

Technical notes

1. Statistical measures of development

The early leaders of quantification in economics kept their main focus on people, a focus that in recent years has been blurred. Although development has been a constant concern of government policymakers, economists and other social scientists — and has touched the lives of more people than ever before — there has been little agreement on what constitutes development, how it is best measured and how it is best achieved. One reason for this lack of agreement is that dissatisfaction with the pace and character of economic and social change has instilled a desire to redefine the aims and measures of development.

While the pioneers of measurement of national output and income stressed the importance of social concerns, economic growth became the main focus after the Second World War. Growth in the capital stock was seen as the means of achieving development, and the growth rate of per capita GDP became the sole measure of development.

Income was first developed as a way of measuring welfare and well-being by Pigou, who described economic welfare as the measurable part of human welfare — the part that could be brought into a relationship with “the measuring rod of money”. As a measure of well-being, income pertains to individuals or to households. It was seen as a forward-looking measure of benefits yet to come rather than as a record of what had already transpired.

But production and distribution processes constrain the income of an individual or household. Thus, income is also a record of economic activity, of the production of goods and services already achieved. This backward-looking, recording aspect came to the fore during the Second World War. Income at the national level — GDP or GNP, as it came to be called — became a measure of activity of the total mass of quantity of goods and services produced, weighted by their respective prices, rather than a measure of individual well-being.

As GNP became the goal of development in the 1950s and 1960s, the question of promoting individual well-being receded. It was assumed that well-being would follow automatically from economic growth. A tenuous link between income and well-being was made through the notion of income

per capita, which compounded the shift of emphasis from welfare to production by its insensitivity to distribution. In time, distribution was altogether forgotten, and the argument of “trickle down” was made to defend such neglect. Thus, income moved from an admittedly partial monetary measure of well-being to centre stage as a measure of production and as the sole measure of welfare in its per capita form.

By the 1960s, it was clear from many developing countries that income growth had not tackled the problem of mass poverty. Income distribution and equity came to the forefront as an additional objective of development. The focus of development was turned towards the alleviation of poverty, a change that led to a re-examination of the concept of income and its adequacy as a measure of development.

Against this central dominance of income, several voices were raised. In a pioneering effort at UNRISD, McGranahan and associates examined several development indicators — some relating to mortality and morbidity, others to such social factors as urbanisation and still others to economic factors. These indicators were correlated with each other and used jointly to describe socioeconomic development. Each indicator was related to per capita GDP in a series of regressions that allowed the identification of a threshold level of development. Below this threshold a country was underdeveloped and above it, developed.

There remained the problem of combining these various indicators into a single measure of development, in analogy with income. Income is a price-weighted sum of quantities of different goods and services exchanged in the marketplace. Prices are by no means ideal weights. They may overvalue or undervalue goods and services for which the market is imperfect, and still worse, they totally ignore those for which the market does not exist. But prices are in some sense “natural” weights, since they are part of people’s everyday experience. A price conveys the relative importance of one good compared with another in terms of income.

Any synthetic index combines diverse indicators. Weighting can be equal or determined by such data-driven statistical techniques as factor analysis. Weights have a statistical interpretation, but they cannot be explained either by daily experience or by

the relative importance of the indicators. By contrast, income provides an indication about the tradeoff a consumer or producer is willing to make among different goods.

Another concern of measuring development is deciding which indicators to include and which to leave out. The income measure includes all goods and services that are produced and marketed, among them harmful goods that pollute the atmosphere or injure health. In this sense, income is comprehensive, a quality that alternative indexes lack. The more comprehensive they seem to be, the more indicators they include, and the less they are transparent and relevant to daily experience.

In response to such considerations, M.D. Morris put forward the Physical Quality of Life Index (PQLI). He saw the UNRISD effort as measuring development as an *activity*. He wished to focus on development as *achieved well-being* and chose three

indicators—infant mortality, life expectancy at age one and literacy, combining them in a simple unweighted index to give the PQLI. There obviously is considerable overlap between the first two indicators, particularly for developing countries, as they both relate to longevity and are connected by a precise relationship.

The perception of development has since shifted — first, from *economic* development to *socioeconomic* development, with a new emphasis on poverty. Now the shift is to human development. It emphasises the development of human choices and returns to the centrality of people. It is reflected in measuring development not as the expansion of commodities and wealth but as the widening of human choices. The outcome is the human development index (HDI) used in this Report.

