own past levels. Individuals do not necessarily seek to equal the affluence of the richest man; they usually wish for a higher income than last year. Similarly, the basic measure of a nation's progress lies in the comparison of its present with its own past.

Most two-gap modellers seem to share this view. That is to say, the inability of an LDC to sustain a high rate of growth because of a foreign exchange or a domestic savings gap is usually treated as a transitional problem which will disappear in time if the gaps are filled during the transition by foreign capital assistance. The problem gradually disappears because of upward shifts in the domestic savings function and in the exchange earning and savings capacity of the economy which results from higher levels of per capita income. The optimistic denouement occurs independently of whether income in the advanced countries is growing at a more or less rapid rate during the transition.

This paper has two main purposes plus a modest third purpose. The first is to point out that there is very little empirical or theoretical basis for assuming that higher levels of income result in upward shifts in either the domestic savings function or the exchange earning and

2. OECD, Development Assistance Efforts and Policies: 1967 Review (Paris, September, 1967) pp. 31-32.

exchange savings capacity of the LDCs. The second is to try to show that the trends in the North-South income gap may help explain the persistence of the two-gap problem at different levels of per capita income in the LDCs. The institutional setting assumed in this paper is the mixed economy, where private investment is a major instrument for economic growth and where most consumer goods are rationed by relative prices and the household budget constraint rather than by direct controls and queueing. The setting fits most of the LDCs and is what two-gap analysts generally seem to have in mind. The modest third purpose is to offer an analytic framework which integrates political and economic features of the mixed economy LDCs more effectively than Marx, Rostow or Hubert Humphrey have done. This could be of some use to political development analysts, who do need any help they can get.

1. A Critique of the Dynamics of the Two-Gap Model

The two-gap model is a partial rejection of the relevance of neoclassical-cum-Keynesian orthodoxy for the LDCs, the basic point of disagreement being over the degree of responsiveness of such economies to changes in relative prices. From the neoclassical-Keynesian perspective, structural hang-ups which prevent the reconciliation of domestic, full capacity operation with balance of payments equilibrium are rarities. Adjustments of the level of aggregate demand by monetary-fiscal means plus changes in the ratio of domestic to foreign prices through the exchange rate adjustments should normally suffice to maintain internal and external equilibrium at full capacity.

For two-gap analysts, on the other hand, the abnormal is the rule among the LDCs. Their primary exports tend to have either low price elasticities of demand or low supply elasticities. Lacking a broad and deep array of home activities, there is also a low elasticity of substitution between domestic and foreign inputs in home industry and a low marginal rate of substitution in consumption between domestic and imported goods. The allocative effectiveness of relative price changes, particularly exchange rate adjustments, is thus considerably less than in advanced economies. Since relative price changes also have income and wealth redistributing effects, there are socio-political limits to the size of the alterations of the foreign/domestic price ratio which can be sustained by devaluation, whereas the required alterations for reallocative purposes usually must exceed these socio-political limits. LDC governments tend to be reluctant to push these limits, experience having taught them that there is a high probability that they will either be thrown out of office

or that the relative price effect of the devaluation will be quickly eroded by inflation. The filling of a chronic foreign exchange gap requires, therefore, a deus ex machina -- e.g., foreign capital inflow -- for at least an interim period during which changes in the productive structure to eliminate the gap can be effected.

The two-gap problem is viewed, however, as transitional. In time it gets eliminated by structural changes, and the LDC economies join advanced countries like Great Britain and the United States in being able to solve any balance of payments problem easily and quickly by means of neoclassical-Keynesian policies without cutting domestic output below full capacity. They become, excuse the expression, self-sustained growers.

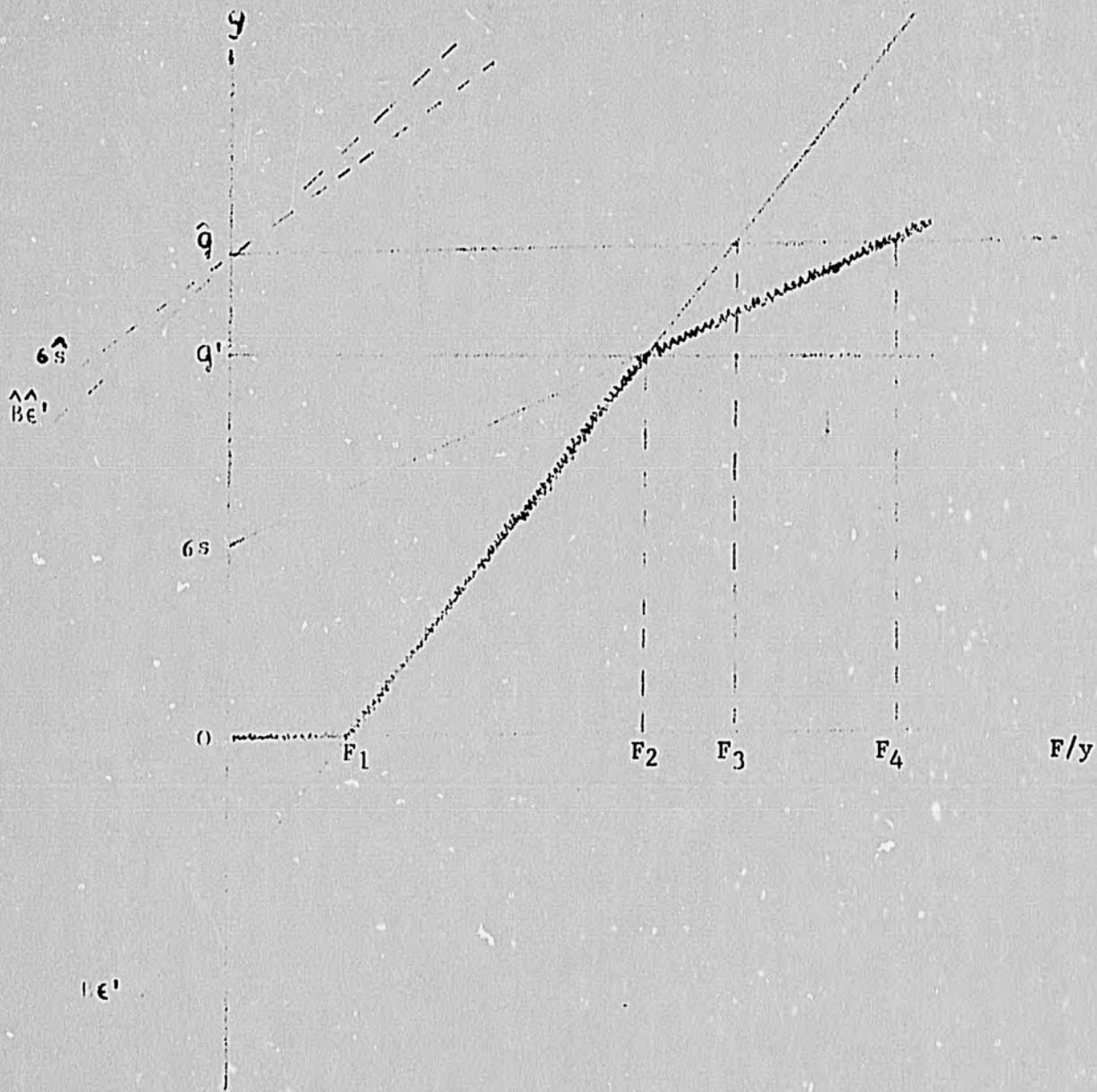
Figure I, adapted from Ronald McKinnon,³ gives the essence of the two-gap model and its dynamics. The g-axis measures the growth rate of income while the F/Y-axis measures the inflow of foreign exchange as a percentage of income through capital flows, transfers and all means other than the sale of goods and services to foreigners. σs is the familiar expansion path of capacity of the Domar model, where σ is the output/capital ratio and s is the propensity to save.

The two-gap model is the Domar model applied to an open economy. In it σ is divided into a domestic and import component so that

$$\sigma = \frac{1}{\frac{1+\alpha}{s\beta}}$$

3. "Foreign Exchange Constraints in Economic Development and Efficient Aid Allocation" The Economic Journal Vol. LXXIV (June, 1964) p. 395.

FIGURE I



Inputs required to install the added unit and B is the unit addition to capacity divided by the imported inputs required to install the unit. Fixed aggregative input-output coefficients imply constancy of relative prices, a fixed final demand mix and no technological progress. These simplifications can be defended on the grounds that they don't distort reality much because the structural characteristics of the economy do not permit much substitution in the short run, while the longer run flexibility of the economy is adequately indicated by shifts in the ϕ s and $B\epsilon'$ functions.

A unit expansion of capacity requires, therefore, $1/B$ units of "expansion inputs," i.e., foreign equipment and other imported items. In the absence of capital inflows, the foreign exchange available per period for expansion imports is,

$$E' = E - 1/mY$$

where E = exports and m = the output/current imports ratio. For our purposes m can also include imports needed to maintain existing capacity as well as to produce output with it. Dividing by Y gives us,

$$\epsilon' = \epsilon - 1/m$$

As Figure I is drawn, ϵ' is negative, ϵ , the export/income ratio, being inadequate to finance the imports needed to maintain and fully employ existing capacity. Excess capacity raises tricky problems for the model which will be discussed later. For the nonce we follow McKinnon in mentioning that such problems exist and passing on.

As Figure I also shows, additional inflows of foreign exchange beyond F_1 permit income to grow, the cross-hatched lines indicating the expansion path of g as F/Y increases beyond F_1 . However, when F/Y exceeds OF_2 , the inflow of foreign exchange loses some of its leverage on the growth rate;

$\left(\frac{0E_1}{0E_2}\right) \left(\frac{g_1 \hat{g}}{F_2 F_3}\right)$ Algebraically this is because $B) \hat{g}$ as long as $\alpha > 0$. Thus

when $s > \hat{g}$, F/Y's leverage is greater than if $s < \hat{g}$. The leverage is less when the $B\hat{g}$ function intersects the g-axis above the \hat{g} 's function, as might occur during an export boom. Economically, the position of the functions in Figure 1 means that up to F_2 the economy can generate the domestic resources for expanding capacity but is unable to realize fully ex ante domestic savings because it can't finance all of the essential imports for carrying out the rate of expansion which the excess domestic savings would allow.

If \hat{g} is the minimum rate of growth needed to offset the rate of population increase and allow a respectable rate of growth of per capita income, then the economy described by Figure I has initially both a domestic savings and a foreign exchange gap which has to be filled by $0E_4$ of foreign capital inflow.

What happens to the functions over time? The optimistic denouement of the two-gap problem postulates a progressive upward shifting of the two functions as the level of per capita income rises until they intersect at \hat{g} on the g-axis. At that point the \hat{g} growth rate can be sustained without additional capital inflows, the economy can simultaneously restore full capacity production and balance-of-payments equilibrium by means of neoclassical-Keynesian aggregate expenditure and exchange rate adjustments, and the aid establishment can close its doors as far as that particular LDC is concerned, unless its presence is required to show the aid donor's flag for other reasons. If the capital inflows had consisted of repayable loans rather than grants, the denouement will be delayed, since the functions will have to shift to a higher intersection than \hat{g} in order

to handle the debt servicing problem. For our purposes this is a dispensable analytic detail, however critical the problem might be in practice for the LDC economy.

