Comparative Socioeconomic Development

Steven A. Y. Lin*

I. Introduction

This study attempts to devise instruments for the quantitive analysis of development as a whole, covering both social and economic factors. It covers 88 countries for the decade 1960-1970. Attempts are also made to analyze the possible interrelationships between the "composite index of socioeconomic development" and the development strategies and structure of these countries, and to draw certain policy implications.

Despite its importance as a goal of current international and national policy, there is no clear and agreed upon definition of socioeconomic development. There is also no single objective criterion of it against which to validate measurement devices.

As a single dimensional measure, the per capita national income is not a good general measure of socioeconomic development. It has several major limitations:

(1) The per capita national income, as a monetary concept, does not take into account the values that lie outside the monetary sphere, nor the social values of things that may differ from their prices.

(2) As a market-based concept, the national income does not apply readily to centrally planned socialist economies, subsistence economies, or non-market sectors of predominantly or partly market economies.

Other difficulties that affect the use of the per capita national

* Professor of Economics, Southern Illinois University at Edwardsville, he would like to thank an anonymous referee of this Journal for his helpful suggestions.

income as an international measure of socioeconomic development arise from converting the income of the different countries into a single international monetary scale and the technical problems of pricing the product in an inflating market. Like any other aggregate concept, it also suffers from the limitation of not reflecting the structure and distribution of development.

On the other hand, in this study a broad range of the components of socioeconomic development is incorporated in a synthesized index. On the social side, the components covered are health, nutrition, education, housing and communications; and on the economic side, agriculture, industry, service, trade, and "general" economic aspects. These are components or categories of socioeconomic development which international bodies have been set up to promote. Growth or advance in the relevant indicators of these categories reflect important objectives of socioeconomic development in most countries around the world and have thus a normative or value basis.

II. Development Indicators

Socioeconomic development is understood on the one hand to involve progression towards various internationally agreed upon objectives or values which countries seek to achieve. Examples are improved health, improved housing, better nutrition, more communications, improved transportation, and greater use of electricity, etc. At the same time, we have used an empirical approach, in that indicators for the value components as defined above, which empirically distinguish more-developed from less-developed countries up and down the scale, have been sought. In this connection, advantage is taken of the previous related international enquiries [Kuznets (1954-1968), McGranahan (1972), UN (1961), UNRISD (1970)].

Certain structural changes which may take place with the process of development that are not necessarily considered to be value objectives of development are also included, if they are empirically found to be consistently associated with other aspects of development. Examples for the latter are the structure of employment and demography (McGranahan (1972), pp 11-18).

Various political, cultural, institutional and psychological indicators have not been included in this study for some of these indicators represent factors that may have a bearing on

socioeconomic development as determinants but cannot be considered internationally to be parts of it.

As a result of these scrutinies and considering the data availability, the following twenty-one indicators are chosen for constructing the composite socioeconomic index. The rationals for this selection are similar to that of McGranahan et al. (1972).

(1) Expectation of life at birth
(2) Crude birth rate (−)
(3) Crude death rate (−)
(4) newspaper circulation (per 1,000)
(5) Radios (per 1,000)
(6) Steel consumption (kg per capita)
(7) Energy consumption (metric ton of coal equivalent) per capita
(8) Number of physicians (per 1,000)
(9) Telephones (per 100)
(10) % wage earners and salaried employees in total economically active population.
(11) % economically active population employed in electricity, gas, water, sanitary, transportation, storage and communications
(12) % GDP derived from manufacturing
(13) Sum of value of imports and exports (per capita) in U.S. dollars
(14) Combined primary and secondary enrollment as % of 5-19 age group
(15) Vocational enrollment as % 15-19 age group
(16) Consumption of protein (per capita, per day) in grams
(17) Adult male in agriculture % of total male labor force (−)
(18) Electricity production, KWH per capita
(19) Infant mortality rates (−)
(20) Number of persons per room (−)
(21) Expenditure on food as % of total private consumption

Components 2, 3, 17, 19 and 20 are thought to correlate negatively to the socioeconomic development of each country.

It has to be noted that the income distribution of each country is not included as one of the (component) indicator variables. There are very few countries – mostly developed countries – that have relevant and comparable data on the income distribution, and even the validity or reliability of the data may be disputed. However, a number of the indicators included in this study do reflect, to some extent, distribution of levels of socioeconomic

development — the broadest sense of income distribution. Specifically, percentage of children in school and even life expectation rate, for example, are essentially measures of the spread of a socially favorable condition in a society. It is in contrast with indicators of a per capita type where a given increase may simply reflect the piling up of more benefits where benefits are already piled up.

III. Methodology and Data

If there are m countries belonging to the world community, each country, q_i ($i = 1, ----, m$), is characterized by n variables $X_1, X_2 ---, X_n$. In other words, each country may be viewed as a row vector $X_i = (X_{i1}, X_{i2}, ---, X_{in})$.

