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# LEVEL OF DEVELOPMENT OF A COUNTRY: A POSSIBLE NEW APPROACH*

ABSTRACT. Human development is a multidimensional phenomenon. It depends on a number of non-monetary aspects of life (social indicators of development). Per capita gross domestic product (PCGDP) is a means to achieve these non-monetary aspects of life. To what extent PCGDP of a country is transformed into social development is an important phenomenon. Income elasticities of social indicators with respect to PCGDP reflect such relationship. This study attempts to find income elasticities of eight social indicators of development with respect to per capita real gross domestic product (PCRGDP) adjusted for purchasing power parity and expressed in international dollars for four points of time: 1960, 1970, 1980 and 1990. The income elasticities of social indicators may be identified as necessity, luxury and inferior. On the basis of the nature of the income elasticities of the social indicators of development the level of development of a country may be identified. This paper attempts to identify the level of development of a country on the basis of the nature of the income elasticities of the social indicators of development.

## INTRODUCTION

Level of development of a country for a long period was used to be measured by Per Capita Gross Domestic Product (PCGDP). But the experience of the 1950s and 1960s when a large number of countries achieved the overall growth targets of the United Nations but the levels of living of the masses of people remained for the most part unchanged. This signaled that something was very wrong with this narrow definition of development. In reality development of the level of livings of the human beings of a country is a multi-dimensional phenomenon. It depends on a number of non-monetary aspects of life (social indicators of development). In fact PCGDP is a means to achieve these aspects of life. Level of development a country has achieved depends to what extent PCGDP is transformed into social development. In reality, income has not uniformly translated into social development in all the countries. Sri Lanka, Chile, Costa Rica,

Jamaica, Tanzania and Thailand do far better in human development than they do in income showing that they have directed more of their income towards social development. On the other hand, Oman, Gabon, Saudi Arabia, Algeria, Mauritania, Senegal, Cameroon and United Arab Emirates, do considerably worse in human development, showing that they have not yet translated their income into human progress.

To what extent PCGDP is transformed into social indicators of development is an important phenomenon. For an individual consumer as income changes his consumption of different items changes. Similarly, as income of a country changes its consumption of different social indicators is expected to change. In case of an individual consumer change in the quantity of consumption of any item in response to his change in income is used to be measured by income elasticity of demand. The idea of income elasticity of demand could be used to reflect a country's responsiveness of each social indicator of development in response to change in income. According to the different values of the income elasticity of demand it is possible to divide all goods into three categories: necessity (N), luxury (L) and inferior (I). Income elasticity of those goods are positive but less than one, are denoted as necessity goods. In other words, these goods claim a declining proportion of the consumer's income as he becomes richer. In fact these goods are the essential goods in the consumption basket of a consumer. Luxury goods are the goods for which income elasticity is greater than one, that is, these goods bulk larger in consumer's budget as he become richer. In reality, these goods satisfy superfluous wants of the consumers. The luxury commodities enter into the consumption basket of a consumer after his necessities are fulfiled. The goods for which the value of income elasticity is negative are called inferior goods. These goods are such that consumer reduces his consumption of these goods as his income increases. In this context it is to be noted that goods cannot be rigidly separated into these categories. The characterization of a commodity as necessity, luxury and inferior is subject to time, place and level of income. What is luxury at a point of time may be regarded as necessity at some other point of time. What is luxury to a poor may be regarded as necessity to a rich. A commodity considered to be inferior to a rich man may be necessity to a poor man. Nevertheless

the classification is useful because the standard of living of a consumer may be judged by the necessities, inferiors and luxuries he enjoys. Similarly it is possible to identify the level of development of a country looking at the nature of the income elasticities of different social indicators of development. In this respect two salient features of income elasticity of demand of individual consumer may be noted: (a) Income elasticity of a commodity changes as the consumer becomes richer. (b) As a consumer's income rises more and more commodities become necessity items to him. These features are expected to be observed in case of income elasticity of social indicators for a country. In this context a Country's level of development may be denoted by very low, low, medium, high and very high.

We select eight social indicators of development such as urban population as percentage of total population (UPOP), life expectancy at birth (LIFE), calorie intake per capita as percentage of requirement (CALO), Infant survival rate (INFS), physician per 1000 of population (PHYS), adult literacy rate (ADLI), teacher-pupil ratio (primary) (TPRP), passenger car per 1000 of population (PCAR). Rationale for selecting these variables is presented in the next section of this paper. This study uses per capita real gross domestic product (PCRGDP).[1]

The countries may be labelled to achieve very low, low, medium, high or very high level of development according to the income elasticities of the eight selected social indicators of development with respect to PCRGDP. The countries characterized by LIFE, INFS and TPRP as the necessity items, PHYS, CALO and PCAR as the luxury items and ADLI and UPOP as the inferior items at very low level of development. The countries with low level of development are featured by LIFE, INFS, CALO and TPRP as the necessities and ADLI, UPOP, PHYS and PCAR as the luxuries. The medium level of development are featured by LIFE, INFS, CALO and TPRP as the necessities and ADLI, UPOP, PHYS and PCAR as the luxuries. The medium level of development are characterized by LIFE, INFS, ADLI, UPOP, CALO and TPRP as the necessity items, PHYS as the luxury item. The countries with high level of development are featured by LIFE, INFS, ADLIM, UPOP, CALO and TPRP as the necessities, PHYS as the luxury item and PCAR as the inferior item.

TABLE I

Level of development of a country

| development level indicators (1) | very low (2) | low (3) | middle (4) | high (5) | very high (6) |
|---|---|---|---|---|---|
| UPOP | I | L | N | N | N |
| LIFE | N | N | N | N | N |
| CALO | L | N | N | N | N |
| INFS | N | N | N | N | N |
| PHYS | L | L | L | L | L |
| ADLI | I | L | N | N | N |
| TPRP | N | N | N | N | L |
| PCAR | L | L | L | I | I |

• *Notes*:

N : Necessity

L : Luxury

I : Inferior

Very highly developed countries are characterized by LIFE, INFS, ADLI, UPOP and CALO as necessities, PHYS and TPRP as the luxuries and PCAR as the interior item. A synoptic view of these characterization of countries has been presented in Table I.

At very low level of development the countries are not in a position to expand ADLI and UPOP. These are inferior items of consumption and the countries prefer other social development to ADLI and UPOP. On the other hand PCAR is an inferior item for high and very high level of development. In fact at certain stage of development most of the inhabitants of the country could effort own car. Consequently, PCAR grow at lesser rate than income per capita.

## CHOICE OF INDICATORS

In the study the choice of indicators of social development is governed by two apparently conflicting principles: maximum coverage

of various aspects of social development and parsimony regarding the number of variables. The variables we choose are:

| Broad group[2] | Indicator | Indicator name used in the study |
|---|---|---|
| 1. Population | Urban population (% of total) | UPOP |
| 2. Demographic characteristics | Life expectancy (years) | LIFE |
| 3. Health and nutrition | Calorie supply percapita (% of requirement) | CALO |
| | Infant survival rate (per 100 of live births) | INFS |
| | Physician per 1000 of population | PHYS |
| 4. Education | Adult literacy rate (% of total population over age 15 yrs) | ADLI |
| | Teacher pupil ratio primary | TPRP |
| 5. Consumption | Passanger car per 1000 of population | PCAR |

All the indicators chosen here are related to the outcomes of a development process. These indicators are considered to be representative of the list of indicators within the broad group. Some of these indicators are also listed as representative indicators in Hicks – Streeten[3] study

| Broad group | Variable |
|---|---|
| Health | LIFE |
| Education | ADLI |
| Food | CALO |
| Water supply and sanitation | INFS |

Next few paragraphs present rationales behind choice of each indicator.

## UPOP
We incorporate percentage of total population residing in the urban areas with a view that this indicates the percentage of total population with urban facilities such as better sanitation, medical and

educational facilities, better communications, access to safe water etc. There is a close association between urbanization and industrialization. Moreover, "urbanization promotes values favourable to participation, entrepreneurship, and industrial growth; in particular, cities typically tend to innovate and accept change, since in the relatively impersonal and fragmented setting of urban life the all embracing bonds of traditional community systems are difficult to maintain".[4]

## LIFE

Life expectancy at birth directly reflects the levels of health, nutrition and income and thus indirectly links the employment and shelter. A low figure usually shows there is a sizeable percentage of the population facing poor living conditions and there is a lack of proper health facilities in the country.

## CALO

Calorie intake percapita as percentage of requirement is the third variable chosen in this study. For countries where available calorie per person, are below the level of requirement, there exists almost certainly a significant problem of malnutrition. The problem of malnutrition is closely associated with the problem of low productivity and ultimately low national income.

## INFS

Infant survival rate along with playing a significant role in interpreting life expectancy of a country reflects nutrition and sanitary conditions of the country. This indicator also reflects the prevalence of contagious decease in a country, as infants are more susceptible to these problem. This indicator shows very rapid response to many health policies. It is obvious that where infant mortality rate is very high there are many people living in conditions under which basic health needs are not met.

## PHYS

The health situation of a population depends mainly upon the health services available. The old industrialized countries have experienced slow but steady progress for countries in regard to health services. In the newly independent poor countries it is an enormous task to build

up health services approaching the levels now existing in the rich countries. It required education and various kinds of paramedical personnel on a large scale. It is expected that there are many more patients to share the service of one physician or nursing person in the poor countries than in the rich ones. Physician per thousand of population, therefore, provides a general picture of the quantity of health care available in a country.

## ADLI

Adult literacy rate is a direct measure of achievement of one basic right of the human beings, minimum education. This indicator is also well correlated with many other indices of quality of life such as measures of employment, income or health and therefore, adult literacy can be considered the most excellent overall quality of life indicator.

## TPRP

Teacher – pupil ratio in the primary level of education is the seventh variable selected in our study. This attitude gives an indication of quality of educational care available in the primary level of education. The higher the number of pupil per teacher lower is the quantity and quality of personal care available for each pupil in the school.

## PCAR

The last variable selected is the passenger car per thousand of population. This reflects the level of communication and transportation in the country. In fact, better the transportation system in a country more widespread is the medical and educational facilities.

## PCRGDP

The standard measure of economic growth is PCGDP. No doubt it is an acceptable indicator for measuring a specific country's economic performance, but its utility in cross-country study is not beyond question. The major problem associated with the choice of PCGDP as an indicator for comparing the level of economic development of a number of countries is the conversion of each country's PCGDP to a common currency. The most widely used method is to convert the PCGDP of each country to US Dollars using exchange rates between the country's currency and the US Dollar. This method implicitly

assume that the purchasing power parity of US $1 is equivalent in all the countries being compared. This assumption is not correct. For the purpose of comparison the indicator used to measure economic growth should be adjusted for purchasing power parity. Therefore, the indicator chosen in this study is Per Capita Real Gross Domestic Product (PCRGDP) which is adjusted for purchasing power parity and expressed in the International Dollars.

## DATA

The data for 1960, 1970, 1980 and 1990 on all the social indicators considered in this study have been obtained from different issues of World Tables and World Development Reports. Figures not available for these 4 years have been imputed in some cases by figures from around these years. The data for actual calorie per capita for 1990 are not available. We approximate these figures using the ratio between percentage of requirement and actual supply for the year 1980.