Why should the functions shift in this beneficent way? In the case of σ_s , the key assumption is that the marginal propensity to save exceeds the average as the level of per capita income rises over the "relevant range," to use a tautological phrase from our precise scientific lexicon. A rising level is stressed because the only requirement of the rate of growth of per capita income, as far as I can ascertain, is that it be positive. No offsetting shifts are attributed to σ , so that the σ_s function shifts upward and becomes steeper as per capita income levels rise. In Figure 1, $\hat{\sigma}_s$ is at the requisite position for self-sustained growth.

If only the σ_s function shifts upward, the need for foreign capital assistance can merely be reduced to OF_3 , any further reduction of F/Y requiring that BE' also shift upward. Thus the dynamic condition for the complete elimination of the two-gap problem is that $\frac{d(BE')}{dy} > \frac{d(\sigma_s)}{dy} > 0$ over the "relevant range" of Y .

BE' shifts upward because rising income is presumed to be associated with a broadening and deepening of the domestic structure of production. The activities introduced into the economy generate both import substitution and what McKinnon calls vaguely "a rising marginal propensity to export." Within the model's premises the effect of import substitution is fairly clear cut: it increases m , which in turn increases ϵ' , and if there is a substantial build up of the capital goods sector, B may also increase. But for an explanation of the "rising propensity to export," it is best to turn to Linder's version of the model for enlightenment.

Linder's explanation of the rising export propensity begins with his "theory of representative demand." According to this theory,

... a country is most efficient in the manufacture of goods that fit into the economic structure of the domestic market. Inventors, innovators, and entrepreneurs are stimulated by home demand. They are aware of domestic needs and are in sufficiently good contact with the market to be able to develop the products that will satisfy them. Then, the more the demand for a particular product is typical of the economic structure of one particular country compared with other countries, the lower the relative price of this product is likely to be in that country. The production function for it will be more advantageous in that country. For goods not typical of the domestic demand structure, the production function will be disadvantageous.⁴

Since the chief determinant of the demand structure of a country, according to Linder, is its per capita income, there are great differences between the demand structures of the advanced and the developing countries. "These differences mean that goods in demand in advanced countries are atypical for the economic structure of developing countries; their production functions will be disadvantageous in the latter countries. Goods that developing countries are particularly adept at producing are, on the other hand, not demanded in the advanced countries." Thus owing to lack of foreign demand, developing countries cannot export the manufactures in which they are most efficient at producing. "Generally speaking, they are reduced to trying to export manufactures with which they are unfamiliar to markets of which they have no experience."⁵

Initially, therefore, the LDCs have to depend on those primary exports for which they have a strong comparative advantage due to favorable natural resource endowments, while industrial expansion has to be oriented toward the domestic market. As that market expands with rising per capita

4. Staffan Burestam Linder, Trade and Trade Policy for Development (New York: Frederic A. Praeger, 1967) pp. 36-37.

5. Loc. cit.

income, however, the upward shift of $B\epsilon'$ is reinforced by a "rising propensity to export." If Linder's two-stage theory is correct, LDC industrial exporting should be largely concentrated in the higher income LDCs.

II. The Optimistic Denouement in Fact and Theory

The key issue is whether there is strong evidence or a priori theoretical support for the propositions that the G s and $B\epsilon'$ functions of the LDCs normally shift upward in response to rising levels of per capita income. The short answer is that neither observation nor theory strongly backs either proposition. To elaborate we make first a quick "blow of eye" over the comparative landscape and then look at the various underpinnings of the propositions.

1. Un coup d'oeil

The two-gap problem seems prevalent among LDCs of widely varying per capita income. It was, in fact, the very ubiquity of foreign exchange bottlenecks among the LDCs and their relative immunity to orthodox remedies which led to the formulation of the two-gap model. Thus the wide relevance of the model is actually premised on comparative evidence which contradicts the proposition that two-gap difficulties gradually disappear as income rises in the LDCs.

This debater's point can be pushed further by referring to the "success countries" which AID spokesmen like to present to sceptical congressmen as evidence that foreign aid is only a transitional requirement. The "success countries" are a group of LDCs whose growth rates rose substantially in the late 1950's or early 1960's as a result of heavy injections of U.S. aid and which more recently have sustained high rates of growth despite a gradual reduction in the size of the annual aid injections. The observation period is, of course, still rather short, the aid per capita had usually been very high, and continues in a few cases to be high by normal aid standards. A few of these countries also have a large U.S. military presence for strategic reasons

which, in conjunction with special AID investment guarantees, has reduced risks for U.S. investors who have been a major force in sustaining the high rate of growth. But special factors notwithstanding, the functions did shift in the right direction during the period of observation, although few AID economists are probably ready to pin the accolade, "self-sustained grower," on these "success" countries. The interesting point, however, about the success countries is that the majority of them -- South Korea, Taiwan, Iran, Thailand, Pakistan, and (until June, 1967) Jordan -- are in the \$70-\$200 per capita income range.

Meanwhile in another part of the forest where the higher income LDCs abide is a growing group of semi-industrialized countries with severe two-gap problems. Their chronic foreign exchange difficulty has been an inspiration for ECLA's estructuralismo analysis, a country cousin to the two-gap model. Nor is it warranted to resort to the all-purpose "hot Latin American blood" thesis to explain the tribulations of Argentina, Brazil, Chile, Colombia, Uruguay or of other \$200-\$600 per capita income Latin American countries who seem to be joining the two-gap club. Lower income semi-industrialized countries in other continents, e.g., India, Egypt and perhaps Turkey have also been confronted in recent years by serious exchange bottlenecks. Funny things happen to LDCs on their way to the factory.

2. Trends in the ϕ s Function

The statistical evidence, though inconclusive, provides little support for the proposition that the marginal propensity to save rises significantly with higher levels of income over the "relevant range." We summarize the relevant findings of two recent studies, one by

H.S. Houthakker⁶ and the other by Charles Wolf.⁷

Houthakker combines annual per capita data for twenty-eight countries for each year in the period 1952-59, for a total of 187 observations. Unfortunately, the sample includes developed as well as LDC countries, and since the observations are weighted by relative population, the advanced countries in the sample have a larger weight than the LDCs chosen.

Houthakker's results, all relating to per capita values, are:

(a) The ratio of household savings to disposable income does not tend to rise with rising levels of income, although the marginal propensity of households to save does correlate positively with changes in the rate of growth of disposable income.

(b) The rate of private savings (household plus corporate savings) rises slightly with rising levels of income.

(c) The government savings to GNP ratio has a slight tendency to decline with increases in the level of income.

(d) Total domestic savings moves proportionately with income in linear regressions. Log regressions, however, suggest curvilinearity, the total savings ratio rising somewhat at low ranges of income.

(e) The overall short run marginal propensity to save is much higher than the long run marginal propensity to save.

domestic savings with different versions of the income variable, the share of urban income, and imports plus exports. The relevant findings are:

- (a) The income elasticity of domestic savings is less unity.
- (b) Domestic savings correlate positively with the share of exports plus imports in GNP.

Neither study claims to be definitive. Nor does either adequately handle the identification problem, which is particularly serious for single equation estimates of savings when the countries in the sample suffer from two-gapitis. Still, they provide less backing for the hypothesis that marginal propensity to save rises with rising levels of per capita income than for the contrary theories of private savings behavior which postulate a constant long run savings function.

Perhaps such socio-psychological theories of private saving have to be modified by the "up from bare subsistence" type of conjectural growth path which probably underlies the notion that σ_s shifts upward as Lower Slobovia approaches the affluence of Upper Slobovia. Houthakker suggests that this explains the slight curvilinearity of his log regressions. But the physical subsistence minimum can only be dominant in the lowest reaches of Lower Slobovia. As one passes from physical to cultural subsistence standards, one enters the Modigliani-Duesenberry world where the factors dominating the choice at the margin between consumption and accumulation are socially rather than physiologically determined.

This doesn't dispose of the possibility that σ_s could shift upward for other reasons, e.g., improvements in tax collecting machinery, shifts in income distribution, or changes in the capital intensity of output.

It merely suggests that such changes are largely uncorrelated with income per capita. The relative growth of the corporate sector may also raise the marginal propensity to save of the private sector, although the logic of life-cycle savings theories is that the increases should be transitory.⁸ Houthakker's finding that the marginal propensity to save of LDCs rises when their growth rate is accelerating, fits the life cycle and/or demonstration effect theories of household savings but could also provide some basis for projecting a rise in the average propensity to save. These theories predict that the propensity should fall back to the average again, if the growth rate levels off at \hat{g} , but if \hat{g} is a higher rate than previously experienced, the average propensity might settle at a higher level. Testing this possibility requires correlating savings rates with long term rates of growth as well as with levels of income, something which to my knowledge has not yet been done.

There is also some indication that \hat{c} may not be a long run constant in the LDCs. The long run constancy of the output/capital ratio is in any event a disputed question in the economic literature, the evidence from advanced countries suggesting long cycles for the overall output/total physical capital ratio with a rising secular trend and long cycles with a falling secular trend for the output/reproducible capital ratio.⁹ The assumption of long term constancy is based, therefore, partly on a

8. If corporations save a higher proportion of their profits than unincorporated enterprises, the savings rate of shareholders enjoying capital appreciation should shift downward because of the wealth effect. Even if it is airy speculation to assume that the two effects cancel each other, the emphasis on the beneficent effect of corporate savings suggests that mixed economies stressing industrialization should, *caeteris paribus*, have a higher savings rate than countries emphasizing agricultural development.

9. Simon Kuznets, Modern Economic Growth, (New Haven: Yale University Press, 1966) pp. 75-85.

reluctance to read too much into fragmentary statistics and partly on the premise that in advanced countries technological innovation responds strongly to relative price movements and is an important mechanism for offsetting the depressing effect on the output/capital ratio of a rising capital/labor ratio. This mechanism, however, is not likely to be nearly as strong in LDCs borrowing their new technology from advanced countries whose changing pattern of relative prices is quite different from that of the LDC borrower. The main mechanism typically available to the LDCs for adjusting technology to factor prices is to alter the product mix rather than the mode of production for any given product. The output/capital ratio is likely therefore to rise in LDCs that concentrate on less capital-intensive products and to fall in economies which rapidly broaden their output mix, as LDCs relying on ISI tend to do. ECLA studies which indicate that there has been a downward trend in the output/capital ratio of the ISI countries of Latin America in the post-war years support this hypothesis, although the evidence is fragmentary and the downward trend may reflect growing excess capacity as well as technological choice. Thus if LDCs in accordance with Linder's representative demand theory typically must go through an ISI phase, this phase is likely to be marked by a drop in the value of δ , which further decreases the likelihood that δ s will shift upward.

Finally, Leibenstein has collected evidence that the incremental output/net investment ratio is positively correlated with the growth rate in countries with widely different levels of per capita income.¹⁰ Whether this is because excess capacity is less in the fast growers or because of

10. Harvey Leibenstein, "Incremental Capital Output Ratios and Growth Rates in the Short Run" The Review of Economics and Statistics XLVIII (February, 1966) 20-27. Leibenstein's results are based on post-World War II data for eighteen LDCs and developed countries.

some positive relationship between growth rates and productivity is not clear. Either possibility reinforces the conclusion that θ s may rise while the growth rate is accelerating but will slip down again when the acceleration ceases.