There is also a discrete, non-negative function $D_i = D(X_i)$ whose role is that of a measure of relative socioeconomic development of a particular country, q_i. The country q_i is considered to have a "higher" level of development than country q_j ($i \neq j$) if and only if $D(X_i) > D(X_j)$.

In this connection, the following question arises: Are all indicator variables ($X_1, ----, X_n$) equally important in judging the level of development, or are some of them more and some less important? Before answering this question, we should discuss what criterion we use to distinguish between "more" and "less" important variables. There are two possible ways of selecting such a criterion. The first consists of accepting as a criterion one of the variables $X_1, X_2, ----, X_n$ (say the variable X_n). In this case, we are using an endogenous criterion. Another case is the exogenous criterion which is equivalent to selecting some additional variable, say X_{n+1}.

The following is an example using an endogenous criterion. Suppose that the variable X_n represents the GNP per capita. This variable has sometimes been accepted as a measure of the level-of-development and therefore can play the role of a criterion: the more important a particular variable X_j, the larger the $r^2(X_n, X_j)$, where r refers to the correlation coefficient. Naturally, the weight assigned to the X_j will be larger when r^2 is larger.

An example of using an exogenous criterion is to use the distance d which measures the achieved level of, say, economic

growth of a given country X_i to the "ideal country" X_o. The more important the variable X_j, the larger the value $r^2(d_{oi}, X_j)$. Using the "ideal country" for comparison is an example of using an exogenous criterion.

A variation of the exogenous criterion may prove to be useful under this circumstance. The most advanced country can be used as a criterion country, and all the selected variables for measurement of the levels-of-development from ith country can be measures against that of the most advanced country.

The following composite index of socioeconomic development does provide an ordinary measurement of socioeconomic development. Suppose I_1 and I_2 are the values for ith country, on the development indicators (or variables) 1, and 2, and C_1 and C_2, the corresponding values for the "criterion country," the formula for this ordinal (or relative) composite index is

$$(R\ (I, C) = \sum_{i=1}^{2} \pm \frac{Ii}{Ci}$$

for i = 1, 2. The same formula holds true for the situations where there are more than two variables.[1] The sign (±) of the specific ratio (I_i/C_i) depends on whether the specific component indicator is an addition to or subtraction from the total level-of-development. It also reflects the relative standing of ith country's specific component indicator vis-á-vis that of the mean of all sampled countries, due to normalization procedure which will be discussed momentarily. R(I,C), thus, provides the ordinary (or relative) level of ith country's socioeconomic development in comparison to the other sampled countries in general and that of the "criterion country" in special. This composite value can be converted into an index (SM) assigning the value of 100 to the criterion country for easier comparison.

An aggregate index is as good as the system of weights on which it is based. To establish a system of weights for a composite index, the proper procedure is to derive it from some system of preferences, such as á policy statement. As we are looking for an

1 Additive development components is assumed here. Let D(x) be the vector of development indictors (or components). We assume that there exists F, a positive monotonic transformation such that total socioeconomic development F(D(x)) is additive. It is analogous to the assumption made by Lancaster and Strotz (1966, 1957) on the additive total utility function. Each individual development indicator (or component) may be a function by itself (not necessarily additive) of the yet lower level development components.

index to measure the level-of-development of a nation, conceptually the preferences which express the aspiration and govern the policies of that nation should be used. This means that the level-of-development index should be computed with weights reflecting the same system of preferences by which planning was guided.

More complications arise in the international comparison of the level-of-development. If weights for the index were based on a national plan, they would be valid for that particular nation but not for international comparisons.[2] Therefore, we have to construct a synthetic system of weights reflecting common features of a number of plans. The validity of such weights will also be limited in time and space but will transcend the limits of one nation. Since we do not have a system of weights based on sound theoretical principles, a system of equal weights seems to be the simplest.

The data for this study are taken from available statistical sources, mainly United Nations' publications (FAO, UN). The choice of the period 1960-1970, like the choice of country, is determined by data availability.

Among those 88 countries, countries at the lowest development level are under-represented (many newly independent African countries, and certain large but less developed Asian countries) because the availability of statistical data is correlated with development levels. Also, the socialist countries with centrally planned economies are excluded because of a basic incomparability of some indicators. (A "Global Material Product" cannot be reasonably compared with GNP at factor cost in United States dollars, if for no other reason than the multiple exchange dollar rates in those countries).

It is necessary to standardize the component indicators before proceeding to any aggregation procedure because they are expressed in very different and imcomparable measurement units. Various methods of standardization are possible and the selection of a certain method is somewhat arbitrary. This is unavoidable shortcoming in any research involved with aggregation procedures (such as our relative index). It should also be noted that the absolute value of our index is not neutral to the origin of measure-

2 This difficulty is not a unique problem for the international comparison of the level-of-socioeconomic development. Similar difficulty arises in the studies involving international comparisons of the development levels Baster (1972) and the level-of-living (UN (1961, UNRISD (1970)).

ment (i.e., selection of an "ideal country").