A few variable required to be transformed to make all the variables move in the same direction along with the level of development. Data obtained from the official sources mentioned are infant mortality rate, population per physician, pupil – teacher ratio. These variables are negatively related with the level of development while other variables have positive correlations with the level of development. We transform these variables as follows:

   a. Infant survival rate (INFS) = 1000 – Infant mortality rate
   b. Physician per 1000 of population = 1000 / population per physician.
   c. Teacher – pupil ratio = 1 / (pupil – teacher ratio.)

The data for per capita real gross domestic product (PCRGDP) have been taken from Summers and Heston (1984, 1988).[5]

## THE SAMPLE

The principle we follow in choosing countries for our sample is wide representation from all income groups and all regions. But uniformity in number representing each income group or region cannot be maintained as our objective is to obtain uniform sample for

four years under study and to have all the variables for all samples. Ultimately, our sample consists of 92 countries. These countries may be subdivided into three income groups : high income, middle income and low income following the World Bank classification of countries for 1990 per capita gross domestic product. List of the sample countries is provided in the Appendix.

## METHODOLOGY

The first step in this respect is to choose the appropriate form of the equation explaining the relationship between PCRGDP and each of the eight social indicators. In this context, ordinary least squares (OLS) method is used to find the best fit equation where each of the social indicators is the dependent variable and PCRGDP is the independent variable. In this respect, most often used alternative forms of equations has been considered. The attempted forms here are:

$$X = A + BY$$
$$X = A + B\ln Y$$
$$\ln X = A + BY$$
$$\ln X = A + B\ln Y$$
$$X = A + B/Y$$
$$\ln X = A + B/Y$$
$$X = A + BY + Cy^2$$
$$X = A + BY + C/Y$$
$$X = A + B\ln Y + C/Y$$
$$X = A + B\ln Y + C/Y$$

Where, X denotes dependent variable, i.e. any one of the eight social indicators used in this study.

Y denotes independent variable, i.e. PCRGDP.

A, B, C are the parameters.

The best fit form of the equation for each social indicator for each of the four years 1960, 1970, 1980 and 1990 has been chosen. The choice of the best fit form is based on the value of the coefficient of determination adjusted for degrees of freedom (R – Bar Square) and F – ratio. The forms selected are given below in Table II.

TABLE II

Selected form of the equation for eight social indicators

| Indicators | 1960 | 1970 | 1980 | 1990 |
|---|---|---|---|---|
| UPOP | $X = A + B\ln Y$ | $X = A + B\ln Y$ | $X = A + B\ln Y$ | $X = A + B\ln Y$ |
| LIFE | $X = A + B\ln Y$ | $X = A + B\ln Y$ | $X = A + B\ln Y$ | $X = A + B\ln Y$ |
| CALO | $X = A + B\ln Y$ | $X = A + BY$ | $X = A + B\ln Y$ | $X = A + B\ln Y$ |
| INFS | $X = A + B\ln Y$ | $X = A + B\ln Y$ | $X = A + B\ln Y$ | $X = A + B\ln Y$ |
| PHYS | $\ln X = A + B\ln Y$ | $\ln X = A + B\ln Y$ | $\ln X = A + B\ln Y$ | $\ln X = A + B\ln Y$ |
| ADLI | $X = A + B\ln Y$ | $X = A + B\ln Y$ | $X = A + B\ln Y$ | $X = A + B\ln y$ |
| TPRP | $X = A + B\ln Y$ | $\ln X = A + B\ln Y$ | $\ln X = A + B\ln Y$ | $\ln X = A + B\ln Y$ |
| PCAR | $\ln X = A + B\ln Y$ | $X = A + BY$ | $\ln X = A + B\ln Y$ | $\ln X = A + B\ln Y$ |

CHANGING NATURE OF SOCIAL INDICATORS OF DEVELOPMENT

Table III draws attention to the changing nature of the eight social indicators in respect of their income elasticities for the years 1960, 1970, 1980 and 1990.[6] As is evident from the table, LIFE, CALO and INFS are depicted as necessity items at all levels of income and for all the years under study. This throws light to the fact that LIFE, CALO and INFS are the most necessity items in the consumption basket of a country (in respect of social indicators of life) such as the staple foods in the consumption basket of a household.

On the contrary PHYS is a luxury item at all levels of income through out the period under study. This implies that even in 1990 for the country with the highest level of income PHYS is a luxury item and have to spend proportionately more than their increment in PCRGDP.

PCAR is a luxury item for 1960, 1970 and 1980 for all the 92 countries under study but is an inferior item for 1990 for all countries.

TPRP picturises as a necessity item in 1960, 1970, 1980 for all the countries and for almost all the countries in 1990. Only for very high income countries such as Federal Republic of Germany (10708),[7] Denmark (10884), Canada (121963), USA (12532), Norway (12623) TPRP is found to be a luxury item for 1990. This draws attention to the fact that TPRP in those countries has reached such a position that if these countries intend to increase TPRP further they have to spend very high proportion of their PCRGDP for that purpose.

TABLE III

Nature of the social indicators of life: Inter temporal variation

| Indicators (1) | 1960 | | | 1970 | | | 1980 | | | 1990 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N (2) | L (3) | I (4) | N (5) | L (6) | I (7) | N (8) | L (9) | I (10) | N (11) | L (12) | I (13) |
| UPOP | X | >243 <657 | >657 | >650 | <650 | X | <565 | >565 | X | >310 | >310 | X |
| LIFE | all | X | X | all | X | X | all | X | X | all | X | X |
| CALO | all | X | X | all | X | X | all | X | X | all | X | X |
| INFS | all | X | X | all | X | X | all | X | X | all | X | X |
| PHYS | all | X | X | all | X | X | all | X | X | all | X | X |
| ADLI | 7546 | >208 <546 | <208 | >500 | <500 | X | <300 | >300 | X | all | X | X |
| TPRP | all | X | X | all | X | X | all | X | X | all | X | X |
| PCAR | all | X | X | all | X | X | all | X | X | all | X | X |

• *Notes:*

N : Necessity

L : Luxury

I : Inferior

all: All countries,

X : No country,

> greater than PCRGDP mentioned

< less that PCRGDP mentioned.

For UPOP and ADLI we find income elasticities greater than unity at very low levels of income and income elasticities lie between zero and unity for the rest of the countries in 1970 and 1980. This implies that for these two years UPOP and ADLI are luxury items for very low income countries and necessities for the rest. As item of consumption the consumer durables in an individual's consumption basket. Such as radio, television, video cassette recorder, cooking range etc: a consumer with very low income treats these items as luxury items with a view that if these items have to be entered into the consumption basket of such a consumer he has to spend a larger proportion of his income on these items. The same items become necessities to a consumer when his income crosses certain level. In 1990 ADLI observed to be a necessity item for all the 92 sample countries. In 1960 at the very low level of income ADLI and UPOP both were inferior items. For Malawi ADLI and UPOP both were found to be inferior items and for Rwanda UPOP was an inferior item in 1960. This implies that for very low income country expenditure for expansion of urbanization and expansion of adult literacy may be reduced with slight increase in PCRGDP. These countries have to spend first on the necessity social items such as INFS, CALO and LIFE.

TABLE IV

Chaning level of social development of the sample countries: 1960–1990

| Country | UPOP | | | | LIFE | | | | CALO | | | | INFS | | | | PHYS | | | | ADLI | | | | TPRP | | | | PCAR | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |
| ALGERIA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| ARGENTINA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| AUSTRALIA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| AUSTRIA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| BANGLADESH | L | L | L | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| BARBADOS | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| BELGIUM | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| BENIN | L | L | L | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | L | N | N | N | N | N | N | L | L | L | L |
| BOLIVIA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | L | L | L | L |
| BRAZIL | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| BURMA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | L | N | N | N | N | N | N | L | L | L | L |
| BURUNDI | L | L | L | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | L | N | N | N | N | N | N | L | L | L | L |
| CAFRREP | L | N | L | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | L | N | N | N | N | N | N | L | L | L | L |
| CAMEROON | L | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | L | N | N | N | N | N | L | L | 1 | 1 | L |
| CANADA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | L | L | L | L | L |
| CHILE | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| COLOMBIA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| CONGO | L | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| COSTARICA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| CYPRUS | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |

Table IV. Continued

| Country | UPOP | | | | LIFE | | | | CALO | | | | INFS | | | | PHYS | | | | ADLI | | | | TPRP | | | | PCAR | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |
| DENMARK | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | L | L | L | L | L |
| DOM REP | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| ECUADOR | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| EGYPT | L | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| ELSALVADOR | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| ETHIOPIA | L | L | L | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | L | N | N | N | N | N | N | N | L | L | L | L |
| FINLAND | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| FRANCE | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| GAMBIA | L | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| GHANA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| GREECE | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| GUATEMALA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| GUINEA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| GUYANA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| HAITI | L | L | L | L | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | L | N | N | N | N | N | N | N | L | L | L | L |
| HONDURSU | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| HONGKONG | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| ICELAND | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| INDIA | L | L | L | L | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | L | N | N | N | N | N | N | N | L | L | L | L |

Table IV. Continued

| Country | UPOP | | | | LIFE | | | | CALO | | | | INFS | | | | PHYS | | | | ADLI | | | | TPRP | | | | PCAR | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |
| IRAN | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| IRAQ | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| IRELAND | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| ISRAEL | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | N | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| ITALY | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | N | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| JAPAN | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | N | N | N | N | N | N | N | L | L | L | L | L |
| JORDAN | N | L | L | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| KENYA | L | L | L | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| KOREAREP | L | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | L | L | L | L | L |
| LIBERIA | N | L | L | L | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| MADAGASCAR | L | L | L | L | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | L | N | N | N | N | N | N | L | L | L | L |
| MALAWI | I | L | L | L | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| MALAYSIA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| MAURITIUS | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| MEXICO | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| MOROCCO | L | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | L | L | L | L | L |
| MOZAMBIQUE | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| NETHERLANDS | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| NEWZEALAND | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |
| NICARAGUA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | L |

Table IV. Continued

| Country | UPOP 60 | 70 | 80 | 90 | LIFE 60 | 70 | 80 | 90 | CALO 60 | 70 | 80 | 90 | INFS 60 | 70 | 80 | 90 | PHYS 60 | 70 | 80 | 90 | ADLI 60 | 70 | 80 | 90 | TPRP 60 | 70 | 80 | 90 | PCAR 60 | 70 | 80 | 90 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |
| NIGER | L | L | L | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | L | N | N | N | N | N | N | L | L | L | I |
| NIGERIA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| NORWAY | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | L | N | N | N | N | N | N | L | L | L | I |
| PAKISTAN | L | L | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | L | L | L | I |
| PANAMA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| PAPUANG | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| PARAGUAG | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| PERU | N | L | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| PHILIPPINES | L | L | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| PORTUGAL | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| RWANDA | I | L | L | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | L | N | N | N | N | N | N | L | L | L | I |
| SIERRALEONE | L | L | L | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | L | L | L | I |
| SINGAPORE | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| SPAIN | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| SRILANKA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| SUDAN | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| SURINAME | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| SWEDEN | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | I |
| SYRIANAR | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | L | L | L | I |
| TANZANIA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | L | N | N | N | N | N | N | L | L | L | I |