3. Trends in the $B\epsilon'$ Function

The key to eliminating the two-gap problem, however, is what happens to the foreign exchange gap. Closing this gap requires $d(B\epsilon')/dy > d(\theta s)/dy$ until there is no foreign exchange deficit at \hat{g} growth rate. The critical question is, therefore, whether $d(B\epsilon')/dy$ will rise strongly with rising levels of income over the "relevant range."

Upward shifting of $B\epsilon'$ results either from import substitution, which may increase B or ϵ' , and/or from a rising ϵ , which would increase ϵ' . I believe it's correct to say, however, that neither time series studies for various advanced countries nor cross-country regressions show any significant secular tendency for ϵ to rise with rising levels of income. Similarly, there is no evidence of a sustained rise of expansion imports as a percentage of income, that is of ϵ' , with rising levels of income.¹¹ There is some evidence, however, that B rises with income, both Hoffman's historical series and Chenery's cross-country regressions¹²

11. Maizels finds a negative relationship between the direct import content of gross investment and income per head in his sample of advanced countries plus LDCs. However, the direct input content of investment is more strongly correlated (negatively) with population size, than with per capita income. A. Maizels, Industrial Growth and World Trade (Cambridge U. Press, 1963) pp. 266-68.

12. W.G. Hoffman, The Growth of Industrial Economies tr. from the German by W.O. Henderson and W.H. Chaloner (Oceana, 1958).
Hollis B. Chenery, "Patterns of Industrial Growth" American Economic Review (September, 1960) pp. 624-654.

suggesting a tendency for per capita domestic capital goods output to rise more rapidly than per capita income. Since $\sigma = \frac{1}{\frac{1}{\alpha} + \frac{1}{\beta}}$, this

tendency for α to fall is not a sufficient condition for B to rise: there could be an offsetting decline in σ , but for advanced countries at least there is no strong evidence for such a decline.

Regressions of this type, in any event, tell us little about the two-gap denouement in the LDCs. In the first place, the evidence for a long term rising trend of $B\epsilon'$ is derived from either advanced countries or from cross-country regressions which include the advanced countries. This assumes the LDCs will pass through the same sequence of structural changes as did the advanced countries. A given level of Y_p will map onto approximately the same values for the key structural parameters of the economy regardless of differences in historic time and, therefore, in technological context. Because Chile's Y_p in the 1960's is about the same as Great Britain's in the 1870's, the two economies should have similar values for σ , s , B and ϵ' , give or take some deviation because of differences in natural resource endowment and population size. And this should also be true of other time-crossed comparisons: the Age of Jackson with the Age of Kubitchek, Guizot's France with Nasser's Egypt etc. But we must also note that for the past 150 years today's LDCs have always been LDCs, technological borrowers from advanced countries that, with few exceptions, have been the originators of new technology throughout the period. Regressions heavily weighted with advanced countries have to assume that the originator-borrower technological relationship or any other dependence of LDCs on changes initiated in the advanced countries does not cause any systematic deviation of B or other structural

parameters of the LDCs from trends traced out by the advanced countries. This could be so, although we suggest in the next section reasons why it may not be so. What we cannot do is conclude from the regressions alone that it is so. We need independent evidence to validate the case that the LDCs will succeed in doing what they have yet been unable to do -- cross over the exchange gap into the promised land of self-sustained growth.

A second difficulty concerns the identification problem. Suppose the sample were made up only of LDCs of varying income levels. For each level there would be some LDCs with virulent foreign exchange shortages and others in a comfortable exchange condition. A reasonable guess is that BE' would show little positive correlation with the level of income in such a sample. This could be the partial result, however, of a statistical bias. Suppose the LDCs divide into (1) those with a severe exchange gap and no tendency for BE' to rise with rising income; (2) those with a narrowing gap because of effective ISI or a "rising propensity to export;" and (3) those with no gap because of factors independent of the level of income and the economy's economic structure: e.g., an oil discovery or a rise in primary export prices. If the prior condition in all three cases had been $BE' < \sigma_s$, any rise of E , m , or B , for whatever reason, would exert a powerful leverage on Y . The most visible result statistically would be a higher growth rate, and this would in turn dampen the rise of ϵ and ϵ' by rapidly raising the denominator of these ratios. Only if the prior condition for the countries in the sample had been $BE' > \sigma_s$, would a "rising propensity to export" or other types of upward shifts of BE' be picked up readily by the cross-country regressions, because the

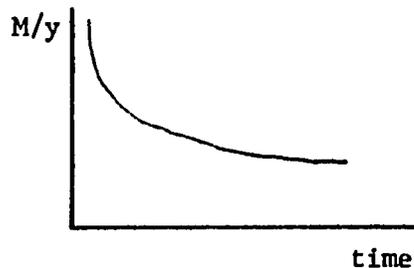
savings gap would then be dominant and the growth rate would be only moderately responsive to upward movements of E , m , or B .¹³

Of course, if the trends hypothesized for each of the three classes of LDCs were to continue, a growing number of class 2 countries would in time close their exchange gap and successive cross-country regressions would gradually reflect the greater independence of the deviations of $B\epsilon'$ from those of income. But if primary export bonanzas among the LDCs come and go as they have in the past and the exchange saving capacity of various class 2 countries diminishes as they push ISI strategies too hard and long, then it would be unlikely that successive regressions would uncover much more information than the initial ones about the relation between income and $B\epsilon'$. As a non-econometrician, I have naive confidence that skillful econometricians will be able to overcome this identification problem, but unless they do so, the regressions are not going to be very informative.

One of the difficulties which will harass these econometric efforts is that the looser evidence indicates that the LDCs foreign exchange gap is not an initial condition which gradually disappears, but a recurring phenomenon. The oscillations caused by fluctuations in primary export earnings need no elaboration, but those associated with ISI perhaps do.

13. If foreign assistance has been filling the exchange gap, for the countries in the sample, "a rising propensity to export" would be more easily detectable, since the increase in earned foreign exchange would presumably lower foreign assistance rather than raise the growth rate.

ECLA studies of ISI in Latin America indicate that the average import coefficient for ISI countries takes the following schematic time path, with the flattening out of M/y usually associated with a slowdown in the economic growth rate.



Accepting this as a descriptive finding, let us trace out its effect on the foreign exchange gap. To simplify matters, assume that imports equal exports and both grow at a constant rate $\dot{E}/E < \hat{g}$, where \hat{g} is the minimum desired growth rate, and that B is constant. This means that $d(E/Y)/dt < 0$, when $\dot{Y}/Y \rightarrow \hat{g}$, so that $d\epsilon'/dt > 0$ requires that $d(m/E)/dt > 0$. That is, to sustain growth rate \hat{g} , the reduction in operations inputs required per unit of output must save more foreign exchange than the amount that exports add to the capacity to import.

Latin American ISI experience, however, indicates that ϵ usually falls significantly only while the share of consumption imports is being cut back and that the operational imports share shows no tendency to fall. Thus the two phases of ISI popularized by ECLA. When the consumer imports share is being cut back, ϵ' rises and the economy is able to obtain the expansion imports needed to sustain the growth rate, \hat{g} . This "easy phase" corresponds to the steeply declining section of the M/Y curve, and, judging by Latin American experience, is of relatively brief duration: usually no more than a decade. When the consumer import share

ceases falling, ϵ' falls back, since $d(m/E)/dt \leq 0$. The prevailing situation is now $\dot{Y}/Y \leq \dot{E}/E < \hat{g}$, with the exchange gap becoming visible whenever the economy tries to grow at rate \hat{g} .

This outcome could, of course, be modified if ISI in capital goods raises B . But as indicated previously, $d(B/d)/dt > 0$ is not a sufficient condition for B to rise, since \hat{O} may fall as ISI efforts continue, which ECLA suggests has been the case in Latin America. Thus $d(B\epsilon')/dY > d(\hat{O}s)/dY$ is not a condition which ISI seems able to sustain through time. When the consumer imports share stops falling, the inequality tends to reverse itself.

Sustaining an upward shifting $B\epsilon'$ depends, therefore, on the emergence of a "rising propensity to export." As regards a rising propensity to export primary products, no simple generalization seems warranted. Trends in many primary exports from the LDCs have little to do with prior structural changes associated with rising income, most requisite inputs being provided by Mother Nature and foreign investors. Expanding the physical infrastructure, education, and other improvements associated with rising income may broaden the array of primary products which can be profitably exported, but rising population and income will also divert exportables to domestic use. And hovering over the outcome are trends in demand for primary inputs of the advanced countries as affected by their changing technology, growth, and commercial policies.

The emergence of a rising propensity to export largely depends, therefore, on the likelihood of industrial exporting following hard on ISI, as Linder suggests will occur. To date, however, Linder's two-stage pattern is not very evident. The LDCs which have expanded industrial exports substantially in the post-war period have been mainly countries

with lower per capita incomes and a relatively less developed industrial sector than the more heavily industrialized LDCs. For example, rank correlations performed on a sample of twelve LDCs listed by Maizels,¹⁴ gives a correlation of only +0.22 between manufacturing output per head and the share of manufactures in total exports. Moreover, when semi-refined primary exports are excluded from manufacturing, the rank correlation turns negative to -0.24. The way to industrial export markets is about as direct and well-marked as the roads of Greater Boston.

III. An Explanation of the Persistence of the Two Gaps

It is unlikely that the two-gap problem persists with rising income simply because as the economy's productive capacity is broadening and deepening, the favorable effect is countermanded by increasingly bad economic policies. An "increasing propensity to louse up the economy" as income rises would be an interesting notion if there were serious evidence that major adverse shifts in economic policy occur with rising income. The reverse, however, seems to be the case. The problem is that LDCs tend to hang on to the same broad policy lines which worked well at an earlier phase despite the later loss of effectiveness of these policies. Policywise, as Benjamin Fowler would put it, the explanation of the persistence of two-gap problems has to account for the reluctance of the LDCs to shift from outmoded lines of policy.

1. The excess capacity problem

A useful entree is to take up the difficulty two-gap models have in

14. The sample consists of 1955 data for: India, Argentina, Brazil, Chile, Colombia, Mexico, Turkey, Burma, Egypt, Pakistan, Philippines and Thailand. Data from A. Maizels, Industrial Growth and World Trade, Table 3.2 p. 59.

explaining excess capacity. Suppose the capacity to import is unable to provide simultaneously the imports needed to sustain full use of existing capacity and a rate of investment equal to the rate of ex ante domestic savings. Under these circumstances, according to Linder, rational economic policy calls for priority to be given to operations imports for maintaining full use of existing capacity rather than to expansion imports for adding to capacity. Moreover, this policy, according to Linder, would also conform to private investment decisions, since "there should be little interest in expanding a production apparatus that cannot be fully used."¹⁵

But what Linder has overlooked is the other gap. If investment falls below ex ante savings, a deflationary gap is created which requires a cutback in income to eliminate. In fact, if the slope of the $B\epsilon'$ function is greater than that of the S function, as in Figure I, there is no stopping short of zero income. There has to exist a short-run savings function with a steeper slope than $B\epsilon'$ to halt the precipitous decline of income. Fortunately, the likelihood of such a short-run function is validated by contemporary savings theory. We can therefore be confident that income will not fall to zero.