The standardization formula used in this study is as follows:

$$X_{ji} = \frac{X_{ij} - \overline{X}_j}{s_j}$$

where $\overline{X}_j$ and s_j are, respectively, the arithmetic mean and the standard deviation of the variable X_j. And the subscript i indicates the values for individual countries and this transformation procedure is also called the normalization of data, and the same procedure is applied to every component variable before computing the composite index.

IV. The Relative Level-of-Socioeconomic Development Index

The relative level-of-development index (SM) are computed for 87 countries, using the United States as the "ideal country". The results for 1960, 1965 and 1970 respectively are presented in Table 1. For easier comparison, the level-of development values (R) are converted into index (SM) using the U.S. values of the respective years as 100. This index not only provides the magnitude but also the signs (±). Meaning signs (±) are discussed earlier. India, Ecuador, Ethiopia, Vietnam, Haiti, Zambi, Pakistan, Sudan, Kenya, Indonesia, Burma, Uganda, and Liberia show up pretty low in the levels-of-development in comparison to the U.S. Germany, Canada, England, Sweden, Switzerland, Netherland, Belgium, and Austria are by far the closest to the U.S. Luxemburg has a higher level-of-development than the U.S. From Table 1 one can clearly observe that the levels-of-development gaps between rich and poor countries have been widening over the decade 1960-1970. This finding coincides with similar assertions and analyses made by others on the levels-of-living (Elliot (1971), Gostkowski (1975)) using different component indicators and approaches. Note that the level-of-development gap between rich and poor countries may be even larger than presented here, for many countries at the lowest development level are underrepresented in our study. Many newly independent African countries and certain large but less developed Asian countries are not included in our study for lack of data.

Table 2 is presented in order to compare the relative speeds with which the socioeconomic development of rich countries and

LDC are moving. In order to compute this speed for the three selected years, 1960's values of the level-of-development for the U.S. are used as the base to compute the R-values for each country. Then, the R-values for each country are compared over time. The speed of movement in the levels-of-development is represented by the difference of R-values between selected years (1960, 1965, and 1970) for each respective country.

Table 2 indicates that either computing the speeds for the two periods 1960 to 1965 and 1965 to 1970 separately or computing for the whole period 1960 to 1970, the LDC's speeds of improvement are generally much slower than that of industrialized countries. Thus, the widening gaps between the two groups in terms of the level-of-socioeconomic development can be attributed to the compounding effects of both LDC's original low level-of-development and their slow speeds of improvement.[3]

V. Relationships Between Socioeconomic Development Index and Development Strategies

Comparing the recent experience of less developed countries with the earlier development and present structure of the developed countries, it is observed that continuous structural change is related to the growth of income, rather than that different structural relations characterize developed and less developed countries, however defined (Chenery and Syrquin(1975)). Applying these findings to the formulation of policy, 50 sample countries are classified according to the structural similarities of their development strategies. Four principal patterns of resource allocation are identified: primary specialization, balanced allocation, import substitution, and industrial specialization. The countries in each classification followed somewhat different sequences of developments, steming partly from initial differences in size, resource endowments, and access to external capital, and partly from differences in social philosophy and organization. This

3 It is not surprising that the index is lower in countries like India than in the U.S. Nor is it surprising that the rate of change in the developing countries is slower, and therefore the gap is growing, since the index is heavily weighted with indicators known to be highly correlated with per capita GNP. A number of studies (McGranahan (1972), UNRISD (1970)), including the UNRISD study, have shown that indicators of health, nutrition, and education tend to change rapidly at lower levels of per capita GNP and then slow down, while the opposite is true for most economic indicators. A composite socioeconomic index reflects a mix of these tendencies. A level of socioeconomic index focussing on different indicators might well show a declining gap.

typology provides a basis for comparing the policies of countries having similar structural characteristics. It also provides a basis for comparing the policies of these countries with respect to their "levels-of-development." Thus some light can be shed on the place of the level-of-development indicators within the development model in its end-and-mean continuum.

With special interest in the transitional developing countries, the data for fifty countries which are not the least developed, the fully developed, and not the transitional countries in which growth has been seriously disrupted during the decade of the sixties (1960-1970), are compiled in Table 3 (Chenery and Syrequin (1975), pp. 102-103)[4].

In the last two columns of Table 3, the socioeconomic development index (SM) for 1965 and 1970 are listed for comparison. There is a completed set of data for a total of 44 countries instead of 88 countries in Table 3, due to the availability of data. Countries in the categories of primary specialization and import substitution generally have lower levels of socioeconomic development.