*Table IV, Continued*

| Country | UPOP | | | | LIFE | | | | CALO | | | | INFS | | | | PITYS | | | | ADLI | | | | TPRP | | | | PCAR | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 |
| | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 | 60 | 70 | 80 | 90 |
| THAILAND | L | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | — |
| TOGO | L | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | — |
| TRIN&TOB | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | — |
| TURKEY | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | — |
| UK | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | L | L | L | — |
| UPVOLTA | L | N | L | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | L | L | N | N | N | N | N | N | L | L | L | — |
| URUGUAY | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | — |
| USA | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | L | N | N | N | N | N | L | L | L | — |
| VENEZUEL | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | — |
| ZAIRE | L | L | L | L | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | L | L | N | N | N | N | N | N | L | L | L | — |
| ZAMBIA | L | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | — |
| SIMBABWE | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | L | L | L | L | N | N | N | N | N | N | N | N | L | L | L | — |

*Notes:*

CAFREP: CENTRAL AFRICAN REPUBLIC
DOMREP: DOMINICAN REPUBLIS
FRG: FEDERAL REPUBLIC OF GERMANY
KOREAREP: REPUBLIC OF KOREA
PAPUANG: PAPUA NEW GUINEA
TRIN & TOB: TRINIDAD & TOBAGO
USA: UNITED STATES OF AMERICA

Table IV presents changing patterns of social development of sample countries in terms of income elasticities of social indicators of development with respect to PCRGDP. The table picturises that a number of countries started at low level of social development in 1960. Eg. Ethiopia, Bangladesh, Benin, Burundi, Central African Republic, Haiti, India, Kenya, Niger, Tanzania, Sierra Leone, Upper Volta, Zaire, Cameroon, Egypt, Morocco, Congo, Gambia, Liberia, Philippines, Thailand, Togo, Pakistan. They have moved for betterment at different points of time. For example, Cameroon, Egypt, Morocco, Congo, Gambia, Liberia, Philippines, Thailand, Togo uplifted in 1970; Bangladesh, Burma, Burundi, Central African Republic, Haiti, India, Kenya, Niger, Tanzania in 1980; Upper Volta and Zaire in 1990. The table also portrays that Malawi and Rwanda were at very low level of social development in 1960 and improved to low level in 1970. The table further evidences that Canada, Denmark, Federal Republic of Germany, Norway and United States reached very high level of social development in 1990.

## CONCLUDING REMARKS

The discussions so far throws light to some important aspects of development. The nature of income elasticity of a particular social indicator changes to a country as the country becomes richer. For example adult literacy was a luxury commodity to a number of countries (Bangladesh, Benin, Burundi, Ethiopia, Haiti, Kenya, Madagascar, Niger, Sierra Leone, Zaire etc) in 1960 and 1970 but it becomes necessity in 1980 and 1990 with rise in their income. Another important finding of the study is that as a country becomes richer more and more indicators of social development become necessities to the country. For example, in 1960 LIFE, CALO, INFS, TPRP were necessity items for India but in 1990 UPOP, ADLI were added to the list. These two aspects are similar to the consumer's behaviour with change in income.

This approach seems to have a few significant properties over PCGDP in measuring the level of development of a country. While measuring a country's level of development we are more interested to have the real picture of the standard of living of the people of the country and the social benefits they enjoy rather than their level

of per capita income only. This approach enables us to have a real picture of upliftment of the level of living of a country but PCGDP presents only a distorted picture. Sri Lanka may be considered as an example: according to PCGDP Sri Lanka is in the low income group but according to the present approach Sri Lanka is very close to the many high income countries. Moreover, this approach throws light to each aspect of social development separately and presents the changing scenario of each country in respect to each aspect of social development while PCGDP throws light to the average level of economic development of a country and change in the average level of economic development.

In fine it may be noted that the findings of the study are important in formulation of the policy for social indicators of development of the countries.

## APPENDIX A

*List of Countries*

*High Income Group*
Australia, Austria, Belgium, Canada, Finland, France, FRG, Hong Kong, Iceland, Italy, Japan, Netherlands, New Zealand, Norway, Singapore, Spain, Sweden, U.K., U.S.A.

*Middle Income Group*
Algeria, Argentina, Barbados, Bolivia, Cameroon, Chile, Colombia, Congo, Costa Rica, Cyprus, Dominican Republic, Ecuador, El Salvador, Greece, Guatemala, Guyana, Iran, Iraq, Ireland, Israel, Jordan, Korea Republic, Malaysia, Mauritius, Mexico, Morocco, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Portugal, Suriname, Syrian Arab Republic, Thailand, Trinidad and Tobago, Turkey, Uruguay, Venezuela.

*Low Income Group*
Bangladesh, Burma, Burundi, Central African Republic, Egypt, Ethiopia, Gambia, Guinea, Haiti, Honduras, India, Kenya, Liberia, Malaysia, Malawi, Mozambique, Nicaragua, Niger, Nigeria, Pakistan, Rwanda, Sierra Leone, Sri Lanka, Sudan Tanzania, Togo, Upper Volta, Zaire, Zambia, Zimbabwe.

APPENDIX B

*Inter-Country Inter-temporal Income Elasticities of selected social indicators of Life*

TABLE B.1

1960

| Country | LIFE | CALO | INFS | ADLI | PCAR | UPOP | PHYS | TPRP |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| ALGERIA | 0.2465 | 0.1156 | 0.0737 | 0.5723 | 1.8503 | 0.6220 | 1.6133 | 0.2507 |
| ARGENTINA | 0.2165 | 0.1868 | 0.0708 | 0.4328 | 1.8503 | 0.4606 | 1.6133 | 0.2196 |
| AUSTRALIA | 0.1914 | 0.2963 | 0.0679 | 0.342 | 1.8503 | 0.3601 | 1.6133 | 0.1938 |
| AUSTRIA | 0.2048 | 0.2301 | 0.0695 | 0.3885 | 1.8503 | 0.4108 | 1.6133 | 0.2076 |
| BANGLANDESII | 0.3533 | 0.0370 | 0.0810 | 1.1962 | 1.8503 | 2.6163 | 1.6133 | 0.3618 |
| BARBADOS | 0.2429 | 0.1219 | 0.734 | 0.5533 | 1.8503 | 0.5996 | 1.6133 | 0.2469 |
| BELGIUM | 0.2003 | 0.2502 | 0.0689 | 0.3726 | 1.8503 | 0.3930 | 1.6133 | 0.2030 |
| BENIN | 0.3291 | 0.0451 | 0.0797 | 1.3705 | 1.8503 | 1.9648 | 1.6133 | 0.3365 |
| BOLIVIA | 0.2968 | 0.0689 | 0.0769 | 0.8491 | 1.8503 | 0.9633 | 1.6133 | 0.2924 |
| BRAZIL | 0.2650 | 0.898 | 0.0753 | 0.6824 | 1.8503 | 0.7543 | 1.6133 | 0.2697 |
| BURMA | 0.4045 | 0.0261 | 0.0834 | 6.1288 | 1.8503 | 42.4960 | 1.6133 | 0.4157 |
| BURUNDI | 0.3188 | 0.0495 | 0.0790 | 1.2082 | 1.8503 | 1.4534 | 1.6133 | 0.3258 |
| CAFRREP | 0.3098 | 0.0540 | 0.0785 | 1.0883 | 1.8503 | 1.2834 | 1.6133 | 0.3130 |
| CAMERON | 0.3066 | 0.0558 | 0.0783 | 1.0500 | 1.8503 | 1.2304 | 1.6133 | 0.1921 |
| CANADA | 0.1897 | 0.3061 | 0.0676 | 0.3375 | 1.8503 | 0.3541 | 1.6133 | 0.1921 |
| CHILE | 0.2285 | 0.1525 | 0.0720 | 0.4839 | 1.8503 | 0.5189 | 1.6133 | 0.2321 |
| COLOMBIA | 0.2542 | 0.1037 | 0.0744 | 0.6153 | 1.8503 | 0.6732 | 1.6133 | 0.2586 |
| CONGO | 0.2907 | 0.0660 | 0.0772 | 0.8839 | 1.8503 | 1.0084 | 1.6133 | 0.2964 |
| COSTARICA | 0.2480 | 0.1132 | 0.0738 | 0.5804 | 1.8503 | 0.6316 | 1.6133 | 0.2522 |
| CYPRUS | 0.2433 | 0.1213 | 0.0734 | 0.5552 | 1.8503 | 0.3646 | 1.6133 | 0.1951 |
| DENMARK | 0.1926 | 0.2891 | 0.0680 | 0.3470 | 1.8503 | 0.3646 | 1.6133 | 0.1951 |
| DOM REP | 0.2639 | 0.0910 | 0.0752 | 0.6754 | 1.8503 | 0.7457 | 1.6133 | 0.2686 |
| ECUADOR | 0.2786 | 0.0758 | 0.0763 | 0.7810 | 1.8503 | 0.8766 | 1.6133 | 0.2839 |
| EGYPT | 0.3075 | 0.0553 | 0.0783 | 1.0603 | 1.8503 | 1.2445 | 1.6133 | 0.3139 |
| ELSALVADO | 0.2788 | 0.0756 | 0.0763 | 0.7826 | 1.8503 | 0.8786 | 1.6133 | 0.2841 |
| ETHIOPIA | 0.3867 | 0.0292 | 0.0826 | 3.6055 | 1.8503 | 0.8786 | 1.6133 | 0.3969 |
| FINLAND | 0.2026 | 0.2395 | 0.0692 | 0.3808 | 1.8503 | 0.4021 | 1.6133 | 0.2054 |
| FRANCE | 0.1993 | 0.2549 | 0.0688 | 0.3691 | 1.8503 | 0.3892 | 1.6133 | 0.2020 |
| FRG | 0.1931 | 0.2864 | 0.0681 | 0.3486 | 1.8503 | 0.3664 | 1.6133 | 0.1957 |
| GAMBIA | 0.3001 | 0.0596 | 0.0778 | 0.9775 | 1.8503 | 1.1320 | 1.6133 | 0.3063 |
| GHANA | 0.2581 | 0.0984 | 0.0747 | 0.6384 | 1.8503 | 0.7009 | 1.6133 | 0.2626 |
| GREECE | 0.2386 | 0.1303 | 0.0730 | 0.5310 | 1.8503 | 0.5735 | 1.6133 | 0.2424 |
| GUATEMALA | 0.2644 | 0.9094 | 0.0752 | 0.6789 | 1.8503 | 0.7500 | 1.6133 | 0.2692 |
| GUINEA | 0.2822 | 0.0726 | 0.0766 | 0.8100 | 1.8503 | 0.9133 | 1.6133 | 0.2876 |
| GUYANA | 0.2552 | 0.1022 | 0.0745 | 0.6215 | 1.8503 | 0.6805 | 1.6133 | 0.2597 |