2. Statistical measures of poverty

The measurement of poverty has a history of more than a hundred years. Pioneering work by Booth (1889-92) and Rowntree (1901) tried to measure the extent of urban poverty in London and York. Less known, but perhaps more ambitious, was the attempt to measure national poverty by the Indian politician and economist Dadabhai Naoroji at the beginning of this century.

The primary task of these studies was to define a poverty standard, or poverty line, to separate the "poor" from the "nonpoor". Subsequent debates have continued this focus, and the task of providing the investigator with a standard to distinguish poverty has remained central in poverty studies.

Poverty measures vary according to the variables deemed important: commodities and characteristics of commodities, needs and requirements, or income and expenditure. Typically a poverty measure starts from a notion of (basic) needs, such as nourishment, and translates those needs into commodity bundles (foodstuffs) directly or indirectly through characteristics of commodities (calories and protein). It then multiplies the quantities by appropriate prices to arrive at an expenditure-income level.

A central issue in all debates on poverty is whether poverty should be defined in absolute or in relative terms. It is normally assumed that the two definitions are exclusive because of a lack of clarity about the units of poverty. An absolute measure will typically reflect basic biological and physiological needs. A relative measure will focus more on a notion of requirements that vary depending on circumstances — such as a country's level of development or the disparities between rich and poor or other social and ethnic groups.

Absolute poverty

Poverty is defined in absolute terms if the content of a poverty standard (whether defined by commodities or characteristics) is taken to be fixed across time and space. A historical notion of subsistence — reflecting a very minimal list of basic needs — is at the base of this notion, where the defining variables are commodities or their characteristics. The argument is often made that there is no poverty because, compared with the late nineteenth century, the poor are much better off today. It is also argued that there are no poor in developed countries since, compared with the "really poor" in developing countries, the poor in developed countries are almost affluent.

A common approach in delineating the poverty line is to specify a minimum calorie intake. This calorie level is then converted into foodstuffs adequate to meet the level, given typical consumption patterns in a society. The cost of this amount of food is then determined to yield a poverty level. It has often been the practice, though much criticised, to take a constant calorie intake for everyone. In

the poverty level prescribed by the Indian Planning Commission in the early 1960s, 2,250 calories per day per person in rural areas was specified as the minimum level. A similar figure of 2,100 calories has been mentioned for Pakistan in a poverty study for 1963-64, and 2,122 calories for Bangladesh.

While it is impossible to specify a separate level for each individual, it is possible to specify a required calorie level as a function of age, gender, type of activity and health status. This approach was adopted in Altimir's pioneering study of poverty in Latin America. This specificity would mean that even for an individual the required calorie level would alter over time.

The conversion of the calorie intake into a commodity basket must be culture-specific, no matter how absolute the standard. The specification of typical foodstuffs requires a survey of prevailing consumption practices. In ECLAC's studies of poverty in Latin America, the commodity basket required to meet the calorie intake (calibrated by age, gender, activity and health status) was obtained from a sample survey of nonpoor households. Frequently bought foodstuffs were isolated, and a minimum cost list was chosen from them. This procedure frees the method from exclusive reliance on poor families' consumption patterns, which might reflect the restricted choice of poor households.

In pricing the consumption basket to arrive at a level of expenditure for the poverty level, nonfood items necessary for subsistence need to be considered. This problem is frequently tackled by multiplying the money required to buy the food basket by a coefficient known as the Engel coefficient, the reciprocal of the ratio of food expenditure to total expenditure. The choice of the ratio is not straightforward. By Engel's law, the food ratio will be higher for the poor and lower for the rich. By implication, the multiplier is higher if the ratio chosen is that of nonpoor households.

Even in absolute concepts of poverty, there are relative levels. A distinction is made even in absolute poverty calculations between indigence and poverty. If the income is less than the required food expenditure, the household is termed indigent (primary poverty). This is the practice in the ECLAC poverty studies. If the income is below the multiple of food expenditure as given by the Engel coefficient, the family is termed poor (secondary poverty).

Once the poverty line has been established, it must be adjusted for changes in time. A crude method is to index the poverty line according to some overall consumer price index. A better method is to treat the price index of food separately from other items. This would account for the different inflation rates of food and other items. A further refinement would be to allow substitution of items that enter the basic basket and recompute the food expenditure. The poverty line would also be less

arbitrary if new trends in consumer expenditure could be captured by a recalculation of the Engel coefficient.