But the central point is that even if an inadequate capacity to import lies at the root of the excess capacity, its severity is magnified by the deflationary savings-investment adjustment. The more closely rational policy conforms to the conventional wisdom that global non-discriminatory monetary-fiscal policies should be used to eliminate excess demand for foreign exchange, the more will excess capacity be augmented

15. Linder, op. cit. pp. 65-66.

by a lack of effective demand, a relationship which IMF advisory teams seem incapable of learning. Doubtlessly, the input-output parameters are a bit more flexible in the short run than is assumed for analytic simplicity by the two-gap model. But they can't be very flexible or else the IMF cure of deflation plus devaluation would work, something which neither nature nor the two-gap model would allow.

To the government and to businessmen excess capacity, even when the foreign exchange gap is dominant, appears to be primarily the result of inadequate effective demand.¹⁶ And they are usually partly right in believing this. Public peace and tranquility, perhaps the very survival of the government, therefore, impel efforts to reflate effective demand; hence the stop-go oscillations and the rising prices characterizing the output path of LDCs with chronic deficiencies in the capacity to import. Hence also the difficulty under these circumstances of stabilizing the price level without virtually collapsing the economy. For underneath the expectational stimuli and income shares struggles which accelerate inflation is the hard core imbalance between the capacity to import and the flow of imports required to operate the producer and consumer goods sectors simultaneously at full capacity. Efforts to reflate effective demand expose import bottlenecks and force exchange depreciation which inject new inflationary fuel into the economy. It may seem strange to talk of a deflationary gap in countries with 10 to 30 per cent annual inflation. But if we lean over from the vertical so as to eliminate from our gaze the rising price trend, the deflationary gap will become visible.

16. See, for example, the replies of Chilean firms in Utilizacion de Capacidad Instalada en 42 Empresas Industriales (Instituto de Economia, Universidad de Chile, 1963) Publicacion No. 56.

A large array of dispensible consumer imports mitigates these problems. Consumer import cutbacks allow sufficient operational and expansion imports to maintain full use of domestic capacity and the requisite rate of investment. The consumer import restrictions will also divert consumer demand to domestic substitutes and to construction and may even encourage higher ex ante savings by businessmen, thus dampening the inflationary consequences of the restrictions. This flexibility of adjustment disappears, however, when dispensible consumer imports have been largely eliminated, at which point excess capacity becomes a chronic phenomenon and inflation is no longer associated with impressively high growth rates. The changeover corresponds to the shift from ECLA's easy ISI phase to the tough phase.

These complicating characteristics of excess capacity tend to be glossed over when the economy is treated, as Linder does, as though it were one big firm confronting an external constraint. One big firm may not be too bad a simplification for macro-analysis of a neoclassical economy with instant reflexes, if such an economy exists. But for a two-gap LDC, the income and demand redistribution required to keep the economy producing at the highest rate consistent with the foreign exchange constraint at times boggles the imagination and may far exceed the capability of the policy instruments normally at hand in a mixed economy for economic manipulation. In this regard the centrally planned socialist economies probably have an advantage. Despite inter-departmental conflicts, they can operate more like one big firm, shifting capital gains and losses from individual activities to the community at large, exporting if need be at bargain prices to finance requisite imports, allocating

strawberries to consumers without cream or cream without strawberries as the case requires. The advantage is only relative. As socialist economies decentralize and allow a higher proportion of gains and losses to remain with the individual enterprise, it becomes more difficult for them to minimize excess capacity -- as Yugoslavia currently demonstrates whatever the favorable consequences of decentralization may be for long run efficiency. Conversely, designs of various sets of finely tuned taxes and subsidies which could also minimize excess capacity in mixed economy LDCs are on the economist's drawing board, but whether these would work in practice remains to be tested.

Thus excess capacity in the LDCs coexists with an oscillating but always positive rate of investment, a phenomenon which has moved Sidney Dell to observe, "One of the paradoxes about underdeveloped countries is that, while they obviously need many more factories and industries, they do not fully utilize the industrial capacity they already have."¹⁷ A further paradox is that policies which stimulate the investment rate and aggregate demand in order to minimize existing excess capacity perpetuate the excess capacity problem into future periods. The reason is that the prevailing policies for investment inducing are more effective in promoting industrial investments to supply the home than the foreign market. This bias has to do with the characteristics of the private investment function of LDCs, as we shall try to show.

2. Investment Behavior

In mixed economy LDCs, most industrial capacity is privately owned and private investment is a key instrument for sustaining aggregate demand

17. Sidney Dell, Trade Blocs and Common Markets p. 170 as cited by Linder, op. cit.

and generating economic growth. An obvious question is, why should there be any interest on the part of businessmen "in expanding a production apparatus that cannot now be fully used"?

The obvious answer is that even if export markets appear too forbidding to crack, opportunities for producing new products for the domestic market -- backward linkage items and new consumer goods -- may be profitable, or public policy can make them profitable. Excess capacity is thus distributed unevenly in the LDCs. New industrial activities will be operating close to full capacity or with premeditated excess capacity because the lumpiness of the technology requires temporary overbuilding, while the bulk of the unpremeditated excess capacity will be concentrated in older activities. But there is more to the story. Why the bias of industrial investment toward supplying the domestic rather than the export market? To answer this we need to look first at the private investment function in the LDCs.

Formally, private investment in the LDCs, as in advanced countries, is an increasing function of the mean expected rate of return and a decreasing function of the size of variance below the mean. What distinguishes the LDC function is that, for opposing reasons, the variance to the national and the foreign investor appears larger than it is for most similar activities in the advanced countries. To explain the higher risk appraisal of the national investor, it is not necessary to bring in special socio-psychological hypotheses, such as Latin American hot-blooded caution or Hindu other-worldliness. It is enough that the past experience from which profit and risk estimates derive is less informative to the LDC investor than is the experience on which estimates

by investors in the same activity in advanced countries are based. The LDC investor has to consider the prospects of success in transplanting a relatively unknown technology and product in one gestalt package to a quite different production and marketing environment. Nor does he have near at hand the wide array of service firms who, specializing in the particular technology, can smooth out bugs and modify specifications to meet local requirements and thus increase confidence that initial errors in the transplant operation can be corrected readily. To the advanced country investor, on the other hand, for whom these externalities are all about, the new technology and product usually appear as incremental advances, linked to past experience.

This asymmetry goes back to the dawn of modern industrialization when the British industrial innovators emerged out of putting-out merchant-manufacturing to design and custom build their innovative equipment, well before a separate capital goods industry began to emerge to supply the growing market for specialized industrial machinery. Continued incremental improvements sustained the British comparative advantage over the continental countries in key industries despite higher British wages, long after restrictions on machinery exports were lifted and European countries could freely import the latest British machines and parts at the going British market price plus freight. Access to the latest machinery via importing was not enough to allow the west European countries to overcome their technological gap and to induce substantial industrial investment. They had to make, as Gerschenkron has shown, significant institutional innovations to facilitate industrial capital accumulation and followed a different sequence of industrialization than had Great Britain

in industrializing and narrowing the technological and income gap.¹⁸ But the economic distance between Great Britain and her continental neighbors was never enormous. Felix's Constant indicates that the income ratio was less than four to one, while the technological gap did not extend across the board. France, Belgium, Germany and Holland were important nineteenth century technological innovators in their own right in a number of industries. Given the much greater economic distance separating twentieth century LDCs from the advanced countries, the risk variance of the LDC investor must be considerably greater in relation to the investor in twentieth century advanced economies than was that of the nineteenth century continental investor in relation to his British counterpart.

This incremental view of technological innovation, which corresponds to Arrow's "learning by doing" analysis,¹⁹ provides a more convincing explanation of the accelerating pace of technological progress in advanced countries than Schumpeterian heroics. If roughly correct, the risk variance for the LDC investor should decline for investments in established activities with fairly well-developed backward and forward domestic linkages, but would remain high for investments in newly imported lines of products and processes.

18. Alexander Gerschenkron, Economic Backwardness in Historical Perspective (New York: Frederick A. Praeger, 1965).

19. Kenneth Arrow, "Economic Implications of Learning by Doing" Review of Economic Studies XXIX (June, 1962).
For an excellent discussion of the incremental character of technological progress in the capital goods industry along "learning by doing" lines, see Nathan Rosenberg, "Capital Goods, Technology, and Economic Growth," Oxford Economic Papers (November, 1963) pp. 217-227.

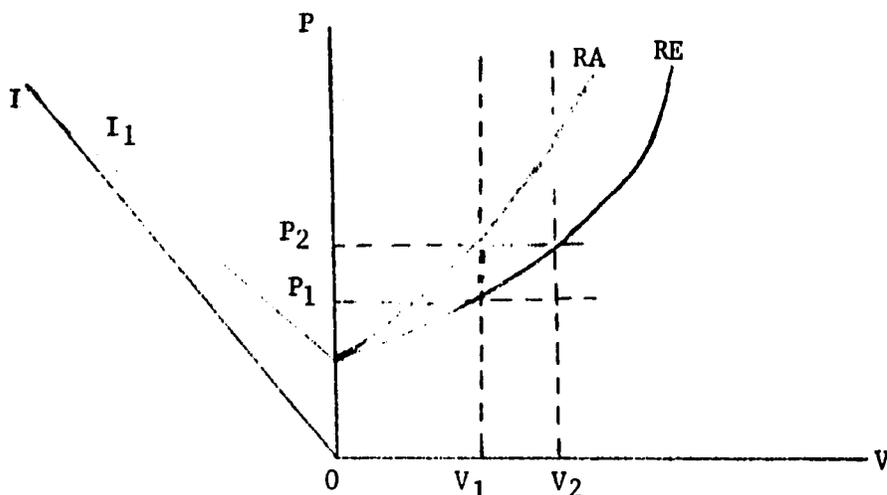
The high risk variance for the foreign investor exists for opposite reasons. He has detailed experience with the productive process and with requisite marketing and huckstering techniques out his home country activities. What he lacks is intimate familiarity with the LDC product and factor markets and, unless the LDC is an open or covert colony, with where and how to manipulate the levers of political power in order to defend his assets. Once established, familiarity will breed less contempt in one's ability to appraise new investment possibilities. But how far each established foreign investor branches out is usually limited by the range of products he produces at home, while new investors have to repeat pretty much the same learning process. Hence LDCs relying on a continual inflow of foreign investment require a stream of new investors each with high initial risk variance. The flow of foreign investment has to be wooed by offers of protective devices and by creating "a politically favorable climate for foreign investment" so that the foreign firm is assured that the juridical and political levers for protecting its assets are in place and accessible to it.

There are, of course, other dimensions to the relationship between risk and investment; most notably, the consequence of guessing wrong. What is penny ante gambling for a huge multinational corporation contemplating setting up a subsidiary in some LDC may be a life or death matter for the LDC investor with more limited financial resources. The marginal rate of substitution between the mean expected profit rate and the variance may thus be even lower for domestic than for foreign corporate investors in the LDCs. The essential point is that both are lower

than the marginal rate of substitution of investment in the advanced countries.²⁰

Measures that mainly reduce risk tend, therefore, to be more effective for inducing private investment in the LDCs than devices which

20. The marginal rate of substitution between the profit rate and the risk variance would also be low under socio-psychological risk averter hypotheses of the "Latin American hot-blooded caution" type. Schematically, the alternative can be presented as follows.