*Table B.1 Continued*

| Country | LIFE | CALO | INFS | ADLI | PCAR | UPOP | PHYS | TPRP |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| HAITI | 0.3505 | 0.0378 | 0.0809 | 1.8378 | 1.8503 | 2.4722 | 1.6133 | 0.3589 |
| HONDURUS | 0.2809 | 0.0737 | 0.0764 | 0.7994 | 1.8503 | 0.8998 | 1.6133 | 0.2863 |
| HONGKONG | 0.2644 | 0.0904 | 0.0752 | 0.6789 | 1.8503 | 0.7500 | 1.6133 | 0.2692 |
| ICELAND | 0.2001 | 0.2508 | 0.0689 | 0.3721 | 1.8503 | 0.7500 | 1.6133 | 0.2692 |
| INDIA | 0.3314 | 0.0442 | 0.0799 | 1.4107 | 1.8503 | 1.7568 | 1.6133 | 0.3389 |
| IRAN | 0.2577 | 0.0989 | 0.0747 | 0.6360 | 1.8503 | 0.6980 | 1.6133 | 0.2622 |
| IRAQ | 0.2453 | 0.1178 | 0.0736 | 0.5654 | 1.8503 | 0.6139 | 1.6133 | 0.2493 |
| IRELAND | 0.2227 | 0.1681 | 0.0714 | 0.4582 | 1.8503 | 0.4895 | 1.6133 | 0.2260 |
| ISRAEL | 0.2167 | 0.1859 | 0.0708 | 0.4338 | 1.8503 | 0.4618 | 1.6133 | 0.2199 |
| ITALY | 0.2125 | 0.2001 | 0.0703 | 0.4174 | 1.8503 | 0.4432 | 1.6133 | 0.2156 |
| JAPAN | 0.2285 | 0.1533 | 0.0720 | 0.4825 | 1.8503 | 0.5173 | 1.6133 | 0.2316 |
| JORDAN | 0.2809 | 0.0737 | 0.0765 | 0.7994 | 1.8503 | 0.8998 | 1.6133 | 0.2863 |
| KENYA | 0.3456 | 0.0393 | 0.0806 | 1.7105 | 1.8503 | 2.2472 | 1.6133 | 0.3538 |
| KOREAREP | 0.2936 | 0.0639 | 0.0774 | 0.9115 | 1.8503 | 1.0445 | 1.6133 | 0.2995 |
| LIBERIA | 0.2862 | 0.0693 | 0.0769 | 0.8439 | 1.8503 | 0.9566 | 1.6133 | 0.2918 |
| MADAGASCAR | 0.2966 | 0.0619 | 0.0776 | 0.9406 | 1.8503 | 1.0828 | 1.6133 | 0.3025 |
| MALAWI | 0.4365 | 0.0219 | 0.0847 | −56.9952 | −1.8503 | −6.3622 | 1.6123 | 0.4495 |
| MALAYSIA | 0.2668 | 0.0876 | 0.0754 | 0.6951 | 1.8503 | 0.7698 | 1.6133 | 0.2717 |
| MAURITIUS | 0.2661 | 0.0884 | 0.0753 | 0.6902 | 1.8503 | 0.7638 | 1.6133 | 0.2709 |
| MEXICO | 0.2379 | 0.1316 | 0.0729 | 0.5278 | 1.8503 | 0.5698 | 1.6133 | 0.2417 |
| MOROCCO | 0.2986 | 0.0606 | 0.0777 | 0.9616 | 1.8503 | 1.1107 | 1.6133 | 0.3047 |
| MOZAMBIQUE | 0.2775 | 0.0768 | 0.0762 | 0.7723 | 1.8503 | 0.8657 | 1.6133 | 0.2827 |
| NETHERLANDS | 0.1989 | 0.2570 | 0.0688 | 0.3776 | 1.8503 | 0.8657 | 1.6133 | 0.2827 |
| NEWZEALAND | 0.1962 | 0.2702 | 0.0684 | 0.3586 | 1.8503 | 0.3375 | 1.6133 | 0.1988 |
| NICARAGUA | 0.2661 | 0.0884 | 0.0753 | 0.6902 | 1.8503 | 0.7638 | 1.6133 | 0.2709 |
| NIGER | 0.3482 | 0.0385 | 0.0807 | 1.7754 | 1.8503 | 0.3607 | 1.6123 | 0.3565 |
| NIGERIA | 0.2965 | 0.0847 | 0.0756 | 0.7133 | 1.8503 | 0.7922 | 1.6133 | 0.2744 |
| NORWAY | 0.1993 | 0.2549 | 0.0688 | 0.3691 | 1.8503 | 0.3982 | 1.6133 | 0.2020 |
| PAKISTAN | 0.3378 | 0.0419 | 0.0802 | 1.5357 | 1.8503 | 1.9550 | 1.6133 | 0.3456 |
| PANMA | 0.2515 | 0.1077 | 0.0741 | 0.5998 | 1.8503 | 0.6546 | 1.6133 | 0.2558 |
| PAPUANG | 0.2866 | 0.0691 | 0.0769 | 0.8470 | 1.8503 | 0.9606 | 1.6133 | 0.0922 |
| PARAGUAY | 0.2719 | 0.0822 | 0.0758 | 0.7306 | 1.8503 | 0.8136 | 1.6133 | 0.2769 |
| PERU | 0.2470 | 0.1149 | 0.0737 | 0.5748 | 1.8503 | 0.6249 | 1.6133 | 0.2511 |
| PHILIPPINES | 0.2919 | 0.0651 | 0.0773 | 0.8949 | 1.8503 | 1.0227 | 1.6133 | 0.2977 |
| PORTUGAL | 0.2503 | 0.1095 | 0.0740 | 0.5932 | 1.8503 | 0.6467 | 1.6133 | 0.2546 |
| RWANDA | 0.4086 | 0.0255 | 0.0836 | 7.212 | 1.8503 | −1042.5692 | 1.6133 | 0.4200 |
| SIERRAL | 0.3404 | 0.0410 | 0.0803 | 1.5908 | 1.8503 | 2.0450 | 1.6133 | 0.3483 |
| SINGAPORE | 0.2552 | 0.1023 | 0.0744 | 0.6211 | 1.8503 | 0.6801 | 1.6133 | 0.2596 |
| SPAIN | 0.2263 | 0.1581 | 0.0718 | 0.4740 | 1.8503 | 0.7256 | 1.6133 | 0.2660 |
| SRILANKA | 0.2613 | 0.0941 | 0.0750 | 0.6589 | 1.8503 | 0.7256 | 1.6133 | 0.2660 |

*Table B.1 Continued*

| Country | LIFE | CALO | INFS | ADLI | PCAR | UPOP | PHYS | TPRP |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| SUDAN | 0.2791 | 0.0753 | 0.0764 | 0.7851 | 1.8503 | 0.8817 | 1.6133 | 0.2844 |
| SURINAME | 0.2414 | 0.1248 | 0.0732 | 0.5451 | 1.8503 | 0.5901 | 1.6133 | 0.2453 |
| SWEDEN | 0.1890 | 0.3103 | 0.0675 | 0.3352 | 1.8503 | 0.5901 | 1.6133 | 0.1914 |
| SYRIANAR | 0.2755 | 0.0786 | 0.0761 | 0.7573 | 1.8503 | 0.8468 | 1.6133 | 0.2807 |
| TANZANIA | 0.3830 | 0.0299 | 0.0825 | 3.3088 | 1.8503 | 6.1504 | 1.6133 | 0.3930 |
| THAILAND | 0.3180 | 0.0499 | 0.0790 | 1.1963 | 1.8503 | 2.0557 | 1.6133 | 0.3486 |
| TOGO | 0.3407 | 0.0709 | 0.0803 | 1.5972 | 1.8503 | 2.0557 | 1.6133 | 0.3486 |
| TRIN&TOB | 0.2141 | 0.1946 | 0.0705 | 0.4235 | 1.8503 | 0.4501 | 1.6133 | 0.2602 |
| TURKEY | 0.2558 | 0.1014 | 0.0745 | 0.6248 | 1.8503 | 0.6845 | 1.6133 | 0.2602 |
| UK | 0.1966 | 0.2681 | 0.0685 | 0.3600 | 1.8503 | 0.3791 | 1.6133 | 0.1992 |
| UPPERVOLTA | 0.3970 | 0.0273 | 0.0831 | 4.7525 | 1.8503 | 14.1274 | 1.6133 | 0.4077 |
| URUGUAY | 0.2091 | 0.2129 | 0.0699 | 0.4042 | 1.8503 | 0.4283 | 1.6133 | 0.2120 |
| USA | 0.1814 | 0.3597 | 0.0665 | 0.3120 | 1.8503 | 0.3262 | 1.6133 | 0.1836 |
| VENEZUELA | 0.2037 | 0.2349 | 0.0693 | 0.3845 | 1.8503 | 0.4063 | 1.6133 | 0.2065 |
| ZAIRE | 0.3835 | 0.0298 | 0.0825 | 3.3477 | 1.8503 | 6.2862 | 1.6133 | 0.3936 |
| ZAMBIA | 0.2902 | 0.0663 | 0.0772 | 0.8792 | 1.8503 | 1.0022 | 1.6133 | 0.2959 |
| ZIMBABWE | 0.2675 | 0.869 | 0.0755 | 0.6995 | 1.8503 | 0.7752 | 1.6133 | 0.2723 |

*Notes:*  Dom Rep: Dominican Republic; FRG: Federal Republic of Germany
Korearep: Republic of Korea; Papuang: Papua New Guinea
Syrinar: Syrian Arab Republic; Trin & Tob: Trinidad and Tobago

TABLE B.2
1970

| Country | LIFE | CALO | INFS | ADLI | PCAR | UPOP | PHYS | TPRP |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| ALGERIA | 0.2056 | 0.9995 | 0.0619 | 0.4059 | 1.0047 | 0.5919 | 1.4524 | 0.2781 |
| ARGANTINA | 0.1806 | 0.9997 | 0.0594 | 0.3658 | 1.0024 | 0.4181 | 1.4524 | 0.2781 |
| AUSTRALIA | 0.1603 | 0.9999 | 0.0570 | 0.2910 | 1.0012 | 0.3232 | 1.4524 | 0.2781 |
| AUSTRIA | 0.1681 | 0.9998 | 0.0580 | 0.3179 | 0.0016 | 0.3566 | 1.4524 | 0.2781 |
| BANGLADESH | 0.2033 | 0.9990 | 0.0675 | 1.3743 | 1.0179 | 2.5921 | 1.4524 | 0.2781 |
| BARBADOS | 0.1862 | 0.9997 | 0.0600 | 0.3892 | 1.0028 | 0.4490 | 1.4524 | 0.2781 |
| BELGIUM | 0.1643 | 0.9998 | 0.0575 | 0.3045 | 1.0014 | 0.3399 | 1.4524 | 0.2781 |
| BENIN | 0.2709 | 0.9983 | 0.0667 | 1.1242 | 1.0152 | 1.8261 | 1.4524 | 0.2781 |
| BOLIVIA | 0.2255 | 0.9992 | 0.0636 | 0.6123 | 1.0071 | 0.7745 | 1.4524 | 0.2781 |
| BRAZIL | 0.2115 | 0.9994 | 0.0624 | 0.5195 | 1.0053 | 0.6317 | 1.4524 | 0.2781 |