The absolutist approach, though popular, is not free of conceptual problems. But its narrow economic and physiological basis, its seeming objectivity and its ease of computation make it the most frequently used approach. Poverty line calculations in Latin America and South Asia are based on this method. So are those in the United States. The U.S. poverty standard is based on nutritional guidelines laid down in 1955 and not revised since. A range of critics accept the absolute approach but criticise details of method, such as the calculation of the poverty line and the evaluation of the actual resources of a household.

The derivation of the food basket has been a matter for debate. If we look at what the poor actually consume rather than what they *could* consume if they had the resources, we would arrive at a distorted consumption pattern. The food basket can and should be derived from the consumption pattern of nonpoor households. A minimum cost basket can then be derived from this larger basket. As the poverty line is recalculated over time, there should be allowance for substitution between food-stuffs as relative prices change, requiring an econometric specification of the expenditure pattern to allow for accurate estimation of income and substitution effects.

Much of the criticism of the poverty line relates to the assumption of a common, constant calorie intake unrelated to an individual's personal characteristics. This is not, however, a necessary part of an absolute approach, as the Altimir approach has demonstrated for Latin America. Another problem in calculating the poverty line is aggregating members of a household. There is growing evidence of intrahousehold inequalities in consumption. The consumption and nutritional level of children are often better indicators of poverty than any other variable, and they merit further enquiry.

Having defined a poverty line, the problem is to measure the resources of a household before labelling it poor or not. This is the tricky problem of defining and measuring income, which raises several questions. Should it be actual or permanent income? How should nonmarket transactions be imputed? How should assets be taken into account? And so on. On the criterion of actual income, one can frequently have households going in and out of poverty as defined by the poverty line. This requires distinguishing the "always poor" from the "frequently poor".

A different approach of an absolute measure is the Dissatisfaction of Basic Needs. Here a number of indicators of basic needs are identified. In the Latin American studies, for instance, there are questions about the quality of housing, access to primary schools, the dependency ratio, and the level of education of the head of household. If the

answer to any one of these questions indicates inadequate levels, the household is declared poor. The dissatisfactions in various dimensions are not weighted and aggregated on a single scale, and different basic needs can be emphasised. The method is less sensitive to price fluctuations, but it does not allow for substitution between different needs.

Relative poverty

The relativist approach defines requirements not merely for existence but for leading a full life as members of a social community. The living standard can be defined by conducting a survey of actual consumption practices or by surveying a sample of households for what they consider adequate consumption practices. A third method is the Leyden method, which asks respondents what their income is and whether they consider it to be too low, adequate or more than adequate. The relativist approach is thus sociocultural rather than narrowly physiological. Since it goes beyond commodities as well as characteristics and consumption practices, it demands more data.

A shortcut through the problem of measurement of relative poverty is to consider poverty a type of inequality. One method of defining poverty is by taking the poverty threshold as some function of median income. By definition, such a measure does not take into account needs of different households or the broader issues posed by the social approach of relativism. But it is an objective economic measure relying on income rather than commodities or characteristics. It is a positive rather than normative measure, the only judgement being in determining the fraction of median income that is to be the cutoff point.

A similar but more limited approach is to define poverty as a function of average earning, which implies that wage or salary employment is the predominant way of earning income. This approach is clearly inapplicable to developing countries, where agriculture and the informal sector provide substantial employment.

The usefulness of measuring poverty

The study of poverty goes well beyond measuring poverty, which is only one step in the process. Measurements should be useful for several purposes. If the purpose is to record levels of well-being, the measurement of income and the analysis of what income can buy will be relevant and informative. As this Report has shown, however, being poor means different things in different countries. If the government provides a social safety net, it is easier for the poor to get by — at least for some time. But if policies for the poor are lacking, it may be harder for the poor to get by. Measurements of poverty thus have to be interpreted in their context.

If the purpose of the study of poverty is to get at the root causes of the problem, the foregoing poverty measures may have to be expanded. One would have to ask first: What makes people poor? They may lack access to assets and to employment or learning opportunities, live in households with a high dependency ratio, belong to ill-served minorities and so on. Measurements of poverty would

focus on the key variables of people's deprivation. In the terminology of this Report, action-oriented poverty measures would focus on the access, or lack of access, that people have to various options for human development. This would then allow saying *how* poor people are and *why* they are poor — and *where* corrective policy interventions should break the process of poverty.