To analyze the relationships between each index of resource allocation and the level-of-development, the pairwise simple correlation coefficient between the allocation index and the socioeconomic development index (SM) is computed (Table 4). A_1 through A_{10} are the 10 indices of resource allocation:

A_1 -- 1965 population in millions
A_2 -- 1965 per capita GNP
A_3 -- 1960-1970 growth of per capita GNP in %
A_4 -- Relative export level
A_5 -- Trade orientation
A_6 -- Production orientation
A_7 -- Capital inflow
A_8 -- Income shares of upper 20%
A_9 -- Income shares of lower 40%
A_{10} -- Gini coefficient

The value inside the parenthesis below each correlation coefficient is the number of observations available in computing each specific correlation coefficient. Each S-value indicates the type 1 (one-tail) error for the significance of the respective correlation

4 See Chenery and Syrquin (1975, pp. 101 105) for detailed explanations of each different indicator on Table 4. The income distribution data are from Jain and Tiemann (1973).

coefficient.

The level-of-development has a positive correlation with per capita GNP, growth of per capita GNP, relative export level (export as % of GDP), and income-shares in % of the lower 40% population group. It has negative correlation to the size of population, trade orientation (above-normal primary product exportation), product orientation (above-normal primary product specialization), capital inflow (excess of import over export) and Gini coefficient (the higher the coefficinet, the less equal the distribution). The signs for all of the correlation coefficients are as expected.

It is conceivable that the different patterns of resource allocation may have a delayed, instead of contemporaneous, relationship with the levels-of-development. For this reason, the correlation coefficient for the same relationships are also computed for the 1970's SM value and the results are presented in Table 4. The results are consistent with that of 1965, except the magnitudes of the correlation coefficients are generally larger. This finding suggests a certain degree of time-lag relation between those resource allocations and the level-of-development.

An interesting observation is that per capita income has a very strong relation with the levels-of-development index. Especially for countries of similar allocation patterns, the rank order by per capita GNP is quite close to that of the level-of-socioeconomic development index. However, one can stretch this implication too far. Mexico has a simliar per capita GNP to that of Uraguay, but Uraguay has a much higher level-of-development than that of Mexico. This difference between the two measurements may be due mainly to the different income distribution patterns of the two countries. Uraguay has more equal income distribution (Gini coefficient of 0.42) than that of Mexico (Gini coefficient of 0.58), as indicated in Table 3. It is also easily visualized from Table 3 that Taiwan has a much lower per capita GNP than Mexico, yet her level-of-development index is much higher than that of Mexico which has a different allocation pattern. This demonstrates that there are still substantial differences between the one-dimensional GNP measurement and the multi-dimensional level-of-socioeconomic development index. A similar phenomenon is observed between Brazil and Mexico. Brazil's per capita GNP is about one-half that of Mexico. Yet, Brazil's level-of-development is much higher than that of Mexico.

There are numerous reasons for Taiwan's level-of-development

being higher than Mexico's. In addition to having a different allocation pattern, Taiwan's income distribution is more equal than that of Mexico. The Gini coefficient for Taiwan is 0.32 and that for Mexico is 0.58. As we discussed earlier, income distribution could be an important factor affecting level-of-development. Due to the paucity of income distribution data (we only have 1965 data for 44 countries), the income distribution is not incorporated in our computation of the level-of-development index. However, from Table 3, a more equal income distribution (i.e., a lower Gini coefficient) is associated with a higher level-of-development. For example, Mexico and Uraguay have a pretty compatible allocation pattern including per capita GNP, yet the levels-of-socioeconomic development are quite different due to different income distribution patterns. On the other hand, Jamaica and Mexico have a similar per capita GNP and Gini coefficient and thus a similar level-of-development index, though the other allocation patterns are different between these two countries. The correlation coefficient between the level-of-development and the Gini coefficient is in the neighborhood of 0.2, as indicated in Table 4.

VI. International Development Issues and Suggestions

As we discussed earlier, the rich-poor gap in the levels-of-socioeconomic development has been widening during the last decade both absolutely and relatively. In addition to being a quantitive economic difference, it is increasingly a gap in values, social organization, contrasting life styles and perceptions of the world in which we live. Ominously, it is a gap over which the world community may find it increasingly difficult to communicate effectively.

Reasons for the gap are numerous. It is an economic gap, a technological and educational gap. It is a complex phenomenon. A high population growth rate in the poor countries also acts to widen the gap. The low levels-of-development tend to perpetuate these trends from one generation to the next. In the abscence of external factors capable of breaking the cycle, these conditions will no doubt continue indefinitely into the future. It points to the fact that the levels-of-socioeconomic development serve not only as targets for development plans but also for assessing the results of development.

The direct or indirect interrelationships indentified in the last section concerning the levels-of-socioeconomic development in-

dicators and structural similarity of development strategies can be used to assess the national or international development policies designed to narrow the rich-poor gap. Consideration should be given to the effects of such policies as trade and economic integration, multinational economic groupings, and programs designed to reduce export instabilities of less developed countries.

Every country's socioeconomic development depends to quite an extent on the resources and cooperation of other nations. As income rises, dependence on imported goods and raw materials and the share of global output crossing national borders increases. Closely realted to this increase in international trade is the growth in international production and the spread of multinational corporations. This institution, with its efficiency in combining resources and disseminating technology, plays an important role in raising material affluency and in intergrating international economy.