*Table B.2 Continued*

| Country | LIFE | CALO | INFS | ADLI | PCAR | UPOP | PHYS | TPRP |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| BURMA | 0.2954 | 0.9977 | 0.0681 | 1.7168 | 1.0207 | 4.1563 | 1.4524 | 0.2781 |
| BURUNDI | 0.2930 | 0.9978 | 0.0658 | 0.9014 | 1.0121 | 1.3029 | 1.4524 | 0.2781 |
| CAFRREP | 0.2556 | 0.9986 | 0.0658 | 0.9014 | 1.0121 | 1.3029 | 1.4524 | 0.2781 |
| CAMERON | 0.2324 | 0.9991 | 0.0541 | 0.6661 | 1.0082 | 0.8625 | 1.4524 | 0.2781 |
| CANADA | 0.1596 | 0.9999 | 0.0570 | 0.2888 | 1.0011 | 0.3204 | 1.4524 | 0.2781 |
| CHILE | 0.1901 | 0.9996 | 0.0604 | 0.4067 | 1.0031 | 0.4723 | 1.4524 | 0.2781 |
| COLOMBIA | 0.2071 | 0.9995 | 0.0620 | 0.4937 | 1.0048 | 0.5939 | 1.4524 | 0.2781 |
| CONGO | 0.2227 | 0.9992 | 0.0634 | 0.5927 | 1.0068 | 0.4733 | 1.4524 | 0.2781 |
| COSTRICA | 0.2002 | 0.9995 | 0.0614 | 0.4561 | 1.0041 | 0.5403 | 1.4524 | 0.2781 |
| CYPRUS | 0.1873 | 0.9997 | 0.0601 | 0.3942 | 1.0029 | 0.4556 | 1.4524 | 0.2781 |
| DENMARK | 0.1604 | 0.9999 | 0.0571 | 0.2914 | 1.0012 | 0.3236 | 1.4524 | 0.2781 |
| DOM REP | 0.2159 | 0.9993 | 0.0628 | 0.5468 | 1.0059 | 0.6725 | 1.4524 | 0.2781 |
| ECUADOR | 0.2234 | 0.9992 | 0.0634 | 0.5971 | 1.0069 | 0.7502 | 1.4524 | 0.2781 |
| EGYPT | 0.2357 | 0.9990 | 0.0644 | 0.6940 | 1.0087 | 0.9099 | 1.4524 | 0.2781 |
| ELSALVADOR | 0.2262 | 0.9992 | 0.0679 | 1.5841 | 1.0197 | 3.4556 | 1.4524 | 0.2781 |
| ETHIOPIA | 0.2913 | 0.9978 | 0.0679 | 1.5841 | 1.0197 | 3.4556 | 1.4524 | 0.2781 |
| FINLAND | 0.1656 | 0.9998 | 0.0577 | 0.3089 | 1.0014 | 0.3454 | 1.4524 | 0.2781 |
| FRANCE | 0.1628 | 0.9999 | 0.0574 | 0.2941 | 1.0012 | 0.3270 | 1.4524 | 0.2781 |
| FRG | 0.1612 | 0.9999 | 0.0572 | 0.2941 | 1.0012 | 0.3270 | 1.4524 | 0.2781 |
| GAMBIA | 0.2410 | 0.9989 | 0.0648 | 0.7427 | 1.0095 | 0.9954 | 1.4524 | 0.2781 |
| GHANA | 0.2173 | 0.9993 | 0.0629 | 0.5559 | 1.0061 | 0.6863 | 1.4524 | 0.2781 |
| GREECE | 0.1816 | 0.9997 | 0.0595 | 0.3697 | 1.0024 | 0.4232 | 1.4524 | 0.2781 |
| GUATEMALA | 0.2151 | 0.9993 | 0.0627 | 0.5415 | 1.0058 | 0.6645 | 1.4524 | 0.2781 |
| GUINEA | 0.2409 | 0.9989 | 0.0647 | 0.7411 | 1.0095 | 0.9925 | 1.4524 | 0.2781 |
| GUYANA | 0.2139 | 0.9994 | 0.0626 | 0.5342 | 1.0056 | 0.6535 | 1.4524 | 0.2781 |
| HAITI | 0.2864 | 0.9979 | 0.0676 | 1.4512 | 1.0186 | 2.8801 | 1.4524 | 0.2781 |
| HONDURUS | 0.2257 | 0.992 | 0.0636 | 0.6144 | 1.0072 | 0.7778 | 1.4524 | 0.2781 |
| HONGKONG | 0.1916 | 0.9996 | 0.0606 | 0.4136 | 1.0033 | 0.4818 | 1.4524 | 0.2781 |
| ICELAND | 0.1685 | 0.9999 | 0.0580 | 0.3192 | 1.0016 | 0.3584 | 1.4524 | 0.2781 |
| INDIA | 0.2684 | 0.9984 | 0.0666 | 1.0830 | 1.0146 | 1.7196 | 1.4524 | 0.2781 |
| IRAN | 0.1967 | 0.9996 | 0.0611 | 0.4984 | 1.0037 | 0.5157 | 1.4524 | 0.2781 |
| IRAQ | 0.2002 | 0.9995 | 0.0614 | 0.4560 | 1.0041 | 0.5402 | 1.4524 | 0.2781 |
| IRELAND | 0.1810 | 0.9997 | 0.0595 | 0.3675 | 1.0024 | 0.4202 | 1.4524 | 0.2781 |
| ISRAEL | 0.1738 | 0.9998 | 0.0587 | 0.3388 | 1.0019 | 0.3832 | 1.4524 | 0.2781 |
| ITALY | 0.1718 | 0.9998 | 0.0584 | 0.3313 | 1.0018 | 0.3737 | 1.4524 | 0.2781 |
| JAPAN | 0.1677 | 0.9998 | 0.0579 | 0.3164 | 1.0015 | 0.3548 | 1.4524 | 0.2781 |
| JORDAN | 0.2244 | 0.9992 | 0.0635 | 0.6043 | 1.0070 | 0.7617 | 1.4524 | 0.2781 |
| KENYA | 0.2716 | 0.9983 | 0.0668 | 1.1360 | 1.0153 | 1.8574 | 1.4524 | 0.2781 |
| KOREAREP | 0.2160 | 0.9993 | 0.0628 | 0.5470 | 1.0059 | 0.6729 | 1.4524 | 0.2781 |
| LIBERIA | 0.2287 | 0.9991 | 0.0638 | 0.6365 | 1.0076 | 0.8135 | 1.4524 | 0.2781 |

*Table B.2 Continued*

| Country | LIFE | CALO | INFS | ADLI | PCAR | UPOP | PHYS | TPRP |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| MADAGASCAR | 0.2446 | 0.9989 | 0.0650 | 0.7773 | 1.0101 | 1.0586 | 1.4524 | 0.2781 |
| MALAWI | 0.3159 | 0.9971 | 0.0624 | 0.5158 | 1.0053 | 0.6263 | 1.4524 | 0.2781 |
| MAURITIUS | 0.2263 | 0.9992 | 0.0636 | 0.6182 | 1.0073 | 0.7838 | 1.4524 | 0.2781 |
| MEXICO | 0.1916 | 0.9996 | 0.0606 | 0.4136 | 1.0033 | 0.4818 | 1.4524 | 0.2781 |
| MOROCCO | 0.0033 | 0.9992 | 0.0634 | 0.5963 | 1.0068 | 0.7490 | 1.4524 | 0.2781 |
| MOZAMBIQUE | 0.2207 | 0.9993 | 0.0632 | 0.5784 | 1.0065 | 0.7210 | 1.4524 | 0.2781 |
| NETHERLANDS | 0.1643 | 0.9998 | 0.0575 | 0.3045 | 1.0014 | 0.3399 | 1.4524 | 0.2781 |
| NICARAGUA | 0.2106 | 0.9994 | 0.0624 | 0.5150 | 1.0052 | 0.6250 | 1.4524 | 0.2781 |
| NIGER | 0.2631 | 0.9985 | 0.0663 | 1.0017 | 1.0136 | 1.5234 | 1.4524 | 0.2781 |
| NIGERIA | 0.2243 | 0.9992 | 0.0635 | 0.6039 | 1.0070 | 0.7611 | 1.4524 | 0.2781 |
| NORWAY | 0.1658 | 0.9998 | 0.0577 | 0.3097 | 1.0014 | 0.3464 | 1.4524 | 0.2781 |
| PAKISPAN | 0.2531 | 0.9987 | 0.0656 | 0.8702 | 1.0117 | 1.2386 | 1.4524 | 0.2781 |
| PANAMA | 0.1955 | 0.9996 | 0.0624 | 0.5184 | 1.0053 | 0.6301 | 1.4524 | 0.2781 |
| PAPUANG | 0.2114 | 0.9994 | 0.0624 | 0.5184 | 1.0053 | 0.6301 | 1.4524 | 0.2781 |
| PARAGUAY | 0.2208 | 0.9993 | 0.0632 | 0.5794 | 1.0065 | 0.7225 | 1.4524 | 0.2781 |
| PERU | 0.1996 | 0.9995 | 0.0613 | 0.4529 | 1.0040 | 0.5359 | 1.4524 | 0.2781 |
| PHILIPPINES | 0.2338 | 0.9991 | 0.0642 | 0.6781 | 1.0084 | 0.8827 | 1.4524 | 0.2781 |
| PORTUGAL | 0.1895 | 0.9997 | 0.0603 | 0.4039 | 1.0031 | 0.4585 | 1.4524 | 0.2781 |
| RWANDA | 0.3043 | 0.9975 | 0.0686 | 0.2660 | 1.0029 | 7.0344 | 1.4524 | 0.2781 |
| SIERRAL | 0.2513 | 0.9987 | 0.0655 | 0.8495 | 1.0113 | 1.1972 | 1.4524 | 0.2781 |
| SINGAPORE | 0.1915 | 0.9996 | 0.0605 | 0.4130 | 1.0032 | 0.4810 | 1.4524 | 0.2781 |
| SPAIN | 0.1755 | 0.9998 | 0.0589 | 0.3455 | 1.0020 | 0.3917 | 1.4524 | 0.2781 |
| SRILANKA | 0.2349 | 0.9990 | 0.0643 | 0.6877 | 1.0086 | 0.8992 | 1.4524 | 0.2781 |
| SUDAN | 0.2360 | 0.9990 | 0.0644 | 0.6972 | 1.0087 | 0.9155 | 1.4524 | 0.2781 |
| SURINAME | 0.1920 | 0.9996 | 0.0606 | 0.4155 | 1.0033 | 0.4842 | 1.4524 | 0.2781 |
| SWEDEN | 0.1582 | 0.9999 | 0.0568 | 0.2843 | 1.0011 | 0.3149 | 1.4524 | 0.2781 |
| SYRIANAR | 0.2191 | 0.9993 | 0.0631 | 0.5675 | 1.0063 | 0.7041 | 1.4524 | 0.2781 |
| TANZANIA | 0.2783 | 0.9981 | 0.0672 | 1.2650 | 1.0168 | 2.2290 | 1.4524 | 0.2781 |
| THAILAND | 0.2331 | 0.9991 | 0.0654 | 0.8291 | 1.0110 | 1.1571 | 1.4524 | 0.2781 |
| TOGO | 0.2495 | 0.9988 | 0.0654 | 0.8291 | 1.0110 | 1.1571 | 1.4524 | 0.2781 |
| TRIN&TOB | 0.1795 | 0.9997 | 0.0593 | 0.3612 | 1.0023 | 0.4122 | 1.4524 | 0.2781 |
| TURKEY | 0.2055 | 0.9995 | 0.0619 | 0.4845 | 1.0046 | 0.5807 | 1.4524 | 0.2781 |
| UK | 0.1677 | 0.9998 | 0.0579 | 0.3164 | 1.0015 | 0.3547 | 1.4524 | 0.2781 |
| UPPERVOLTA | 0.3059 | 0.9974 | 0.0687 | 2.1430 | 1.0233 | 8.0150 | 1.4524 | 0.2781 |
| URUGUAY | 0.1819 | 0.9997 | 0.0596 | 0.3710 | 1.0025 | 0.4248 | 1.4524 | 0.2781 |
| USA | 0.1559 | 0.9999 | 0.0565 | 0.2768 | 1.0010 | 0.3057 | 1.4524 | 0.2781 |
| VENEZUELA | 0.1717 | 0.9998 | 0.0584 | 0.3310 | 1.0018 | 0.3732 | 1.4524 | 0.2781 |
| ZAIRE | 0.2747 | 0.9980 | 0.0670 | 1.1939 | 1.0160 | 2.0172 | 1.4524 | 0.2781 |
| ZAMBIA | 0.2382 | 0.9990 | 0.0645 | 0.7162 | 1.0091 | 0.9485 | 1.4524 | 0.2781 |
| ZIMBABWE | 0.2232 | 0.9992 | 0.0634 | 0.5956 | 1.0068 | 0.7479 | 1.4524 | 0.2781 |

*Note:* Same as in Table B.1.