3. A mathematical formulation of the human development index

The human development index (HDI) is constructed in three steps. The *first* step is to define a measure of deprivation that a country suffers in each of the three basic variables — life expectancy (X_1), literacy (X_2), and (the log of) real GDP per capita (X_3). A maximum and a minimum value is determined for each of the three variables given the actual values. The deprivation measure then places a country in the range of zero to one as defined by the difference between the maximum and the minimum. Thus I_{ij} is the deprivation indicator for the j th country with respect to the i th variable and it is defined as:

$$I_{ij} = \frac{(\max_j X_{ij} - X_{ij})}{(\max_j X_{ij} - \min_j X_{ij})} \quad (1)$$

The *second* step is to define an average deprivation indicator (I_j). This is done by taking a simple average of the three indicators:

$$I_j = \sum_{i=1}^3 I_{ij} \quad (2)$$

The *third* step is to measure the human development index (HDI) as one minus the average deprivation index:

$$(HDI)_j = (1 - I_j) \quad (3)$$

To illustrate, the application of this formula to Kenya is as follows:

Maximum life expectancy	=	78.4
Minimum life expectancy	=	41.8
Maximum adult literacy rate	=	100.0
Minimum adult literacy rate	=	12.3
Maximum real GDP per capita (log)	=	3.68
Minimum real GDP per capita (log)	=	2.34
Kenya life expectancy	=	59.4
Kenya adult literacy rate	=	60.0
Kenya real GDP per capita (log)	=	2.90

$$\begin{aligned} \text{Kenya's life expectancy deprivation} & \quad (1) \\ & = (78.4 - 59.4) / (78.4 - 41.8) = 0.519 \end{aligned}$$

$$\begin{aligned} \text{Kenya's literacy deprivation} & \\ & = (100.0 - 60.0) / (100.0 - 12.3) = 0.456 \end{aligned}$$

$$\begin{aligned} \text{Kenya's GDP deprivation} & \\ & = (3.68 - 2.90) / (3.68 - 2.34) = 0.582 \end{aligned}$$

$$\begin{aligned} \text{Kenya's average deprivation} & \quad (2) \\ & = (0.519 + 0.456 + 0.582) / 3 = 0.519 \end{aligned}$$

$$\begin{aligned} \text{Kenya's Human Development Index (HDI)} & \quad (3) \\ & = 1 - 0.519 = 0.481 \end{aligned}$$

4. A female and male human development index

It would be desirable to present separate HDIs for females and males because of the considerable gender inequality that persists. The narrowing of gender disparities should therefore be carefully monitored, and that requires relevant information.

Data limitations pose several problems, however.

- Income, expressed as the log of the real (purchasing-power-parity adjusted) gross domestic product (GDP) per capita, does not differentiate between males and females. In reality, however, we know that the per capita income of females is far less than that of males in all countries.

- For adult literacy, the great majority of countries with gender-specific estimates show female literacy rates significantly below those for males, a disparity that steadily narrows in moving up the

HDI scale. There are, however, no reliable comparable gender-specific estimates for many countries.

- There is thus only one indicator for which gender-specific estimates are fully available — life expectancy.

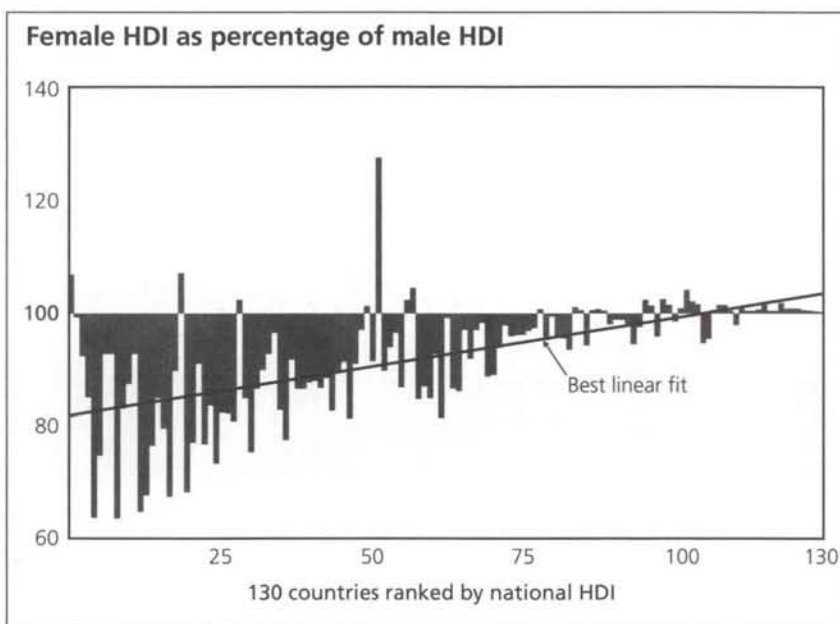
Despite these constraints, it is interesting to compare the two gender-specific HDIs constructed on the basis of existing and estimated data (see the figure and table). The intercountry differences lead to two conclusions.