The p-axis measures the mean expected profit rate, the V-axis, the variance around the mean, and the I-axis, the private investment rate. For a given rate of investment, OI_1 , RE is the trade-off function between the mean profit rate and variance for domestic investors in the advanced country as well as in the LDC under the separate but equal cupidity thesis. However, OV_1 is the normal variance in the advanced country, and OV_2 in the LDC, so that OP_1 is the mean expected profit rate required to induce the OI_1 investment rate in the advanced country, whereas OP_2 is required in the LDC. The marginal rate of substitution between profit and risk under this thesis is lower in the LDC only because the variance is greater. RA, on the other hand, is the trade-off function if the LDC investors are greater risk averters than domestic investors in the advanced countries for any given risk variance. Again an OP_2 mean expected profit rate would be required to induce an OI_1 rate of investment.

It would be extremely difficult to devise decisive tests for determining which hypothesis is valid, so that perhaps the operative criterion for choosing between the two is linguistic: whether one likes to converse in Economese or Sociologese. Practically, the consequences are the same; the marginal rate of substitution between profits and risk is lower in the LDCs than in the advanced countries. Hence policies which are biased toward reducing risk are relatively more effective investment inducers in the LDCs than policies biased toward raising the profit rate, while this is less true in the advanced countries.

concentrate mainly on increasing expected profit rates. Both types of measures are, of course, used, and most of them tend to affect both risk and the mean expected profit rate, so that the differences in impact are questions of degree. But tax exemptions, which work mainly on the expected profit rate, are generally held to be particularly ineffectual in LDCs, whereas import protection, restrictions on competitive entry, and concessionaire type foreign investment arrangements that reduce risk more than they generate abnormally high mean expected profit rates have been notably more effective in inducing industrial investment.

The stress on risk reducing inducement policies, which conforms in a general way with Hirschman's views of an appropriate investment strategy for the LDCs, imparts, however, a substantial bias toward industrial investment for the domestic market -- toward ISI. Policy instruments for inducing ISI investment, in which the private costs of errors are covertly socialized through higher prices for consumers and for user industries, are relatively easily managed administratively and politically in the LDCs, while socialization of private risk of industrial exporters is difficult to invoke. Efforts by the semi-industrialized LDCs to promote industrial exporting have concentrated, therefore, on raising the expected profit rate from such exporting by increasing the ratio of foreign to domestic industrial prices via open devaluation or by covert selective devaluation through drawback and other tax subsidy schemes. These standard and fairly successful policy instruments in the advanced countries have, however, been only marginally effective in the LDCs with their lower marginal rate of substitution between profit and risk. What is often overlooked by their proponents is that there is an asymmetry between the effectiveness of devaluation and of import tariffs

or quotas as investment inducers. Each tries to raise one set of prices relative to another, but whereas in the case of import tariffs and quotas a substantial reduction of risk usually accompanies the elevation of the mean expected profit rate for ISI investment, devaluation to induce investment in industrial exporting merely raises the expected profit rate but does not reduce the risk variance. Schemes for socializing the private risk of industrial exporting can no doubt be devised, although the conventional wisdom of economists has been an intellectual obstacle to such scheming. The major obstacles, however, have probably been administrative and political. Such schemes require a higher degree of administrative sophistication to implement effectively than import protection, and it is more difficult to get political acceptance for visible schemes to socialize private export risks than for the disguised socialization which occurs under systems of protection and which effectively encourages ISI.

Macro-economic policy in the two-gap LDCs has, therefore, to solve a double problem; the short-term problem of offsetting a chronic deflationary gap and excess capacity, which it tries to meet by keeping up the rate of investment, and the long-run problem of resource reallocation in order to overcome the dominating foreign exchange gap. Unfortunately, because of the risk bias toward ISI, the two objectives soon become mutually incompatible. When ISI loses most of its capacity to raise $B\epsilon'$, the ability of the ongoing policies to solve either problem is weakened. The growing severity of the foreign exchange gap narrows the limits within which the deflationary gap and excess capacity can be reduced by inducing a higher ex ante rate of investment. Conversely, the higher degree of

chronic excess capacity, plus various cost and scale problems not yet touched upon, weaken the ability of standard ISI inducement instruments to sustain a high rate of ISI investment.

There are, to be sure, possible combinations of policy instruments for reconciling the two objectives. But these don't become politically and administratively easier to implement merely because the level of income of the economy has risen. On the contrary, LDCs with the major two-gap hang-ups are heavily represented by semi-industrialized countries in the higher income range of the LDCs. There is no more reason to suppose that a higher level of per capita income necessarily improves the political-economic conditions for solving the foreign exchange gap than that it improves the conditions for solving racial tensions or the smog problem.

3. The Exhaustion of ISI

The double demand on macro-policy, that it reduce the deflationary gap in a hurry while whittling away at the foreign exchange obstacle in order to sustain a high growth rate, gives a different perspective on the controversy over whether opportunities for ISI tend to run out after a time, as ECLA suggests. ECLA's wording of its case does leave something to be desired, particularly wording which implies what Hirschman calls the "naive" or the "semi-naive" model of ISI

exhaustion.²¹ The question is whether the validity of ECLA's intuition can be salvaged by changing the wording. I believe it can.

Hirschman's main criticism of ECLA's ISI exhaustion thesis is that it depends on the notion that "higher stage" backward linkage ISI is associated with larger minimum efficient scale requirements per plant, a proposition which he challenges. The challenge consists of citing illustrations of "higher stage" linkages, e.g., machine tools, for which the scale of plant in advanced countries is relatively modest. Hirschman admits this doesn't dispose of ECLA's alleged broad trend toward higher scale requirements but finds the counter-examples sufficiently persuasive to justify looking elsewhere for obstacles to backward linkage ISI. The "elsewhere" is the political resistance of established activities to government sponsorship of backward linkage investments which would force them to shift to domestic suppliers. Only some of the objections of the industrial establishment, according to Hirschman, relate to fear that the domestic substitutes would be of higher cost or poorer quality. Industrialists also fear that a ready domestic source of supply of inputs

21. The "naive" model implies that there is an initially fixed stock of potential ISI opportunities equal to the import items which the economy had been importing in sufficient volume to support an economic scale of domestic production. These opportunities get ticked off one by one until they are all gone. The "semi-naive" model recognizes that income and aggregate demand rises as a result of this ISI, thereby creating new ISI opportunities, particularly for backward linkage investment. But it also posits an upward trend in the minimum economic scale of production as backward linkage reaches the "higher stages," and this gradually diminishes the range of feasible ISI opportunities created by a given increment of income. The "semi-naive" model is what Hirschman associates with ECLA. See Albert O. Hirschman, "The Political Economy of Import-Substituting Industrialization in Latin America" Quarterly Journal of Economics LXXXII (February, 1968) 1-32.

will make it easier for others to enter into production of their products.²² The "exhaustion" of ISI, therefore, has mainly to do with political resistance rather than rising costs and inefficiency. With his usual devious optimism, Hirschman suggests various ways of sneaking around, under and over the political resistance so that ISI can continue.

Hirschman concentrates solely on investment inducement, assuming apparently that if ISI investment is kept up, it will also ease the foreign exchange gap by raising BE' . Meanwhile, the effective rate of protection school follows a contrary tack, which implies that diseconomies of small scale are not a serious obstacle to inducing ISI investment. The difficulty rather is that too much of it occurs with backward linkage ISI, so that low and even negative domestic value added in time prevents ISI from raising BE' . In that case, maintaining the rate of investment via ISI will in time add mainly to excess capacity in the economy. Both these contradictory appraisals of the ISI exhaustion problem obviously cannot be correct. In fact, we would suggest that each is only partly right.

The evidence is against Hirschman and strongly on the side of the effective rate of protection school's view that many ISI products have very high comparative costs. Moreover, the relatively high cost products tend to be heavily concentrated in the "higher stage" categories: machinery, transport equipment, petro-chemicals, special alloys etc.²³ There

22. Hirschman, op. cit. pp. 17-18.

23. The domestic/international industrial product price ratios in my "Beyond Import Substitution" paper tend to support this. Hugh Schwartz's price data on the Argentine metallurgical industry, covering an earlier post-war period, also shows a very wide relative price range, with the more complex products in the upper range. See Hugh Schwartz, "The Argentine Experience with Industrial Credit and Protection Incentives, 1943-1958" (Ph.D. Dissertation, Yale University, 1967).

is also some direct as well as presumptive evidence that plant size deficiency is an important reason for high prices and costs in "higher stage" industries in the LDCs.²⁴

The scale problem, however, is not limited to size of plant; it also encompasses the Adam Smith-Allyn Young "specialization is limited by the extent of the market" aspect of scale. Nathan Rosenberg, surveying the capital goods industry, points out that the large plant industries like chemicals, iron and steel, and transport are also served in the advanced countries by a very large complex of relatively small satellite suppliers, each specializing in a very narrow range of equipment or services.

The obvious advantage of this arrangement is that there is an important learning process involved in machine production, and a high degree of specialization is conducive not only to an effective learning process but to an effective application of that which is learnt. This highly developed facility in the designing and production of specialized machinery is, perhaps, the most important single characteristic of a well-organized capital goods industry and constitutes an external economy of enormous importance to other sectors of the economy. But for such a pattern of specialization among firms to develop, capital goods producers must be confronted with an extremely large demand for their output.²⁵

By rapidly widening the final product mix in small domestic markets, ISI militates against the development of these "scale economies of specialization." The modest plant size associated with many facets of machine tool production is not, therefore, persuasive support for Hirschman's argument that ECLA overstates the diseconomy of small scale barrier

24. See, for example, the detailed World Bank comparative studies of the automotive, electrical equipment and machinery industries in the LDCs.

25. Rosenberg, *op. cit.* p. 220.

to backward linkage ISI. The fact that the domestic market may be large enough to support efficient home production of general purpose machine drills and lathes is hardly a sufficient basis for concluding, for example, that the mini-sized auto industries of India, Brazil or Argentina can induce pattern shops, tool and die plants, and the thousands of other auto parts suppliers needed for a fully integrated domestic industry except at great cost -- as their attempt to do so has amply shown to be the case.

The effective rate of protection school, on the other hand, seems off base in implying that under systems of heavy investment protection, negative domestic value added is the operative limit to backward linkage ISI in the LDCs. The econometric demonstrations that negative value added is a widespread phenomenon in the LDCs assume that the export and domestically oriented activities compete strongly for scarce domestic operations inputs. If foreign exchange, however, is the major scarce factor, whereas there is underutilization of domestic factors, the assumption of strong intersectoral competition has to be modified. The competition is mainly for expansion imports, since ISI policy rarely tries to divert operations imports from the export sector. What's at issue, therefore, assuming that the export sector is straining to expand capacity, is the relative efficiency of new export vs. ISI investment in saving or earning foreign exchange. With ISI investment having at most a slight adverse effect on the operating costs of existing export activities, the appearance of negative value added would depend almost entirely on the direct and indirect foreign exchange costs of building and operating the ISI plant, exceeding the foreign exchange saved over the life of the plant. Such cases probably do exist, but it is unconvincing to hang the explanation

of the practical limits to backward linkage ISI on rarities.