KRISHNA MAZUMDAR

TABLE B.3

1980

| Country | LIFE | CALO | INFS | ADLI | PCAR | UPOP | PHYS | TPRP |
|---------|------|------|------|------|------|------|------|------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| ALGERIA | 0.1646 | 0.1339 | 0.0519 | 0.3484 | 1.7438 | 0.4380 | 1.3555 | 0.3691 |
| ARGANTINA | 0.1532 | 0.1263 | 0.0507 | 0.3010 | 1.7438 | 0.3657 | 1.3555 | 0.3691 |
| AUSTRALIA | 0.1388 | 0.1163 | 0.0492 | 0.2528 | 1.7438 | 1.3714 | 1.3555 | 0.3691 |
| BANGLADESH | 0.2212 | 0.1691 | 0.0565 | 0.7596 | 1.7438 | 1.3714 | 1.3555 | 0.3691 |
| BARBADOS | 0.1553 | 0.1277 | 0.0510 | 0.3091 | 1.7438 | 0.3776 | 1.3555 | 0.3691 |
| BELGIUM | 0.1389 | 0.1164 | 0.0491 | 0.2503 | 1.7438 | 0.2934 | 1.3555 | 0.3691 |
| BENIN | 0.2232 | 0.1702 | 0.0566 | 0.7835 | 1.7438 | 1.4513 | 1.3555 | 0.3691 |
| BOLIVIA | 0.1829 | 0.1457 | 0.0536 | 0.4418 | 1.7438 | 0.5965 | 1.3555 | 0.3691 |
| BRAZIL | 0.1632 | 0.1330 | 0.051 | 0.3422 | 1.7438 | 0.4283 | 1.3555 | 0.3691 |
| BURMA | 0.2306 | 0.1746 | 0.0571 | 0.8839 | 1.7438 | 1.8380 | 1.3555 | 0.3691 |
| BURUNDI | 0.2278 | 0.1729 | 0.0569 | 0.8435 | 1.7438 | 1.6715 | 1.3555 | 0.3961 |
| CAFRREP | 0.2152 | 0.1656 | 0.0561 | 0.6933 | 1.7438 | 1.1694 | 1.3555 | 0.3961 |
| CAMERON | 0.1887 | 0.1494 | 0.0541 | 0.4776 | 1.7438 | 0.6637 | 1.3555 | 0.3691 |
| CANADA | 0.1855 | 0.1140 | 0.0486 | 0.2396 | 1.7438 | 0.2788 | 1.3555 | 0.3691 |
| CHILE | 0.1607 | 0.1313 | 0.0515 | 0.3312 | 1.7438 | 0.4544 | 1.3555 | 0.3691 |
| COLOMBIA | 0.1669 | 0.1354 | 0.0521 | 0.3587 | 1.7438 | 0.4544 | 1.3555 | 0.3691 |
| CONGO | 0.1843 | 0.1467 | 0.0537 | 0.3412 | 1.7438 | 0.4268 | 1.3555 | 0.3691 |
| CONSTARICA | 0.1630 | 0.1328 | 0.0518 | 0.3412 | 1.7438 | 0.4268 | 1.3555 | 0.3691 |
| CYPRUS | 0.1534 | 0.1264 | 0.0508 | 0.3019 | 1.7438 | 0.3669 | 1.3555 | 0.3691 |
| DENMARK | 0.1376 | 0.1154 | 0.0489 | 0.2460 | 1.7438 | 0.2876 | 1.3555 | 0.3691 |
| DOM REP | 0.1722 | 0.1389 | 0.0527 | 0.3842 | 1.7438 | 0.4961 | 1.3555 | 0.3691 |
| ECUADOR | 0.1723 | 0.1390 | 0.0527 | 0.3849 | 1.7438 | 0.4974 | 1.3555 | 0.3691 |
| EGYPT | 0.1811 | 0.1446 | 0.0535 | 0.4313 | 1.7438 | 0.4974 | 1.3555 | 0.3691 |
| ELSALVADOR | 0.1903 | 0.1504 | 0.0542 | 0.4880 | 1.7438 | 0.6840 | 1.3555 | 0.3691 |
| ETHIOPIA | 0.2341 | 0.1464 | 0.0573 | 0.9363 | 1.7438 | 2.0798 | 1.3555 | 0.3691 |
| FINLAND | 0.1400 | 0.1172 | 0.0492 | 0.2540 | 1.7438 | 0.2985 | 1.3555 | 0.3961 |
| FRANCE | 0.1378 | 0.1156 | 0.0489 | 0.2466 | 1.7438 | 0.2884 | 1.3555 | 0.3691 |
| FRG | 0.1370 | 0.1150 | 0.0488 | 0.2441 | 1.7438 | 0.2849 | 1.3555 | 0.3691 |
| GAMBIA | 0.1913 | 0.1510 | 0.0543 | 0.4942 | 1.7438 | 0.6963 | 1.3555 | 0.3691 |
| GHANA | 0.1977 | 0.1550 | 0.0548 | 0.5396 | 1.7438 | 0.7899 | 1.3555 | 0.3691 |
| GREECE | 0.1485 | 0.1231 | 0.0502 | 0.2034 | 1.7438 | 0.3400 | 1.3555 | 0.3691 |
| GUATEMALA | 0.1751 | 0.1407 | 0.0529 | 0.3989 | 1.7438 | 0.5207 | 1.3555 | 0.3691 |
| GUINEA | 0.1992 | 0.1560 | 0.0549 | 0.5511 | 1.7438 | 0.8147 | 1.3555 | 0.3691 |
| GUYANA | 0.1837 | 0.1463 | 0.0537 | 0.4464 | 1.7438 | 0.6050 | 1.3555 | 0.3691 |
| HAITI | 0.2204 | 0.1686 | 0.0564 | 0.7505 | 1.7438 | 1.3419 | 1.3555 | 0.3691 |
| HONDURUS | 0.1855 | 0.1474 | 0.0538 | 0.4574 | 1.7438 | 0.6254 | 1.3555 | 0.3691 |
| HONGKONG | 0.1484 | 0.1230 | 0.0502 | 0.2829 | 1.7438 | 0.3392 | 1.3555 | 0.3591 |

*Table B.3 Continued*

| Country | LIFE | CALO | INFS | ADLI | PCAR | UPOP | PHYS | TPRP |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| ICELAND | 0.1404 | 0.1174 | 0.0492 | 0.7551 | 1.7438 | 0.3001 | 1.3555 | 0.3691 |
| INDIA | 0.2144 | 0.1651 | 0.0560 | 0.6856 | 1.7438 | 1.1477 | 1.3555 | 0.3691 |
| IRAN | 0.1682 | 0.1368 | 0.0523 | 0.3648 | 1.7438 | 0.4642 | 1.3555 | 0.3691 |
| IRAQ | 0.1566 | 0.1286 | 0.0511 | 0.3145 | 1.7438 | 0.3858 | 1.3555 | 0.3691 |
| IRELAND | 0.1514 | 0.1251 | 0.0505 | 0.2942 | 1.7438 | 0.3373 | 1.3555 | 0.3691 |
| ISRAEL | 0.1480 | 0.1227 | 0.0501 | 0.2815 | 1.7438 | 0.3218 | 1.3555 | 0.3691 |
| ITALY | 0.1449 | 0.1206 | 0.0498 | 0.2706 | 1.7438 | 0.3218 | 1.3555 | 0.3691 |
| JAPAN | 0.1398 | 0.1170 | 0.0492 | 0.2534 | 1.7438 | 0.2977 | 1.3555 | 0.3691 |
| JORDAN | 0.1844 | 0.1467 | 0.0537 | 0.4509 | 1.7438 | 0.6133 | 1.3555 | 0.3961 |
| KENYA | 0.2182 | 0.1673 | 0.0563 | 0.7250 | 0.17438 | 1.2527 | 1.3555 | 0.3691 |
| KOREAREP | 0.1651 | 0.1342 | 0.0520 | 0.3506 | 1.7438 | 0.4415 | 1.3555 | 0.3691 |
| LIBERIA | 0.1934 | 0.1523 | 0.0545 | 0.5084 | 1.7438 | 0.7248 | 1.3555 | 0.3691 |
| MADAGASCAR | 0.2101 | 0.1625 | 0.0557 | 0.6426 | 1.7438 | 1.0322 | 1.3555 | 0.3691 |
| MALAWAI | 0.2329 | 0.1759 | 0.0572 | 0.9186 | 1.7438 | 1.9945 | 1.3555 | 0.3691 |
| MALAYSIA | 0.1626 | 0.1326 | 0.0517 | 0.3394 | 1.7438 | 0.4240 | 1.3555 | 0.3691 |
| MAURITIUS | 0.1771 | 0.1420 | 0.0531 | 0.4094 | 1.7438 | 0.5390 | 1.3555 | 0.3691 |
| MEXICO | 0.1589 | 0.1301 | 0.0513 | 0.3235 | 1.7438 | 0.3995 | 1.3555 | 0.3691 |
| MOROCCO | 0.1788 | 0.1432 | 0.0533 | 0.4188 | 1.7438 | 0.5554 | 1.3555 | 0.3691 |
| MOZAMBIQUE | 0.1996 | 0.1562 | 0.0550 | 0.5536 | 1.7438 | 0.8204 | 1.3555 | 0.3691 |
| NETHERLANDS | 0.1403 | 0.1174 | 0.0492 | 0.2549 | 1.7438 | 0.2998 | 1.3555 | 0.3691 |
| NEWZEALAND | 0.1454 | 0.1209 | 0.0498 | 0.2724 | 1.7438 | 0.3242 | 1.3555 | 0.3691 |
| NICARAGUA | 0.1773 | 0.1422 | 0.0531 | 0.4104 | 1.7438 | 0.5408 | 1.3555 | 0.3691 |
| NIGER | 0.2090 | 0.1618 | 0.0556 | 0.6324 | 1.7438 | 1.0060 | 1.3555 | 0.3691 |
| NIGERIA | 0.1739 | 0.1400 | 0.0528 | 0.3929 | 1.7438 | 0.5106 | 1.3555 | 0.3691 |
| NORWAY | 0.1373 | 0.1153 | 0.0489 | 0.2453 | 1.7438 | 0.2866 | 1.3555 | 0.3691 |
| PAKISTAN | 0.2020 | 0.1577 | 0.0551 | 0.5731 | 1.7438 | 0.8639 | 1.3555 | 0.3691 |
| PANAMA | 0.1633 | 0.1329 | 0.0518 | 0.3419 | 1.7438 | 0.4279 | 1.3555 | 0.3691 |
| PAPAUANG | 0.1867 | 0.1482 | 0.0539 | 0.4647 | 1.7438 | 0.6392 | 1.3555 | 0.3691 |
| PARAGUAY | 0.1689 | 0.1367 | 0.0523 | 0.3680 | 1.7438 | 0.4695 | 1.3555 | 0.3691 |
| PERU | 0.1690 | 0.1368 | 0.0523 | 0.3686 | 1.7438 | 0.4704 | 1.3555 | 0.3691 |
| PHILIPPINES | 0.1858 | 0.1476 | 0.0539 | 0.4592 | 1.7438 | 0.6288 | 1.3555 | 0.3691 |
| PORTUGAL | 0.1541 | 0.1269 | 0.0508 | 0.3045 | 1.7438 | 0.3707 | 1.3555 | 0.3691 |
| RWANDA | 0.2227 | 0.1700 | 0.0566 | 0.7777 | 1.7438 | 1.4314 | 1.3555 | 0.3691 |
| SIERRAL | 0.2120 | 0.1636 | 0.0559 | 0.6608 | 1.7438 | 1.0799 | 1.3555 | 0.3691 |
| SINGAPORE | 0.1485 | 0.1231 | 0.0502 | 0.2834 | 1.7438 | 0.3399 | 1.3555 | 0.3691 |
| SPAIN | 0.1468 | 0.1219 | 0.0500 | 0.2773 | 1.7438 | 0.3313 | 1.3555 | 0.3691 |
| SRILANKA | 0.1920 | 0.1515 | 0.0544 | 0.4988 | 1.7438 | 0.7185 | 1.3555 | 0.3691 |
| SUDAN | 0.1920 | 0.1515 | 0.0544 | 0.4988 | 1.7438 | 0.7054 | 1.3555 | 0.3691 |
| SURINAME | 0.1591 | 0.1302 | 0.0514 | 0.3245 | 1.7438 | 0.4008 | 1.3555 | 0.3691 |