First, as countries move up the HDI scale, there is a clear overall tendency for the female index to approach and finally overtake the male index. This is primarily the effect of the lower female adult literacy levels dampened down by the effect of higher female life expectancy levels.

Second, among countries with very similar HDIs, there is enormous variation in the female-male disparity, particularly among countries belonging to the low and medium HDI groups.

For example, Tanzania, Pakistan and India are next to each other in their low HDI rank (35 to 37), yet their female-male disparities are very different. The female HDI as a percentage of the male HDI ranges from 96 in Tanzania to 83 in Pakistan to 77 in India. Similarly, the Philippines, China and Saudi Arabia are next to each other in their medium HDI rank (64 to 66), yet their female-male HDI values range from 99% in the Philippines to 87% in China and to 82% in Saudi Arabia. Perhaps most interesting of all is the fact that the disparity range of 99 to 82 in the three adjacent *medium* HDI countries is not all that different from the disparity range of 96 to 77 in the three adjacent *low* HDI countries.

These comparisons show that national averages may conceal distressingly large gender disparities. More professional work needs to be done to bring out clearly the state of the human condition separately for men and women.



HDI: National, female and male

	Human development index	Male HDI	Female HDI		Human development index	Male HDI	Female HDI
<i>Low human development</i>							
1 Niger	0.116	0.114	0.122	67 Libyan Arab Jam.	0.719	0.774	0.665
2 Mali	0.143	0.146	0.145	68 South Africa	0.731	0.741	0.721
3 Burkina Faso	0.150	0.159	0.146	69 Lebanon	0.735	0.766	0.704
4 Sierra Leone	0.150	0.166	0.141	70 Mongolia	0.737	0.757	0.738
5 Chad	0.157	0.195	0.124	71 Nicaragua	0.743	0.744	0.733
6 Guinea	0.162	0.189	0.142	72 Turkey	0.751	0.798	0.709
7 Somalia	0.200	0.201	0.201	73 Jordan	0.752	0.799	0.711
8 Mauritania	0.208	0.209	0.211	74 Peru	0.753	0.773	0.726
9 Afghanistan	0.212	0.265	0.171	75 Ecuador	0.758	0.766	0.751
10 Benin	0.224	0.247	0.205	76 Iraq	0.759	0.772	0.743
11 Burundi	0.235	0.252	0.221	77 United Arab Emirates	0.782	0.796	0.767
12 Bhutan	0.236	0.290	0.188	78 Thailand	0.783	0.795	0.771
13 Mozambique	0.239	0.290	0.197	79 Paraguay	0.784	0.799	0.777
14 Malawi	0.250	0.286	0.219	80 Brazil	0.784	0.782	0.788
15 Sudan	0.255	0.279	0.237	81 Mauritius	0.788	0.806	0.770
16 Central African Rep.	0.258	0.290	0.230	82 Korea, Dem. Rep.	0.789	0.801	0.798
17 Nepal	0.273	0.327	0.220	83 Sri Lanka	0.789	0.807	0.775
18 Senegal	0.274	0.291	0.261	84 Albania	0.790	0.809	0.776
19 Ethiopia	0.282	0.275	0.296	<i>High human development</i>			
20 Zaire	0.294	0.354	0.241	85 Malaysia	0.800	0.826	0.774
21 Rwanda	0.304	0.347	0.267	86 Colombia	0.801	0.775	0.783
22 Angola	0.304	0.321	0.292	87 Jamaica	0.824	0.824	0.826
23 Bangladesh	0.318	0.361	0.277	88 Kuwait	0.839	0.861	0.817
24 Nigeria	0.322	0.354	0.295	89 Venezuela	0.861	0.859	0.864