The effective rate of protection view does not, therefore, convincingly account for the levelling off of M/Y , the equivalent of a fixed BK' . There is need for Hirschman's view that the effective barrier is institutional rather than technological, although the view has to be amended to account for the existence of high cost under-scale backward linkage ISI. There is also need for an alternative technological explanation of the levelling off of M/Y .

Risk variance and excess capacity under ISI provides a plausible reconciliation of Hirschman's institutional barrier with the existence of high cost backward linkage ISI. The first point to note is that the ability of relative prices to signal specific import shortages, and consequently backward linkage ISI opportunities to the private investor, is muddled by the fact that excess capacity is the composite result of import shortages and an intermittent deflationary gap. The relative price of bottleneck import items may rise when output is pushing against the capacity to import constraint but should fall back during the intermittent periods of industrial recession when inadequate demand rather than import bottlenecks is the main deterrent to higher production. Over time the intermittent rise in relative price may sharpen the perception of backward linkage investment possibilities, but user industries also learn from experience to resort to anticipatory importing during the rising phases of the stop-go cycles.²⁶ Import protection is, therefore, needed

26. Anecdotal evidence of this pattern of inventory stocking is fairly widespread in Latin America. Anticipatory stocking of operations imports probably explains some of the high marginal propensity to operations imports for Argentina reported by Carlos Diaz-Alejandro, Exchange-Rate Devaluation in a Semi-Industrial Country (M.I.T. Press, 1965) p. 56.

to break up this cat-and-mouse game as well as to offset the higher production costs frequently associated with backward linkage ISI.

This makes most private backward linkage ISI dependent not only on government assurances of import protection but also on the credibility of these commitments. There is thus a double barrier to private backward linkage ISI: Hirschman's political resistance and the credibility of the import protection which is granted. Credibility can be undermined by smuggling and/or by the threat of future policy reversals, either in toto or through partial erosion by ad hoc exemptions from import duties granted to influential user firms and industries.²⁷ The operational limit to backward linkage by private investors is usually well short of negative value added, at the point where the required relative price is so high that the risk of legal and illegal evasion of protection discourages investment. To the extent that the limits are breached, white elephants with negative value added are more likely to be found among public sector industries, where the socialization of risk can be carried further through fiscal underwriting of the losses from evasion.

The "credibility gap" biases private ISI investment toward consumer products for which, smuggling apart, there is not much danger of organized consumer power forcing a legalized erosion of protection. But what happens when manufactured consumer imports are cut to some minimal level,

27. An additional threat emerges in the case of World Bank financed projects which require purchase of equipment and supplies from the cheapest domestic or foreign bidder, with a maximum 15 per cent price preference granted to domestic bidders. As exchange shortages have forced many LDCs to depend more heavily in recent years on World Bank financing of infra-structure investment, the World Bank's price preference limit has become a major bone of contention in semi-industrialized LDCs like India, Brazil and Argentina, whose domestic machinery and electrical equipment industries have been operating with excess capacity, but which cannot meet the World Bank price limit.

as they tend to be rather quickly under ISI? The answer is that new foreign designed consumer goods continue to be domesticated but without first being imported. Native industrialists seek out foreign licenses for domestic production of new products, and foreign corporations seek out new protected markets by setting up local manufacturing subsidiaries. It is an illusion to assume that consumer ISI terminates when consumer imports have been minimized.

This later phase of consumer ISI provides the missing ingredient in the explanation of why ISI loses its ability to lower M/Y. In this phase consumer ISI no longer lowers consumer imports but only alters the economy's consumption mix. The effect on BC' depends on what happens to the direct and indirect import requirements for producing successive mixes. A trend toward a higher import content of consumption interacting with the previously noted tendency for new exchange savings from backward linkage ISI to decline as it moves into the "higher stages" provides a logically complete explanation of why M/Y levels off despite the continuation of ISI.

An upward trend in the import content of consumption during the later phase of ISI is likely for two reasons. The first is the lag between the domestication of new consumer products and the development of the full array of backward linkages which the credibility gap allows for these products. New products will tend for this reason to have initially higher import content than older established products which have been around long enough for their backward linkage complex to develop more fully. The continual shifting of the consumption mix toward newly domesticated products tends, therefore, to elevate the import content of consumption. Whether this offsets exchange savings from backward linkage investment

depends on the proportioning of the two types of ISI investment. Credibility considerations dictate that the smaller the domestic market the higher will have to be the share of consumer ISI and the higher, therefore, will be the M/Y ratio at which ISI loses its exchange saving ability.²⁸

The second reason is the time trend of consumer ISI toward the domestication of more technically complex products requiring an ever broader array of specialized ingredients, many of them with high scale requirements. This trend mimics trends in the advanced countries from which the new products and their technology derive. The credibility gap is likely, therefore, to delay the domesticating of an increasing proportion of the required inputs of the new consumer goods being introduced, leaving them with a more lasting higher import content. This would tend to reinforce the upward movement of the import content of consumption during the later ISI phase. Thus, encouraging LDCs in the tough phase of ISI to promote more backward linkage industries will not help their foreign exchange problem unless they also take steps to control the consumption mix.

One important hole in the analysis remains to be filled. Why does consumer demand shift toward new products? Conventional consumer demand analysis has always had difficulty relating new products to relative prices and income, since new products alter the range of choice for the consumer independently of changes in his budget constraint. The standard

28. My "Beyond Import Substitution" article shows that an upward trend of the operations import content of the final demand mix occurred in the 1950's in Argentina as a result of changes in the final demand mix. U.S.-Argentine industry data is also compared to show the much more rapid retardation of individual industry output growth in the smaller Argentine market.

solution has been to aggregate, to put new products into pre-existing consumer good categories: the automobile with the ox-cart, the electric range with the wood stove, nylon hose with lisle stockings, etc. Statistical analysis can then proceed along conventional lines of price and income elasticities, and inter-country Engels curves can be estimated for the aggregates, usually to show that most countries including LDCs are roughly on the same curves so that shifts in the consumption mix can be broadly accounted for by changes in per capita income. If so, it would be hard to explain why consumer ISI should continue to subsist as a mainstay of private investment when M/Y levels off and the growth rate is depressed by the unbridged foreign exchange gap.

The answer requires resurrecting the troublesome proposition that new products alter the range of choice independently of the consumer's budget constraint. LDCs import new consumption tastes as well as new technology from the advanced countries. LDC industrialization and its concomitant, urbanization, by increasing communication with the advanced countries, strengthens externally induced taste formation -- the "international demonstration effect," particularly in mixed economy LDCs where private investment and free consumer choice reign in domestic markets. New consumer products first developed in advanced countries get produced in the LDCs after a lag which often is surprisingly short. Disaggregated Engels curves of the advanced countries for these products are likely, therefore, to be poor predictors of demand in the LDCs. Generally, the intercept of the LDC Engels curve should be to the left of the advanced country Engels curve, assuming that pure ex ante Engels curves, free of disturbances from the supply side can be derived for individual products. Though only hypothesis, the conjecture is backed

by casual but fairly persuasive evidence that the introduction and spread of new products through consumer ISI continues at a substantial clip even in LDCs whose growth of per capita income has slackened to a very low rate. Faster growth, by activating the income elasticity of demand, should normally increase the rapidity of change in the consumption mix, but it would be incorrect to attribute changes in the mix primarily to income elasticity of demand.

What are the implications of this analysis for income distribution policy in two-gap LDCs? Generally, if the exchange gap is dominant, there is no case for increasing income inequality in order to raise ex ante savings, since such savings will be thwarted ex post by the foreign exchange shortage. The more detailed answer, however, varies, depending on whether the LDC is also plagued by another common malady, inadequate food production.

If food production is expanding adequately but its exportability is limited by foreign demand, the case is straightforward for raising the wage share by raising wages and squeezing non-wage disposable income or restricting its range of expenditure. This would shift consumption toward a less import intensive mix and by deepening the market for popular goods would also create new backward linkage opportunities tied to these products. At the same time it would also reduce the capacity of the taste-setting middle and upper classes to absorb new products. By reducing the bias of ISI toward new consumer goods, the economy would be able to lower M/Y and to raise the growth rate.

However, if food production is not expanding adequately, raising wages and depressing non-wage disposable income would divert agricultural

exports to home consumption or would require increased food imports. The total effect on BC' would depend on the relative import content (or exports foregone) of consumption of the two classes of income recipients. The optimal course would be to hold down both classes of income while shifting investment toward agriculture. Preferably, too, the shifting should be done by other means than raising relative agricultural prices, since raising the agricultural profits share at the expense of wages might increase the import content of consumption and would more certainly help orient industrial investment toward new consumer good ISI.

Though these policy deductions are structurally sound in the economic engineering sense, they might require difficult alterations in the investment inducement apparatus and could even encounter some political resistance to their adoption. I mention them mainly because the conventional stabilization programs, repeatedly urged on the LDCs despite their poor record of success in the LDCs, violate these economic engineering maxims. Income policies for halting the wage-price spiral usually edge over into devices for pressing down on real wages in order to widen profit margins and encourage private investment. The strategy may have merit in basically one-gap LDCs whose inflation and balance of payments deficit are merely the consequence of domestic excess demand and wage-price spiralling spilling over into excess demand for foreign exchange. It makes little sense for two-gap LDCs whose agricultural supply problems are heavily institutional and technological and whose industrial sector, constrained by cost and risk, can be expected to venture only slowly and timidly into exporting.

4. The Impact of the North-South Income and Technological Gaps

At the beginning of the paper, it was suggested that many development economists and social scientists still seem to operate implicitly with variants of what we can now call a "naive North-South model." In this model different levels of per capita income are associated with more or less determinate socio-economic structural features: urbanization ratios, literacy rates, savings-investment rates, labor force distribution, size and political importance of middle classes, labor force distribution, capital-labor ratios, educational levels, consumption mixes, and the like. The current structural features broadly associated with countries in the highest per capita income ranks provide the norms of economic, social and political development toward which the LDCs should move as they climb up the per capita income slope. Since, however, the structural characteristics of advanced economies vary, exponents of the naive N-S model have found it necessary to resort to the usual way out, aggregation, in order to encompass the diverse structures and experience of the advanced countries within common categories. The egregious culmination of this approach is, perhaps, Rostow's Stages of Economic Growth, whose jet-age terminology still dots the economic development literature and whose broader vision apparently provides the economic prognosis from which those American nation-building political scientists who rationalize underwriting the longevity of "pragmatic" political leaders like Field Marshal Thanom Kittikachorn and Generals Chung Hee Park and Rene Barrientos, derive comfort.