*Table B.3 Continued*

| Country | LIFE | CALO | INFS | ADLI | PCAR | UPOP | PHYS | TPRP |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| SWEDEN | 0.1365 | 0.1147 | 0.0488 | 0.2426 | 1.7438 | 0.2829 | 1.3555 | 0.3691 |
| SYRIANAR | 0.1626 | 0.1326 | 0.0517 | 0.3397 | 1.7438 | 0.4244 | 1.3555 | 0.3691 |
| TANZANIA | 0.2150 | 0.1655 | 0.0561 | 0.6913 | 1.7438 | 1.1639 | 1.3555 | 0.3691 |
| THAILAND | 0.1809 | 0.1445 | 0.0534 | 0.4306 | 1.7438 | 0.8507 | 1.3555 | 0.3691 |
| TOGO | 0.7013 | 0.1572 | 0.0551 | 0.5673 | 1.7438 | 0.8507 | 1.3555 | 0.3691 |
| TRIN&TOB | 0.1653 | 0.1343 | 0.0520 | 0.3514 | 1.7438 | 0.4427 | 1.3555 | 0.3691 |
| TURKEY | 0.1643 | 0.1337 | 0.0519 | 0.3459 | 1.7438 | 0.4356 | 1.3555 | 0.3691 |
| UK | 0.1435 | 0.1196 | 0.0496 | 0.2657 | 1.7438 | 0.3149 | 1.3555 | 0.3691 |
| UPPERVOLTA | 0.2453 | 0.1828 | 0.0579 | 1.1458 | 1.7438 | 3.5118 | 1.3555 | 0.3691 |
| URUGUAY | 0.1528 | 0.1260 | 0.0507 | 0.2994 | 1.7438 | 0.3632 | 1.3555 | 0.3691 |
| USA | 0.1342 | 0.1131 | 0.0485 | 0.2355 | 1.7438 | 0.2733 | 1.3555 | 0.3691 |
| ZAIRE | 0.2414 | 0.1806 | 0.0577 | 1.0657 | 1.7438 | 2.8482 | 1.3555 | 0.3691 |
| ZAMBIA | 0.2015 | 0.1573 | 0.0551 | 0.5687 | 1.7438 | 0.8540 | 1.3555 | 0.3691 |
| ZIMBABWE | 0.1891 | 0.1497 | 0.0541 | 0.4800 | 1.7438 | 0.6685 | 1.3555 | 0.3691 |

*Note:*　　　　Same as in Table B.1.

## TABLE B.4
### 1990

| Country | LIFE | CALO | INFS | ADLI | PCAR | UPOP | PHYS | TPRP |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| ALGERIA | 0.1314 | 0.1145 | 0.0346 | 0.2384 | −1.4800 | 0.3403 | 1.1403 | 0.2142 |
| ARGANTINA | 0.1235 | 0.1085 | 0.0340 | 0.2136 | −1.4800 | 0.2941 | 1.1403 | 0.3486 |
| AUSTRALIA | 0.1108 | 0.0965 | 0.0329 | 0.1782 | −1.4800 | 0.2309 | 1.1403 | 0.8850 |
| AUSTRIA | 0.1107 | 0.0984 | 0.0329 | 0.1779 | −1.4800 | 0.2304 | 1.1403 | 0.8929 |
| BANGLADESH | 0.1560 | 0.1328 | 0.0360 | 0.3337 | −1.4800 | 0.5829 | 1.1403 | 0.0647 |
| BARBADOS | 0.1177 | 0.1040 | 0.0335 | 0.1957 | −1.4800 | 0.2630 | 1.1403 | 0.5212 |
| BELGIUM | 0.1177 | 0.1040 | 0.0335 | 0.1967 | −1.4800 | 0.2260 | 1.1403 | 0.9717 |
| BENIN | 0.1096 | 0.0976 | 0.0328 | 0.1753 | −1.4800 | 0.6637 | 1.1403 | 0.0525 |
| BOLIVIA | 0.1612 | 0.1365 | 0.0365 | 0.3587 | −1.4800 | 0.4472 | 1.1403 | 0.1089 |
| BRAZIL | 0.1244 | 0.1092 | 0.0341 | 0.2164 | −1.4800 | 0.2994 | 1.1403 | 0.3282 |
| BURMA | 0.1597 | 0.1354 | 0.0362 | 0.3512 | −1.4800 | 0.6386 | 1.1403 | 0.0557 |
| BURUNDI | 0.1729 | 0.1448 | 0.0369 | 0.4223 | −1.4800 | 0.7597 | 1.0403 | 0.0434 |
| CAFRREP | 0.1633 | 0.1402 | 0.0366 | 0.3850 | −1.4800 | 0.7597 | 1.1403 | 0.0434 |

*Table B.4 Continued*

| Country | LIFE | CALO | INFS | ADL1 | PCAR | UPOP | PHYS | TPRP |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| CAMERON | 0.1441 | 0.1241 | 0.0354 | 0.2839 | −1.4800 | 0.4461 | 1.1403 | 0.1095 |
| CANADA | 0.1070 | 0.0955 | 0.0326 | 0.1685 | −1.4800 | 0.2150 | 1.1403 | 1.2195 |
| CHILE | 0.1235 | 0.1085 | 0.0340 | 0.2136 | −1.4800 | 0.2941 | 1.1403 | 0.3486 |
| COLOMBIA | 0.1282 | 0.1121 | 0.0343 | 0.2279 | −1.4800 | 0.3219 | 1.1403 | 0.2599 |
| CONGO | 0.1401 | 0.1211 | 0.0351 | 0.2686 | −1.4800 | 0.4095 | 1.1403 | 0.1338 |
| COSTARICA | 0.1278 | 0.1118 | 0.0343 | 0.2269 | −1.4800 | 0.3199 | 1.1403 | 0.2650 |
| CYPRUS | 0.1174 | 0.1038 | 0.0335 | 0.1960 | −1.4800 | 0.2617 | 1.1403 | 0.5310 |
| DENMARK | 0.1083 | 0.0966 | 0.0327 | 0.1718 | −1.4800 | 0.2203 | 1.1403 | 0.0884 |
| DOM REP | 0.1350 | 0.1172 | 0.0348 | 0.2504 | −1.4800 | 0.3687 | 1.1403 | 0.1753 |
| ECUADOR | 0.1295 | 0.1131 | 0.0344 | 0.2324 | −1.4800 | 0.3310 | 1.1403 | 0.2387 |
| EGYPT | 0.1425 | 0.1228 | 0.0353 | 0.2774 | −1.4800 | 0.4304 | 1.1403 | 0.1188 |
| ELSALVADOR | 0.1423 | 0.1227 | 0.0353 | 0.2768 | −1.4800 | 0.4289 | 1.1403 | 0.1198 |
| ETHIOPA | 0.1762 | 0.1471 | 0.0370 | 0.4423 | −1.4800 | 0.0206 | 1.1403 | 0.0310 |
| FINLAND | 0.1103 | 0.0981 | 0.0329 | 0.1768 | −1.4800 | 0.2286 | 1.1403 | 0.9232 |
| FRANCE | 0.1094 | 0.0974 | 0.0328 | 0.1746 | −1.4800 | 0.2250 | 1.1403 | 0.9918 |
| FRG | 0.1085 | 0.0967 | 0.0327 | 0.1723 | −1.4800 | 0.2211 | 1.1403 | 1.0708 |
| GAMBIA | 0.1612 | 0.1365 | 0.0363 | 0.3585 | −1.4800 | 0.6629 | 1.1403 | 0.0526 |
| GHANA | 0.1726 | 0.1446 | 0.0369 | 0.4203 | −1.4800 | 0.9104 | 1.1403 | 0.0349 |
| GREECE | 0.1199 | 0.1057 | 0.0337 | 0.2029 | −1.4800 | 0.2742 | 1.1403 | 0.4464 |
| GUATEMALA | 0.1366 | 0.1184 | 0.0349 | 0.2559 | −1.4800 | 0.3808 | 1.1403 | 0.1608 |
| GUINEA | 0.1652 | 0.1394 | 0.0365 | 0.3791 | −1.4800 | 0.739 | 1.1403 | 0.0452 |
| GUYANA | 0.1413 | 0.1220 | 0.0352 | 0.2730 | −1.4800 | 0.4199 | 1.1403 | 0.1259 |
| HAITI | 0.1566 | 0.1332 | 0.0361 | 0.3365 | −1.4800 | 0.5915 | 1.1403 | 0.0631 |
| HONDURUS | 0.1481 | 0.1270 | 0.0356 | 0.2995 | −1.4800 | 0.4859 | 1.1403 | 0.0911 |
| HONGKONG | 0.1104 | 0.0983 | 0.0327 | 0.1773 | −1.4800 | 0.2294 | 1.1403 | 0.9093 |
| ICELAND | 0.1105 | 0.0983 | 0.0329 | 0.1775 | −1.4800 | 0.2298 | 1.1403 | 0.9037 |
| INDIA | 0.1524 | 0.1302 | 0.0359 | 0.3180 | −1.4800 | 0.5367 | 1.1403 | 0.0750 |
| IRAN | 0.1217 | 0.1071 | 0.0338 | 0.2084 | −1.4800 | 0.2843 | 1.1403 | 0.3922 |
| IRAQ | 0.1269 | 0.1111 | 0.0342 | 0.2239 | −1.4800 | 0.3139 | 1.1403 | 0.2813 |
| IRELAND | 0.1177 | 0.1040 | 0.0335 | 0.1968 | −1.4800 | 0.2631 | 1.1403 | 0.5205 |
| ISRAEL | 0.1152 | 0.1020 | 0.0333 | 0.1898 | −1.4800 | 0.2508 | 1.1403 | 0.6270 |
| ITALY | 0.1130 | 0.1003 | 0.0331 | 0.1839 | −1.4800 | 0.2406 | 1.1403 | 0.7425 |
| JAPAN | 0.1100 | 0.0979 | 0.0329 | 0.1761 | −1.4800 | 0.3449 | 1.1403 | 0.2113 |
| KENYA | 0.1579 | 0.1342 | 0.0361 | 0.3427 | −1.4800 | 0.3060 | 1.1403 | 0.0598 |
| KOREAREP | 0.1256 | 0.1101 | 0.0341 | 0.2198 | −1.4800 | 0.3060 | 1.1403 | 0.3056 |
| LIBERIA | 0.1630 | 0.1378 | 0.0364 | 0.3675 | −1.4800 | 0.6946 | 1.1403 | 0.0491 |
| MADAGASCAR | 0.1626 | 0.1376 | 0.0364 | 0.3659 | −1.4800 | 0.6888 | 1.1403 | 0.0497 |
| MALAWI | 0.1695 | 0.1426 | 0.0367 | 0.4028 | −1.4800 | 0.8321 | 1.1403 | 0.387 |
| MAURITIUS | 0.1338 | 0.1164 | 0.0347 | 0.2465 | −1.4800 | 0.3602 | 1.1403 | 0.1869 |