25 Yemen Arab Rep.	0.328	0.380	0.280	90 Romania	0.863	0.862	0.867
26 Liberia	0.333	0.369	0.304	91 Mexico	0.876	0.875	0.879
27 Togo	0.337	0.372	0.306	92 Cuba	0.877	0.886	0.872
28 Uganda	0.354	0.395	0.320	93 Panama	0.883	0.887	0.878
29 Haiti	0.356	0.353	0.361	94 Trinidad and Tobago	0.885	0.888	0.882
30 Ghana	0.360	0.391	0.333	95 Portugal	0.899	0.907	0.893
31 Yemen, PDR	0.369	0.424	0.319	96 Singapore	0.899	0.925	0.880
32 Côte d'Ivoire	0.393	0.425	0.368	97 Korea, Rep.	0.903	0.900	0.884
33 Congo	0.395	0.418	0.376	98 Poland	0.910	0.900	0.925
34 Namibia	0.404	0.413	0.415	99 Argentina	0.910	0.905	0.918
35 Tanzania, United Rep.	0.413	0.482	0.465	100 Yugoslavia	0.913	0.931	0.899
36 Pakistan	0.423	0.463	0.383	101 Hungary	0.915	0.905	0.927
37 India	0.439	0.500	0.387	102 Uruguay	0.916	0.906	0.919
38 Madagascar	0.440	0.459	0.423	103 Costa Rica	0.916	0.921	0.913
39 Papua New Guinea	0.471	0.509	0.441	104 Bulgaria	0.918	0.915	0.923
40 Kampuchea, Dem.	0.471	0.502	0.435	105 USSR	0.920	0.901	0.938
41 Cameroon	0.474	0.491	0.430	106 Czechoslovakia	0.931	0.922	0.942
42 Kenya	0.481	0.510	0.449	107 Chile	0.931	0.921	0.935
43 Zambia	0.481	0.517	0.450	108 Hong Kong	0.936	0.963	0.917
44 Morocco	0.489	0.518	0.457	109 Greece	0.949	0.972	0.931
<i>Medium human development</i>							
45 Egypt	0.501	0.549	0.453	110 German Dem. Rep.	0.953	0.951	0.956
46 Lao PDR	0.506	0.535	0.479	111 Israel	0.957	0.973	0.943
47 Gabon	0.525	0.550	0.502	112 USA	0.961	0.953	0.969
48 Oman	0.535	0.589	0.481	113 Austria	0.961	0.953	0.969
49 Bolivia	0.548	0.575	0.523	114 Ireland	0.961	0.961	0.962
50 Myanmar	0.561	0.568	0.552	115 Spain	0.965	0.973	0.960
51 Honduras	0.563	0.560	0.566	116 Belgium	0.966	0.961	0.972
52 Zimbabwe	0.576	0.598	0.553	117 Italy	0.966	0.965	0.969
53 Lesotho	0.580	0.505	0.648	118 New Zealand	0.966	0.964	0.970
54 Indonesia	0.591	0.625	0.559	119 Germany, Fed. Rep.	0.967	0.963	0.972
55 Guatemala	0.592	0.609	0.573	120 Finland	0.967	0.957	0.978
56 Viet Nam	0.608	0.633	0.611	121 United Kingdom	0.970	0.969	0.972
57 Algeria	0.609	0.652	0.567	122 Denmark	0.971	0.971	0.974
58 Botswana	0.646	0.636	0.653	123 France	0.974	0.963	0.986
59 El Salvador	0.651	0.630	0.656	124 Australia	0.978	0.974	0.984
60 Tunisia	0.657	0.711	0.603	125 Norway	0.983	0.979	0.989
61 Iran, Islamic Rep.	0.660	0.702	0.610	126 Canada	0.983	0.978	0.990
62 Syrian Arab Rep.	0.691	0.748	0.635	127 Netherlands	0.984	0.980	0.990
63 Dominican Rep.	0.699	0.696	0.698	128 Switzerland	0.986	0.983	0.991
64 Saudi Arabia	0.702	0.757	0.621	129 Sweden	0.987	0.986	0.989
65 Philippines	0.714	0.715	0.711	130 Japan	0.996	0.996	0.996
66 China	0.716	0.771	0.669				

5. Deficiencies in social statistics

This first *Human Development Report* relies on readily available data. In many respects this has limited the scope and depth of its analysis. Not only are many relevant concerns not reflected adequately through existing statistics, but the data that are available often have an inadequate coverage of countries and are seriously lacking in timeliness.