Using this institution as a catalyst, industrial countries can assist less developed countries in transferring technology and pursue research specifically suited to the social needs of LDC. Increased dialogue between rich and poor countries should be encouraged to promote the attitudes, motivation and mores congenial to economic and social development.

As noted in the last section, the production and trade orientations biased toward primary products have substantial adverse impacts on the levels-of-development. The underlying reasons for this relationship are numerous. The instability in the production and export earnings related to primary products could be one of the main reasons.

Rich and industrialized countries can also help LDC in stabilizing the export earnings to enable them to reduce the wild price fluctuations of the commodity markets and develop a realistic strategy for social and economic developments. The common market's Stabex plan, for example, establishes a $450 million fund to help 46 African, Carribean and pacific states whose exports include such primary products as cocoa, coffee, copper, and cotton. UNCTAD (United Nations Conference of Trade and Development) extends the number of countries involved and the list of primary commodities to cover cocoa, coffee, copper, cotton, hard fibers, jute, rubber, sugar, tea and tin.

Promoting vocational training is also important in addition to investing more in social overhead capital. The important

bottleneck-breaking programs in raising levels-of-socieconomic development are the transportation and communication infrastructures that spur efficient industrial and agricultural output.

The most important of all is that poor countries must recognize that they are in an anxious race between demography and development. As noted in the previous sections, uncontrolled human fertility may pose a greater threat to the future well-being of any country than any other single factor. Slowing population growth is a prerequisite to solving the widening gaps in the levles-of-development between rich and poor countries. Also following the findings of the last section, the importance of a more equal income distribution in improving the level-of-socioeconomic development for LDC cannot be overemphasized. It has to be noted, however, that there is the possibility of conflict between economic growth and equality, at least in the short-run and at early stages of development. (Adelman (1973), Chenery (1974))

Table 1

LEVELS-OF-SOCIOECONOMIC DEVELOPMENT
INDEX FOR SELECTED YEARS

Country I.D.		1960 (U.S. = 100)	SM 1965 (U.S. = 100)	1970 (U.S. = 100)
1	IREL1	-19.637	-28.287	-30.947
2	GREC1	-63.411	-66.022	-64.125
3	GERM1	57.068	61.277	64.400
4	FRAN1	7.679	3.512	3.810
5	FINL1	2.796	-5.581	1.066
6	DENK1	47.757	46.988	40.956
7	BULG1	-11.499	1.237	-1.464
8	AUST1	20.297	17.885	18.052
9	MAUR1	-84.793	-90.287	-90.102
10	JAPN1	-15.178	-18.266	-1.473
11	ISRL1	-25.725	-39.156	-55.377
12	INDI1	-149.881	-178.582	-211.790
13	ECUD1	-147.036	-167.147	-181.785
14	CTIW1	-46.774	-47.841	-48.718
15	NZEA1	64.102	53.068	44.194
16	ENGL1	84.440	78.043	71.305
17	SWTZ1	58.331	59.838	62.369
18	SWED1	66.637	67.574	67.234
19	SPAN1	-58.953	-62.389	-67.057
20	POLE1	-1.443	-4.774	-9.202
21	NORW1	54.330	54.488	51.310
22	NETH1	64.005	66.450	64.995
23	LUXB1	486.651	585.734	626.435
24	ITAL1	-28.058	-34.958	-41.306
25	ETHP1	-170.886	-196.311	-213.528
26	YUGO1	-56.107	-65.520	-57.704
27	LEBN1	-54.117	-61.047	-60.845
28	KONG1	-12.154	-19.270	-19.406
29	VIET1	-139.147	-157.731	-176.352
30	DOMC1	-126.111	-145.466	-157.680

Table 1 Continued

Country I.D.		SM 1960 (U.S. = 100)	SM 1965 (U.S. = 100)	SM 1970 (U.S. = 100)
31	HAIT1	-173.768	-192.888	-206.562
32	MALT1	-47.992	-53.513	-58.736
33	NICR1	-123.278	-140.509	-151.415
34	SURN1	-97.749	-105.549	-108.704
35	TURK1	-123.238	-131.260	-139.076
36	URGY1	-52.460	-62.786	-66.870
37	ZAMB1	-177.426	-194.859	-204.133
38	ALGE1	-148.857	-164.194	-168.262
39	IRAQ1	-90.114	-100.566	-101.048
40	PAKT1	-156.392	-174.535	-190.788
41	RICO1	.094	5.784	16.004
42	MALY1	-99.038	-99.954	-98.215
43	PORT1	-32.822	-31.208	-32.426
44	HOND1	-101.170	-97.192	-98.020
45	THAI1	-108.092	-119.474	-114.827
46	CZEC1	31.622	23.786	20.367
47	TRIN1	-19.892	-21.370	-22.355
48	LEIS1	-72.548	-67.623	-65.914
49	USOA1	100.000	100.000	100.000
50	ELSV1	-108.800	-124.380	-137.622
51	UOSA1	-20.365	-23.382	-24.437
52	MEXI1	-110.872	-112.604	-119.580
53	CYPR1	-10.283	-10.951	-15.660
54	CEYL1	-71.645	-65.893	-67.758
55	CHIL1	-75.013	-65.465	-52.518
56	BRAZ1	-86.603	-96.041	-91.872
57	GUAT1	-137.152	-149.121	-150.635
58	COST1	-91.625	-101.459	-102.700
59	CANA1	76.913	75.678	82.850
60	EGYP1	-120.697	-114.163	-132.726
61	BELG1	59.973	73.642	86.340
62	HUNG1	-13.227	-1.679	-3.911