A growing number of development social scientists have been shifting, however, to what may be called a "semi-naive North-South model." This model assumes that the economic distance -- the income and technological

gap -- between advanced countries and the LDCs does affect the process of structural change and the feasible range of policy choices in the LDCs. In this genre is Eckaus' technological dualism, which suggests that the capital/labor ratio of the LDC's modern sector tends to be much higher than that appropriate to the economy's factor endowment because the LDC is unable to modify significantly the capital intensive technology which it imports from the advanced countries. The angst which political sociologists have been expressing at the failure of the LDC middle classes to behave like resolute mid-Victorians is also in this genre. Gerschenkron's backwardness thesis and Hirschman's writings on development strategy are more comprehensive attempts to show that economic growth is not a replicative process; late comers will follow different paths and sequences than early developers. Common to all is the view that at various per capita income weighing-in stations along the road to development, the socio-economic structure of the LDCs will differ in various ways from that manifested by earlier travellers along the road.

Both the naive N-S and the semi-naive N-S models, however, share a common disregard for the effect of differential rates of growth between the Northern and the Southern countries on structural change and economic policy choices in the LDCs. It matters little analytically for either model whether the per capita growth rate of the LDC is high or low as long as it stays positive. Higher growth rates of the advanced countries only broadens the stock of technology which the LDCs can borrow, increases their exports and hence improved their balance of payments position. Thus neither model has equipped itself to analyze the implications of the pronounced tendency since the Korean War toward a progressive one-sided partitioning of the world economy, despite positive

growth rates in most of the LDCs. Economic interdependence between "Northern" countries has been increasing, whereas most of the "Southern" countries striving, some in accordance with prescriptions from one or another variant of the N-S models, to increase their dependence on the technology and consumption patterns of the North, are being thwarted in their efforts by their diminishing economic relevance to the Northern economies.²⁹

If LDCs were all one-gap economies -- the foreign exchange supply problem easily solving itself by one means or another -- the impact on their growth rate of a faster rate of growth in the advanced countries would probably be almost always favorable. If the income effect on the demand by the advanced countries for LDC primary exports more than offsets the substitution effect stemming from its advancing technology, the expansion of exports would raise the LDC growth rate, which in turn would raise Cs. In the cases where technological substitution is the greater force, the LDC would face the problem of shifting resources out of the declining export lines. But with the assumption that foreign exchange droppeth like manna on each LDC according to need, the adjustment problem would be little different than that brought about by shifts in domestic demand. Resource reallocation, particularly in low income LDCs, might not come easily. Neither can it be assumed that the export booming LDCs will exploit the boom wisely; they have a bad reputation for squandering the largesse. But it is to these types of problems that the various

29. Neo-Leninist analysis of Pax Americana in terms of the vital dependence of capitalist America on the cheap labor, raw materials and markets of the Third World overlooks the fact that the growth of U.S. overseas trade and investment since the Korean War has been directed, petroleum apart, overwhelmingly toward other economically advanced countries.

policy recipes of the naive and semi-naive N-S models apply.

There is lack of agreement, of course, on which recipe is most appropriate. Those deriving from neoclassical analyses put the emphasis on increasing the stock of inputs -- human and physical capital accumulation -- the assumption being that in the long run supply creates its own demand. The balanced and unbalanced growth approaches, each in its own way, stress investment inducement. But for all these recipes, the faster growth of advanced countries should rightfully create more opportunities than complications? Even the brain drain to higher income countries would be minimized by increases in the scarcity price for high level manpower in the LDC as its growth rate accelerated. Where else would a Harvard M.A. have such high chances of heading a central bank or cabinet ministry at thirty?

When foreign exchange is the chronic deterrent to growth, the picture changes. Faster growth of the advanced countries affects the balance of payments of the LDCs in various ways, some favorable, others not, so that it is quite possible for the net impact to depress the long term growth of many of the LDCs.

The possibility is based on the fact that the faster the long term growth rate in the advanced countries, the faster is their rate of technological progress. One of the least disputed conclusions in the polemics on technological bias is that technological progress in the advanced countries is heavily natural resource and raw labor saving; that is, the tendency has been to develop techniques which economize on the two factors which are most abundant in the LDCs. The effect of the natural resource savings bias on LDC primary export growth is a well-worn polemical issue, with the evidence suggesting that there is at least some validity to the

technological part of the Prebisch thesis. Possibly, faster growth in the advanced countries might stimulate the adverse technological substitution effect on LDC primary exports more than the favorable income effect, but it is not necessary to rely much on this thin reed. The impact of the labor saving bias, which is much more clear cut, is sufficient.

In the first place, it will increase technological dualism in the LDCs by increasing the disproportion between the capital intensity of the technology they import and their factor proportions. The effect would be to depress σ and B.

Secondly, faster technological progress in the advanced countries will usually mean a more rapid development of new consumer products. The result would be to stimulate the international demonstration effect and consumer ISI in the LDCs as, with a lag, they domesticate the new products; domestication could occur directly through licensing agreements obtained by national producers or via multi-national corporations following the product cycle pattern and establishing subsidiaries in the LDCs.

Thirdly, faster technological progress in the advanced countries may also get in the way of Linder's representative demand dynamics. Recall that industrial exporting will emerge, according to Linder, after LDCs have developed a sufficiently comprehensive complex of backward linkages tied to domesticated products which are also in demand in the advanced countries. In line with our analysis of private investment behavior, the complex should reduce the large risk variance in estimating new investment prospects for expanding output capacity in established products for the domestic market. Technological progress in the advanced countries, however, also requires resource reallocation in those countries, due to new

products and shifts in demand. While reallocation occurs more easily in advanced countries, they, no more than the LDCs, have instant reflexes; there are frictions and lags in the adjustment process because of fixed capital, geographical and occupational labor immobility and the like. Since technological progress hits the gamut of activities unevenly -- it is likely to be heavily concentrated, for example, in new products -- the more unskilled-labor intensive industries in the advanced countries with lagging technological progress will be put under a profit squeeze by upward wage pull from the technologically progressive activities and by shifts in demand toward new products. Rapid technological progress, therefore, leaves in its wake an array of sick industries among older product producers, so that the Linder exporting industries would be probing markets contaminated by sick and dying firms. How promising the markets look to the Linder firms would depend in good part on whether the sick firms die quietly or invoke political protection -- sick industry legislation. Normally, such legislation only delays the inevitable; the protective barriers can be breached.³⁰ But for LDCs the effect is to hinder if not stall the process of edging into exporting to these markets, for while the predictability of rates of return from investing in domestic market expansion has been reduced by familiarity and the backward linkage complex, the risk variance remains higher for export market penetration and is held up even more by the sick industry protective measures of the advanced countries.

30. Less so, however, if import quotas are used to protect sick industries, as is the case with, for example, under the United States Long Term Cotton Textile Agreement which limits the expansion of textile import quotas from LDCs to 5 per cent per annum.

Technological progress in advanced countries thus has offsetting effects on BE' in the LDCs and hence on the growth rate. Its effect on demand for LDC primary exports varies, with perhaps a tendency to slow the growth of demand in at least some cases. It shifts comparative advantage in favor of the LDCs in labor intensive activities, but the sick industry syndrome can offset this advantage in the eyes of the private LDC industrialist and substantially delay his entry into industrial exporting. Sick industry protection in advanced countries and new opportunities for consumer ISI in the LDCs can help to perpetuate the ISI investment bias, even when that bias has become totally counter-productive. Presumably, if the advanced countries slowed their full employment growth rate, e.g., by massive unproductive military outlays, or preferably, through the spread of flower-braiding Hippyism, productivity growth and product shifting would be less intense and advanced country markets for LDC primary and industrial exports more dependable.³¹ The relationship between advanced countries and the LDCs would then approximate more closely that visualized by the semi-naive N-S model.

This is painting with a very broad brush. Technological biases don't operate smoothly, and breakthroughs favorable to the natural resources and

31. Modern military outlays also include large-scale expenditure on military R & D. However, the evidence for the United States is that the technological fall-out onto civilian production processes and products has been remarkably small considering the size of the outlays, except for closely complementary civilian-military product lines, like aircraft and computers. See Richard R. Nelson, Merton J. Peck, and Edward D. Kalachek, Technology, Economic Growth and Public Policy (Washington: The Brookings Institution, 1967) Chapter IV.

The argument that reducing the full employment growth rate of advanced countries by more military spending would help the LDC growth rate assumes, however, that the international demonstration effect does not extend to military hardware, arms races, and military involvements. This is probably unrealistic; world welfare is more likely to be maximized by a combination of the "Revolution of Rising Expectations" in the LDCs and Hippyism in the advanced countries.

labor skill distributions of some LDCs can be expected to occur from time to time. The income effect of faster advanced country growth also benefits different LDCs unevenly. The net impact on the balance of payments and the growth rate may thus be favorable for some LDCs and not for others, and the distribution of favors should fluctuate over time. But when unfavorable, the resulting slowdown in the LDC, in accordance with the market principle of "them as has gets," activates still another unfavorable factor, the brain drain. With a diminishing growth rate, scarcity rents for high level manpower fall, and the internationalized market for such talent seduces a larger number into emigrating to advanced countries, some temporarily, others permanently.

A more specific prediction of the probable incidence of unfavorable impact of the total package of relationships can be made, however. It will not be randomly distributed among the LDCs but will hit with greatest frequency among the semi-industrialized LDCs, those in the tough phase of ISI. Why? Because these are the countries which have the greatest difficulty adjusting BC' to a falling off in their traditional exports.

To elaborate, let us start with the impact on LDC primary exports only. Assume the effect of rising income and technological substitution in the faster growing advanced countries accelerates the growth of demand for primary exports of some LDCs and decelerates it for others, and that the unfavorable cases are randomly distributed among the LDCs. Nevertheless, among the unfavorably hit LDCs, the less industrialized ones will be able to adjust BC' by shifting to ISI, the non-industrialized countries adopting the politically and administratively undemanding investment inducement policies required for easy phase ISI, and those countries already in that phase continuing on course. This option is no longer open to countries

In the tough phase of ISI. Their task is to alter the consumption mix in a less import intensive direction and to induce or push industries into exporting without drastically depressing aggregate effective demand. This has to be done, moreover, by countries which are more highly urbanized and with larger middle classes sensitized to the international demonstration effect than is the case in the less-industrialized LDCs. The more rapid development of new products in the advanced countries and their sick industry syndrome is thus a greater obstacle to the readjustments required by LDCs in the tough ISI phase than in the less industrialized countries.

If the readjustment is inadequate, moreover, the brain drain is likely to be greater absolutely and probably relatively as well for LDCs in the tough ISI phase than for the less-industrialized LDCs. The stock of such talent will have risen substantially in the course of ISI growth into the tough phase -- the more so if the LDC has adopted the earnest advice of the human capital school of developers. For a time at least as its growth rate falls, there is likely to be excess capacity in its higher education industry in relation to the slowing growth of demand for high level manpower. But in contrast to the goods industries, supply in the higher education industry adjusts to the declining growth of demand by exporting.