Inadequate data

Many indicators and subject areas were omitted simply because there were too few countries with comparable, reliable data. The more important omissions make a formidable list: wages, unemployment and underemployment, public expenditures in the various sectors by provincial and local authorities, development assistance to individual countries by sector, capital flight, prices of the main staple foods or any satisfactory indicator of food access, access and use of social services by various income groups, the conditions of those living in urban slums, which is a rapidly growing problem, the internal allocations of health expenditures, the whole area of morbidity and health status, net secondary enrolment ratios, educational attainment (the stock of human development), educational achievement (the qualitative output of the education system), the brain drain, key rural-urban differentials such as income and age-specific mortality, health facilities, enrolment, dropout and literacy and key female-male differentials, such as income, age-specific mortality and health.

Incomplete country coverage

Turning to the indicators that are included in the tables, as many as a third of the some 120 indicators were not readily available in some comparable form in a third of the countries. This shows the crippling lack of key indicators of human development. Among the indicators absent in so many countries are some of the most important ones: access to health services or to safe water or to sanitation, total, rural and urban; underweight, wasted, and stunted children; breast-feeding; adult literacy, total, male and female; net primary enrolment ratios, total, urban and rural (a particularly shocking omission); scientists and technicians; educated unemployed; earnings per employee; GNP per capita and income share of the poorest 40%; ratio of the highest 20% to the lowest 20%; the Gini coefficient; urban and rural population below the poverty line; persons per habitable room; and deforestation. Just reading this list tells the story.

Lack of reliability and timeliness

In addition to availability and coverage are questions of reliability. Some indicators with limited coverage, such as the nutritional status of children, are very reliable. So are a number of economic

indicators with comprehensive coverage, such as the balance of payments, debt, and trade. Other indicators such as literacy, access to health services, and maternal mortality are only very broad approximations: sometimes there is a lack of representative national data (access to health services), and sometimes there is difficulty in controlling the quality of the definition in practice (literacy).

As to timeliness, some indicators are fairly up-to-date because of their institutional origin (enrolment, from school records) or because they are processed very quickly from small-scale household surveys (assessments of health interventions or nutritional status). Other indicators — such as literacy, income distribution and poverty — are far less timely because they come from infrequent and complex household surveys (income and poverty), or have traditionally been obtained only from the decennial population censuses (literacy). It is sometimes necessary to go back to the beginning of the 1980s to cover a reasonable number of countries. There is a great need to ask fewer questions of fewer people more frequently.

Next steps

Which of all these statistical gaps and weaknesses should governments and international agencies address as priorities? In every country, no matter how poor, extensive statistical activities are taking place. There are the regular statistical operations allied to the administrative process, the large-scale (regular but infrequent) operations such as the population, housing and agricultural censuses, and a considerable number of surveys and case studies undertaken independently by various governmental and academic agencies. Programmes for improving statistics of human development should try to build on and rationalise existing activities, particularly the various surveys and case studies — being careful to avoid unnecessary duplication. They should also seek to link the improvement of the data situation to decisionmaking on development, especially the monitoring of overall trends in priority areas.

In light of the above discussion, it is difficult to establish clear-cut national priorities for improved data collection. One focus may be suggested, however. It is important that HDI calculations be improved and made more comparable among various countries. For this purpose, the following steps deserve priority:

- Better data collection and analysis should be organised for the three essential components of HDI: life expectancy, adult literacy and real income (purchasing-power-adjusted).
- Distribution of these three components by income groups should be investigated so that the HDI can be made distributionally sensitive.
- Distribution of these three components between males and females, between rural and urban

and among regional areas should also be investigated so that separate HDIs can be constructed that are sensitive to gender differences and geographical differences.

In addition, it is necessary to collect comprehensive information on social sector budgets, which are one of the most important instruments for improved human development. Data should cover all social sector expenditures, whether by government (central, provincial or local), by private sector or by NGOs. Detailed data should be collected for expenditure in environment and other social fields,

with a break-up for each important subsector (such as primary, secondary and tertiary education; general and technical education; preventive and curative health care). Data should also be collected on all social subsidies, their coverage and their impact on various income groups. Many of these data are not easily available at present, except for a few selected countries. Meaningful analysis of meso interventions or concrete proposals for budget restructuring cannot be prepared unless such data are available for all countries on a comparable and continuous basis.