Table 1 Continued

Country I.D.		SM 1960 (U.S. = 100)	1965 (U.S. = 100)	1970 (U.S. = 100)
63	AUSL1	69.687	66.323	65.157
64	AGRT1	-18.974	-15.331	-13.591
65	SUDN1	-157.818	-166.202	-168.629
66	KENY1	-153.964	-158.742	-162.231
67	VENZ1	-89.263	-92.782	-91.460
68	GAMB1	-132.512	-146.989	-158.266
69	GUAD1	-63.905	-62.912	-59.596
70	BRUN1	-9.954	-.935	6.961
71	SKOR1	-98.859	-104.740	-101.605
72	PHIL1	-136.852	-148.862	-153.211
73	INDO1	-161.400	-179.041	-187.874
74	COLM1	-129.200	-138.442	-138.183
75	JAMC1	-107.521	-114.990	-112.381
76	CHAN1	-145.443	-153.116	-152.891
77	ROMN1	-16.160	-22.194	-27.565
78	ALBN1	-57.648	-66.142	-61.083
79	SAUD1	-81.631	-91.900	-96.434
80	JORD1	-80.437	-95.732	-106.027
81	IRAN1	-81.116	-89.462	-92.682
82	BURM1	-164.086	-182.227	-187.932
83	PERU1	-96.443	-114.326	-115.826
84	TUNS1	-121.655	-133.447	-143.268
85	UGAN1	-172.160	-191.957	-210.685
86	MORC1	-147.270	-167.649	-178.367
87	MADR1	-143.619	-151.541	-151.540
88	LIBR1	-145.362	-167.375	-187.150

Table 2

SPEEDS OF IMPROVEMENT IN THE LEVELS OF SOCIOECONOMIC DEVELOPMENT

Country I.D.		Δ R 1960-1965 (US. 1960 = 100)	Δ R 1965-1970 (US. 1960 = 100)
1	IREL1	+4.746	+12.229
2	GREC1	+6.241	+12.574
3	GERM1	+8.779	+16.973
4	FRAN1	+5.969	+12.260
5	FINL1	+5.565	+18.618
6	DENK1	+9.416	+16.239
7	BULG1	+12.007	+8.358
8	AUST1	+5.050	+13.659
9	MAUR1	+6.799	+7.305
10	JAPN1	+6.564	+18.443
11	ISRL1	+2.805	+5.227
12	INDI1	-2.978	-5.898
13	ECUD1	+1.467	+2.514
14	CTIW1	+5.004	+5.492
15	NZEA1	+3.494	+6.783
16	ENGL1	+2.258	+7.661
17	SWIZ1	+12.198	+22.785
18	SWED1	+11.288	+21.275
19	SPAN1	+6.216	+6.327
20	POLE1	+3.354	+5.679
21	NORW1	+11.767	+18.733
22	NETH1	+10.179	+22.149
23	LUXB1	+137.422	+278.917
24	ITAL1	+4.785	+8.336
25	ETHP1	-1.168	+1.694
26	YUGO1	+3.530	+10.104
27	LEBN1	+4.488	+6.286
28	KONG1	+4.773	+6.113
29	VIET1	+0.602	-1.560
30	DOMC1	+1.033	+3.003
31	HAIT1	+2.240	+4.629
32	MALT1	+4.465	+3.029
33	NICR1	+2.055	+2.589