The paradox is that LDCs that have come to produce most of their manufactured consumer goods have developed substantial intermediate and capital goods industries, have had some decades of industrial experience, and have accumulated cadres of skilled and high level manpower well above the LDC average, seem less capable of reallocating resources in directions required for higher growth than many of the more technologically primitive and less well-equipped LDCs. The paradox has not passed unnoticed: ECLA,

for example, associates tough stage ISI in Latin America with increased structural rigidities and greater vulnerability to trade fluctuations. But ECLA, perhaps for diplomatic reasons, couches the paradox too much in economic engineering terms. The main problem is not so much the rigidity of input-output relationships, these get altered over time by investment even in tough phase ISI, but the direction of the alterations. This is at bottom a behavioral problem, having to do with the socio-economic forces, internal and external, which sustain the ISI bias of investment and block the adoption of alternative policies to reorient consumption and investment in directions which would raise B.C. Without such redirection, progress for mixed economy LDCs consists of an escape from one cul-de-sac at low levels of income and technological skills onward, upward and into another cul-de-sac at a higher level of income and technological expertise, with faster technological progress of the advanced countries merely deepening the higher level cul-de-sac. The progress is not toward self-sustained growth, but toward self-sustained balance-of-payments problems.

This point was made with touching innocence recently by The Economist, in a special Latin American survey feature.⁽³²⁾ A tour of Latin America, The Economist reported, would show vast changes from the foreigner's stereotype of Latin America as an apathetic mañana land, dominated by conservative hacendados and obscurantist bishops. In the major countries the industrial entrepreneurs, who have been transforming the environment with their

32. "No Christ on the Andes: An Economic Survey of Latin America," The Economist, Sept. 25, 1965.

factories and modern marketing techniques, are an au courant elite with whom European and American businessmen would find easy rapport. But while ticking off the usual list: pushy Paulistas, portentous Porteños, and antsy Antioqueños, attention was also called to a beastly little problem which was dampening the dynamism. Many of the most dynamic Latin American countries were running dreadfully short of foreign exchange and were saddled, in addition, with a most oppressive foreign debt service. Debt rollover and larger inflows of new foreign credits on softer terms was therefore highly advisable for the indefinite future. The Economist took it for granted that the pushy Paulistas and the other dynamic chaps were not capable of easing the foreign exchange gap by conquering industrial export markets.

An Agenda for Policy Analysis

The policy implication of this paper is not to deny the American Creed that there are solutions to all problems, whether or not the solutions are practical or desirable. Its implication is rather that the set of policies conducive to more rapid growth varies significantly, depending on whether the LDC is a chronic one- or a two-gapper. Development policy analysis not only has to encompass this division but must also recognize that the division depends mainly on other factors than the level of income, stock of human capital and depth of industrial structure of the LDC. Nostrums which emphasize higher rates of investment in order to accelerate human and physical capital accumulation remain relevant for the one-gap case but have to take second place in the two-gap case to measures for reallocating investment and consumption in order to reduce the foreign exchange gap.

The policy alternatives range widely. At one extreme are proposals that ignore reallocation measures and would have the advanced countries sustain the growth momentum of two-gap LDCs by underwriting the balance of payments deficits which the momentum would generate. This is the spirit of The Economist's Latin American survey mentioned previously. It requires adjusting the moral image of foreign aid from being a means of assisting the poorest and most ill-housed and ill-fed of the LDCs to improve their lot -- an image which, to be sure, gets tarnished by closer inspection of the distribution of the income increments in many of the poor recipient countries -- to being a means of helping the LDC middle classes to meet their rising consumption aspirations when their countries have entered the higher income cul-de-sac. At the other extreme of the policy range is the egalitarian austerity of China and Cuba. Two-gap analysis makes Mao and Fidel seem somewhat more "pragmatic" than ethnocentric American political development analysts have been willing to recognize. The austerity does help to raise BC' .

If one rules out the two extremes; the first as unlikely and the second as incompatible with the mixed economy, the quest for feasible policy sets narrows to those which modify rather than abolish private investment, material incentives and freedom of consumer choice. There is no doubt that policy sets which meet the mixed economy condition and are also feasible in terms of economic engineering can be devised to get the tough phase ISI economies out of their cul-de-sac. Which solutions, if any, are also politically and administratively manageable is, however, a question which cannot have the same answer in every case, since the political limits to the range of solution sets depends on the balance of political forces in each country. Economic engineers should be working

on the design of alternative solution sets which could make mercantilism work, and political developers on the analysis of the political requirements for making them work. It may be useful, therefore, to conclude by pulling together the general policy implications of the foregoing appraisal of the two-gap problem to indicate the lines which policy thinking should take, if the appraisal is valid.

Economists, first of all, might stop seeking so avidly that philosopher's stone, the equilibrium exchange rate, as the all-purpose instrument for reallocating resources towards exporting -- or feel guilty when they suspend their search. It is unlikely that for LDC two-gappers in the tough phase of ISI there is a single exchange rate which can impel the right mix of exporting and import substitution while also protecting the overall level of activity; some open or disguised system of multiple exchange rates is usually necessary. More than that, it may be unwise to bet very heavily on changing relative prices under some multiple rate system as the main reallocating device. The relative price changes needed to reorient risk sensitive industrial investors toward producing for export markets may be too great to be maintainable long enough to accomplish the task. Schemes which concentrate on socializing private risk so as to reduce the risk variance will probably be more effective if the risk variance is high than schemes which raise the mean expected profit rate by improving relative prices.

Secondly, practical substitutes for competition are needed to keep enterprises alert and honest. In countries with small domestic markets -- the universal LDC condition -- import competition has to be the major form of effective market competition. However, import competition is of limited feasibility for two-gappers plagued with exchange shortages and struggling

to avoid depressing effective demand unduly. Once the exchange shortage is solved, import competition can be progressively augmented, but import competition is not a useful device for solving exchange shortages. Unfortunately, efforts to sustain effective demand in the face of a severe exchange gap generate a type of internal sick industry syndrome in the LDCs. Old firms neither die nor fade away, if they are large enough to exert political influence. Though losing demand to newer ISI products, they are kept alive despite mounting excess capacity by one or another form of government subsidy. The policy dilemma is complicated, moreover, by the possibility that, aside from short-run unemployment worries, from a longer run social efficiency point of view some of these firms should not be allowed to die. Changes in the demand mix which would revive the private profitability of some of these firms by shifting the excess capacity to newer consumer products may also be in the best interests of the economy as a whole.³³ Rationalization programs to encourage mergers for underscale firms and which link future protection and subsidies to performance criteria such as export quotas and/or productivity improvements will probably have to serve, at least while the exchange shortage prevails, as substitutes for import competition.

Thirdly, since the composition of consumption is a particularly important determinant of growth in the two-gappers, the welfare implications of the consumer demand mix change drastically. The mix no longer should be treated as a sacrosanct datum and income distribution as an extraneous ethical issue divorced from economic efficiency. Two-gap models allow economists to exorcise the spectre of Vilfredo Pareto and to turn their populist-tinged imaginations loose. Bangkok, Manila and Lima, with their sportcars,

33. One of the weak points of the effective rate of protection approach to assessing the social efficiency of different industries is its assumption that the consumer demand mix should be taken as datum even in two-gap situations.

motorbike cowboys and air-conditioned oases amidst miles of squalor, may not be the necessary price of progress. God isn't dead; he's just slow to anger.

Fourthly, policies to restrain one of the major bearers of counterproductive consumer ISI during the tough phase of ISI, the private foreign investor, are badly needed. Mixed economy LDCs, believing that the investment necessarily saves foreign exchange for the economy, have been following policies of encouraging such investment while pressuring the multi-national corporate subsidiary to minimize operations imports by buying nationally or establishing their own backward linkage facilities. Since the mean expected profit rate for inducing the investment is high, the pressure to reduce operations import ratios has had to be compensated by high rates of protection to cover the greater production costs of the backward linkage requirements, and by the overpricing of equipment, parts, and financial services supplied by overseas divisions of the multi-national corporation. The effect is to reduce the operating efficiency of the local subsidiary and to reduce net exchange savings to the economy, often to a range between negligible and negative. A potentially promising alternative might therefore be to require net exchange earning targets of foreign investors, which they are allowed to meet by juggling combinations of exporting and import substitution at their discretion. This would have the salutary consequence of excluding investments which cannot meet such conditions, while exploiting more effectively the managerial, technical and exchange earning skills of those which do come in.

Finally, the sophisticated populist mercantilism needed to replace the less-sophisticated unpopulist ISI varieties involves discriminatory trade policies that require forbearance on the part of the advanced countries. Although advanced countries are already grudgingly edging toward accepting ad hoc LDC trade practices that violate the most-favored-nation clause, GATT principles and other tenets of liberal multilateralism, it would be helpful to devise a more general second-best international welfare rationale from

which implicit rules of the trading game might be derived. This might reduce intra-LDC squabbling while promoting the acceptance of the discriminatory policies the LDCs will probably require for the indefinite future.

The initial reaction of many economists may be to dismiss the agenda as a can of worms. The policy sets implied by the agenda presumes far more political flexibility and administrative sophistication than can be expected from LDCs. This could be the case, but if the preceding analysis is broadly correct, many mixed economy LDCs may have no alternative if they want to restore a respectable growth rate while remaining mixed. The issue is one that could perhaps best be analyzed in collaboration with political and social developers, if they can be dragged away from Rostovian economics and Parsonian taxonomy to join the analytic effort. For there are some intriguing aspects to the issue, which suggests that the picture may not be all bleak.

In the first place, many advanced countries of Europe have done quite well economically in the post-war period with the aid of one or another form of sophisticated mercantilism tinged with populism. The one spectacular case of a twentieth century mixed economy making it into the magic circle -- Japan -- is an excellent case study of austere and imaginative, if unpopulist, mercantilism.

Secondly, many of the LDCs requiring sophisticated discriminatory policies to get out of the exchange gap are also those whose accumulation of educated capital, managerial experience and technological expertise is well above the average of the LDCs. Many of them have been most ingenious in painting themselves into a corner.

Finally, there are dynamic relationships which merit exploration. The relative honesty and efficiency of public administration seems to be uncorrelated with levels of income of the LDCs; compare India with Thailand or Greece. There is also evidence that in higher income LDCs like Argentina and

Uruguay, the quality of public administration has deteriorated in the post-war period, concomitantly with an increased accumulation of human capital, managerial experience and technical expertise. Public enterprises have tended to partition off from effective central control to become semi-independent feudal principalities with coteries of trade unions and private supplier and user firms jointly milking the public enterprise through high input prices and low prices for the output, while acting as a strong political force to protect the symbiotic arrangement. There has been a sort of withering away of the state, the central authorities losing effective control over these public sector fiefdoms. The Irish political economist, William Butler Yeats, put it graphically, possibly after visiting Montevideo:

Turning and turning in the widening gyre
The falcon cannot hear the falconer;
Things fall apart; the centre cannot hold

But the centre has been able to hold or to recapture control in others of the LDCs and in advanced mercantilist countries: e.g., Mexico, France, Sweden etc. Holding or not holding seems to depend on internal political forces more than on the stock of skilled administrators. One difficulty may be that an excess of pragmatic pluralistic politics is bad for holding. Doses of prickly ideology may be needed to prevent disintegration or to change policy direction when the economy is on dead-center.

The tasks of policy analysis for mixed-economy LDCs are not easy, and the end product may still turn out to be a can of worms. Yeats also had something to say on this:

Surely some revelation is at hand;
.
And what rough beast its hour come round at last
Slouches towards Bethlehem to be born?

I'm not sure if Yeats meant this as encouragement.