*Table B.4 Continued*

| Country | LIFE | CALO | INFS | ADLI | PCAR | UPOP | PHYS | TPRP |
|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| MEXICO | 0.1215 | 0.1069 | 0.0338 | 0.2077 | −1.4800 | 0.2830 | 1.1403 | 0.3985 |
| MOROCCO | 0.1419 | 0.1224 | 0.0352 | 0.2753 | −1.4800 | 0.4254 | 1.1403 | 0.1221 |
| MOZAMBIQUE | 0.1611 | 0.1364 | 0.0363 | 0.3580 | −1.4800 | 0.6612 | 1.1403 | 0.0528 |
| NETHERLANDS | 0.1104 | 0.0983 | 0.0329 | 0.1773 | −1.4800 | 0.2294 | 1.1403 | 0.9092 |
| NEWZEALAND | 0.1120 | 0.0995 | 0.0330 | 0.1814 | −1.4800 | 0.2364 | 1.1403 | 0.8000 |
| NICARAGUA | 0.1327 | 0.1155 | 0.0345 | 0.2427 | −1.4800 | 0.3523 | 1.1403 | 0.1989 |
| NIGER | 0.1666 | 0.1404 | 0.0366 | 0.3867 | −1.4800 | 0.7664 | 1.1403 | 0.0429 |
| NIGERIA | 0.1586 | 0.1347 | 0.0362 | 0.3461 | −.14800 | 0.6219 | 1.1403 | 0.0581 |
| NORWAY | 0.1066 | 0.0952 | 0.0326 | 0.1676 | −1.4800 | 0.2134 | 1.1403 | 1.2623 |
| PAKISTAN | 0.1431 | 0.1233 | 0.0353 | 0.2798 | −1.4800 | 0.4360 | 1.1403 | 0.1153 |
| PANAMA | 0.1263 | 0.1107 | 0.0342 | 0.2222 | −1.4800 | 0.3106 | 1.1403 | 0.1153 |
| PAPUANG | 0.1396 | 0.1207 | 0.0351 | 0.2667 | −1.4800 | 0.4051 | 1.1403 | 0.1374 |
| PARAGUAY | 0.1327 | 0.1155 | 0.0346 | 0.2425 | −1.4800 | 0.3518 | 1.1403 | 0.1996 |
| PERU | 0.1316 | 0.1147 | 0.0346 | 0.2392 | −1.4800 | 0.3449 | 1.1403 | 0.2114 |
| PHILIPPINES | 0.1397 | 0.1208 | 0.0351 | 0.2674 | −1.4800 | 0.4066 | 1.1403 | 0.1361 |
| PORTUGAL | 0.1225 | 0.1077 | 0.0339 | 0.2106 | −1.4800 | 0.2884 | 1.1403 | 0.3729 |
| RWANDA | 0.1733 | 0.1451 | 0.369 | 0.4244 | −1.4800 | 0.9301 | 1.1403 | 0.0341 |
| SIERRAL | 0.1654 | 0.1396 | 0.0365 | 0.3803 | −1.4800 | 0.7418 | 1.1403 | 0.0448 |
| SINGAPOR | 0.1095 | 0.0975 | 0.0328 | 0.1749 | −1.4800 | 0.2254 | 1.1403 | 0.9834 |
| SPAIN | 0.1148 | 0.1017 | 0.0333 | 0.1889 | −1.4800 | 0.2492 | 1.1403 | 0.6437 |
| SRILANKA | 0.1374 | 0.1191 | 0.0350 | 0.2588 | −1.4800 | 0.3873 | 1.1403 | 0.1539 |
| SUDAN | 0.1605 | 0.1360 | 0.0363 | 0.3551 | −1.4800 | 0.6515 | 1.1403 | 0.0540 |
| SURINAME | 0.1234 | 0.1084 | 0.0340 | 0.2132 | −1.4800 | 0.2932 | 1.1403 | 0.3522 |
| SWEDEN | 0.1094 | 0.0975 | 0.0328 | 0.1747 | −1.4800 | 0.2250 | 1.1403 | 0.9904 |
| SYRIANAR | 0.1264 | 0.1107 | 0.0342 | 0.2224 | −1.4800 | 0.3110 | 1.1403 | 0.2900 |
| TANZANIA | 0.1721 | 0.1442 | 0.0368 | 0.4173 | ·1.4800 | 0.8965 | 1.1403 | 0.0355 |
| THAILAND | 0.1335 | 0.1161 | 0.0347 | 0.2455 | −1.4800 | 0.3581 | 1.1403 | 0.1900 |
| TOGO | 0.1631 | 0.1379 | 0.0364 | 0.3681 | −1.4800 | 0.6965 | 1.1403 | 0.0489 |
| TRIN&TOB | 0.1139 | 0.1010 | 0.0332 | 0.1865 | −1.4800 | 0.2451 | 1.1403 | 0.6884 |
| TURKEY | 0.1286 | 0.1124 | 0.0344 | 0.2293 | −1.4800 | 0.3246 | 1.1403 | 0.2533 |
| UK | 0.1110 | 0.0987 | 0.0330 | 0.2293 | ·1.4800 | 0.3246 | 1.1403 | 0.2533 |
| UPPERVOLTA | 0.1703 | 0.1430 | 0.0368 | 0.4071 | ·1.4800 | 0.8507 | 1.1403 | 0.0377 |
| URUGUAY | 0.1236 | 0.1086 | 0.0340 | 0.2139 | −1.4800 | 0.2947 | 1.1403 | 0.3462 |
| USA | 0.1067 | 0.0953 | 0.0326 | 0.1678 | −1.4800 | 0.2137 | 1.1403 | 1.2532 |
| VENEZUELA | 0.1232 | 0.1083 | 0.0340 | 0.2128 | −1.4800 | 0.2926 | 1.1403 | 0.3548 |
| ZAIRE | 0.1892 | 0.1561 | 0.0376 | 0.5343 | −1.4800 | 1.6938 | 1.1403 | 0.0210 |
| ZAMBIA | 0.1585 | 0.1346 | 0.0362 | 0.3455 | −1.4800 | 0.6199 | 1.1403 | 0.0584 |
| ZIMBABWE | 0.1472 | 0.1263 | 0.0356 | 0.2960 | −1.4800 | 0.4767 | 1.1403 | 0.0948 |

*Note:*          Same as in Table B.1.

## NOTES

*  The author is thankful to the anonymous referee of the journal for many valuable suggestions.

[1]  PCRGDP is the Per Capita Real Gross Domestic Product adjusted for purchasing power parity and expressed in the International Dollars.

[2]  World Bank: 1983, World Tables, Vol. II, 1983, 3rd edition.

[3]  Norman Hicks and Paul Streeten: 1979, 'Indicators of development: The search for a basic needs yardstick', World Development 7, pp. 567–580.

[4]  Irma Adelman and Cynthia Taft Morris: 1973, Economic Growth and Social Equity in Developing Countries (Stanford University Press).

[5]  Summers, R. and A. N. Heston 'A new set of international comparisions of real product and price levels: Estimates for 130 countries, 1950–1985', Review of Income and Wealth, 34, pp. 1–25. Summers, R. and A. N. Heston 'Improved international comparison of real product and its comparison: 1960–1977', Review of Income and Wealth, 30, pp. 207–262.

[6]  Details of income elasticities for each of the eight social indicators for each country for the years 1960, 1970, 1980 and 1990 have been presented in Appendix.

[7]  Figures in the parantheses are the per capita real gross domestic products of the respective countries.

## REFERENCES

Aitchison, J. and J. A. C. Brown: 19XX, 'A synthesis of Engel curve theory', Review of Economic Studies 22.

Bhattacharya, N., 'Studies on consumer behaviour in India' in Survey of Research in Economics VI, ICSSR.

Goldberger, A. S. and T. Gamaletsos: 1970, 'A cross country comparison of consumer expenditure patterns', European Economic Review 1, 1970.

Hicks, N. L. and Paul Streeten: 19XX, 'Indicators of development: The search for a basic needs yard stick', World Development 7, pp. 567–580.

Houthakker, H. S.: 19XX, 'Compensated changes in quantities and qualities consumed', Review of Economic Studies 19, 1951–52.

Knox, F.: 1959, 'Some international comparisons of consumers' durable goods', Bulletin of the Oxford Institute Statistics, 21.

Summer, R. and A. W. Heston: 1988, 'A new set of international comparisons of real product and price levels: Estimates for 130 countries 1950–1985', Review of Income and Wealth, 34.

Summer, R. and A. W. Heston, 'Improved international comparisons of real product and its comparisons 1950–1977', Review of Income and Wealth 30, 1984.

World Bank, Human Development Reports, different issues.

World Bank, World Tables, different issues.
World Bank, World Development Reports, different issues.

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