Table 2 Continued

Country I.D.		Δ R 1960-1965 (US. 1960 = 100)	Δ R 1965-1970 (US. 1960 = 100)
34	SURN1	+11.208	+4.772
35	TURK1	+6.423	+5.716
36	URGY1	+2.521	+3.723
37	ZAMB1	+3.404	+5.136
38	ALGE1	+3.280	+6.702
39	IRAQ1	+3.406	+5.320
40	PAKT1	+1.550	+1.057
41	RICO1	+8.829	+11.740
42	MALY1	+9.976	+8.340
43	PORT1	+6.361	+7.489
44	HOND1	+10.895	+5.992
45	THAI1	+3.673	+7.722
46	CZEC1	+3.590	+7.726
47	TRIN1	+12.044	+10.940
48	LEIS1	+11.302	+7.532
49	USOA1	+8.017	+11.757
50	ELSV1	+2.630	+1.202
51	UOSA1	+5.539	+6.209
52	MEXI1	+9.870	+3.861
53	CYPR1	+6.894	+6.813
54	CEYL1	+10.664	+4.606
55	CHIL1	+13.359	+14.157
56	BRAZ1	+4.494	+8.822
57	GUAT1	+5.426	+7.479
58	COST1	+4.945	+9.602
59	CANA1	+10.891	+23.367
60	EGYP1	+11.382	+0.322
61	BELG1	+13.815	+30.139
62	HUNG1	+13.087	+11.419
63	AUSL1	+6.257	+9.788
64	ARGT1	+7.983	+7.697
65	SUDN1	+6.800	+6.531
66	KENY1	+8.360	+5.739
67	VENZ1	+10.670	+9.792
68	GAMB1	+2.908	+1.881
69	GUAD1	+9.860	+10.710
70	BRUN1	+16.315	+17.349
71	SKOR1	+6.134	+8.518

Table 2 Continued

Country I.D.		Δ R 1960-1965 (US. 1960 = 100)	Δ R 1965-1970 (US. 1960 = 100)
72	PHIL1	+4.743	+5.593
73	INDO1	+2.334	+3.839
74	COLM1	+7.748	+7.196
75	JAMC1	+8.143	+11.503
76	GHAN1	+7.649	+7.740
77	ROMN1	+2.825	+5.099
78	ALBN1	+3.100	+7.094
79	SAUD1	+4.727	+5.639
80	JORD1	+1.419	+0.568
81	IRAN1	+4.368	+4.238
82	BURM1	+2.506	+4.803
83	PERU1	+0.840	+6.208
84	TUNS1	+4.800	+2.786
85	UGAN1	+1.796	+1.680
86	MORC1	+0.805	+4.045
87	MADR1	+6.189	+8.608
88	LIBR1	+0.648	+2.434

* This table is derived from Table 1 by adjusting for the fact that the levels-of-development indices of the United States for 1960, 1965 and 1970 are respectively 100, 102.89 and 112.03 (where US 1960 = 100).

Table 3

A CLASSIFICATION OF ALLOCATION PATTERNS

Pattern	Country	1965 Population (mil)	1965 per Capita GNP $	1960-70 Growth of per Capita GNP %	Rel. Export Level*	Trade Orient. (TO)*	Prod. Orient. (PO)*	Capital Inflow %	Income Shares† Upper 20% %	Income Shares† Lower 40% %	Gini†	Level-of-Development Index (SM) 1965	Level-of-Development Index (SM) 1970
1. PRIMARY SPECIALIZATION‡	Tanzania	12	67	3.0	1.52	.05*	.06*	-.04	57.0	14.0	.48	—	—
	Uganda	9	83	2.2	1.28	.21	.14	-.01	47.1	17.1	.38	-191.96	-210.69
	Sudan	14	88	0.5	.96*	.19	.08	.04	50.3	14.2	.43	-166.20	-162.23
	Ceylon	11	142	2.3	1.19	.32	-.04*	.00	46.0	17.2	.37	-65.89	-67.76
	Sierra Leone	2	135	-0.5	1.23	.11*	.14	.04				—	—
	Zambia	4	179	4.6	2.36	.36	.16	-.17	57.0	14.6	.49	-194.86	-204.13
	Ivory Coast	4	179	4.8	1.37	-.04*	.11	-.03	55.0	17.5	.43	—	—
	Iran	25	218	5.7	1.39	.48	.22	-.06				—	—
	Iraq	8	249	2.6			.34	-.04	68.0	6.8	.61	-89.46	-92.68
	Malaysia	9	258	3.7	1.86	.31	.20	-.05	43.9	17.7	.36	-99.95	-98.22
	Saudi Arabia	7	271	6.3	2.30	.47	.47	-.42				-91.90	-96.43
	Nicaragua	2	330	3.2	.99*	.12	.12	.02				-140.51	-151.42
	Venezuela	9	830	2.5	1.09	.90	.31	-.10	58.0	9.7	.52	-92.78	-91.46
Total for 13 Countries		116											
2. BALANCED Normal Capital Inflows§	Thailand	31	110	4.5	1.40*	-.06	-.03	.01	57.7	12.9	.50	-119.47	-114.83
	Philippines	32	149	2.7	1.21	.13*	-.05	.01	55.4	11.6	.50	-148.86	-153.21
	Syria	5	174	5.4	.89	-.03	-.07	.00				—	—
	Morocco	13	179	1.5	.89	-.03	.02	-.01				-167.65	-178.37
	El Salvador	3	240	1.8	1.03	-.01	-.01	.02	52.0	12.7	.45	-124.38	-137.62
	Guatemala	4	278	1.9	.65*	.12*	.07	.03				-149.12	-150.64
	Peru	12	289	1.7	.72	-.06	.01	.01	60.0	6.5	.57	-114.33	-115.83
	Jamaica	2	420	2.7	1.24	-.06	-.07	.02	61.5	8.2	.56	-114.99	-112.38
	South Africa	18	552	3.4	1.46*	.06	.05	.00	58.0	6.2	.56	-20.38	-24.44

High Capital	Ghana	8	155	0.3	.70	.03		.08				-153.12	-152.89
Inflow	Costa Rica	2	360	3.1	.78	-.01	.00	.10	50.6	14.7	.43	-101.46	-102.70
	Spain	32	572	6.4	.73	-.05	.02	.04	45.2	17.0	.38	-62.39	-67.06
	Greece	9	585	6.2	.34	-.03	.13*	.13	49.5	21.0	.37	-66.02	-64.13
	Ireland	3	815	3.2	1.07	-.04		.09				-28.29	-30.95
Total for 14 Countries		174											
3. IMPORT													
SUBSTITUTION	India	481	84	1.3				.02	54.0	14.0	.46	-178.58	-211.79
	Bolivia	4	124	2.3	.95*	.19	-.06	.06				—	—
	Ecuador	5	195	1.7	.73	.34	.01	.00	73.5	6.4	.66	-167.15	-181.79
	Brazil	81	216	2.2	.94	.54	-.03	-.03	66.7	6.5	.61	- 96.04	-91.87
	Colombia	18	228	1.8	.68	.29	.04	-.01	59.5	9.4	.54	-136.44	-138.18
	Turkey	31	244	3.3	.44	.30	.12*	.01				-131.26	-139.08
	Chile	9	419	1.4	.53	.32	-.08	-.01	56.8	13.0	.49	-65.47	-52.52
	Mexico	43	434	3.5	.73	.35	-.02	00	65.8	10.2	.58	-112.60	-119.58
	Uruguay	3	497	-0.3	.64	.28	-.13	-.06	47.4	14.3	.42	-62.79	-66.87
	Argentina	22	787	1.6	.48	.67	-.01	-.01	52.0	17.3	.42	-15.33	-13.59
Total for 10 Countries		697											
4. INDUSTRIAL													
SPECIALIZATION	Kenya	10	95	3.4	1.72	-.21	-.12	-.01				-158.74	-162.23
Normal Capital	Egypt	29	138	1.6	1.37	-.10	-.16	.02				-114.16	-132.73
Inflow	China (Taiwan)	12	201	6.3	.78	-.57	-.11	.03	40.1	20.4	.32	-47.84	-48.72
	Yugoslavia	20	415	4.5	1.30	-.56	-.09	.01	41.5	18.5	.33	-65.52	-57.70
	Hong Kong	4	512	8.7	2.34	-1.03	-.34	00				-19.27	-19.41
	Singapore	2	522	5.5			-.11	.04				—	—
High Capital	Pakistan	114	84	2.9	.88	-.31	-.00*	.06	45.0	17.5	.37	-174.54	-190.79
Inflow	South Korea	28	123	6.4	.64	-.69	-.00*	.08	45.0	18.0	.36	-104.74	-101.61
	Tunisia	4	198	1.9	.82	-.30	-.12	.14	55.0	10.5	.50	-133.45	-143.27
	Portugal	9	361	5.2	.99	-.70	-.17	.05				-31.21	-32.43
	Lebanon	2	446	1.3	.67	-.31	-.06*	.21	61.0	13.0	.52	-61.05	-60.85
	Puerto Rico	2	936	5.9	1.97		-.08	.21	50.6	13.7	.44	5.78	16.00
	Israel	3	1,126	5.1	.62	-.28	-.10	.13	39.4	20.2	.30	-39.16	-55.37
Total for 13 Countries		239											

Source: Chenery and Syrquin (4), and this author.

* Deviations from large- and small-country regressions.

\+ *Source:* Chenery et al (3).

≠ Additional Group 1 countries in 1970: Nigeria, Indonesia, Mozambique.

§ Additional Group 2 countries in 1970: Malagasy Republic, Cameroon.

* Features that deviate from the criteria for each pattern.

Table 4

CORRELATION BETWEEN EACH OF THE 10 ALLOCATION INDICES AND THE LEVELS-OF-SOCIOECONOMIC DEVELOPMENT INDEX FOR 1965 AND 1970.

	PEARSON CORRELATION COEFFICIENTS									
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
SM										
1965	-.2838	.7408	.4102	.1386	-.2059	-.2744	-.0082	-.2483	.1818	-.2304
	(44)	(44)	(44)	(42)	(41)	(38)	(39)	(32)	(32)	(32)
	S=.031	S=.001	S=.003	S=.191	S=.098	S=.048	S=.480	S=.085	S=.160	S=.102

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
SM										
1970	-.3333	.7437	.4081	.1194	-.1892	-.2573	-.0315	-.2393	-.1723	-.2147
	(44)	(44)	(44)	(42)	(41)	(38)	(39)	(32)	(32)	(32)
	S=.014	S=.001	S=.003	S=.226	S=.118	S=.089	S=.424	S=.103	S=.173	S=.119

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