ECONSTOR
Make Your Publications Visible.

A Service of

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Trabold-Nübler, Harald

Article — Digitized Version

The human development index—A new development indicator?

Intereconomics

Suggested Citation: Trabold-Nübler, Harald (1991) : The human development index—A new development indicator?, Intereconomics, ISSN 0020-5346, Verlag Weltarchiv, Hamburg, Vol. 26, Iss. 5, pp. 236-243, https://doi.org/10.1007/BF02928996

This Version is available at:
https://hdl.handle.net/10419/140315

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

Harald Trabold-Nübler*

The Human Development Index - A New Development Indicator?

"Development" can be defined and measured in a great variety of ways. The human development index used by the United Nations Development Programme represents an attempt to place the emphasis on human welfare rather than on the progress of the national economy. This index, however, contains a number of conceptual flaws, which are discussed in the following article. The author proposes a modified version of the index to circumvent the problems.

In May 1991, the United Nations Development Programme (UNDP) published the second Human Development Report (HDR 91). While most other international organisations have been releasing annual reports for many years, UNDP was reluctant to do so. It seems to be more than coincidence, however, that the first Human Development Report (HDR 90) was published at the end of the "lost decade" claiming that "...developing countries have made significant progress towards human development in the last three decades... North-South gaps in human development narrowed considerably during this period even while income gaps tended to widen."[1] While the World Bank and many other organisations still focus on economic and social development, UNDP places human beings at the centre of all development efforts. Instead of asking: how much is a nation producing? UNDP asks: how are its people faring? Human development is viewed as an alternative to economic and social development and even to human resource development.[2] Consequently, UNDP uses a different indicator – the human development index (HDI) – to assess progress in developing countries. Comparing the HDI with GNP per capita, which is still the most widely used development indicator, UNDP finds that the Third World is much better off than GNP figures lead us to believe. The two curves in Figure 1, where countries have been ranked by GNP per capita and the HDI, highlight that income disparities between countries are much greater than human development disparities. However, this should not be interpreted as if the development process has finally succeeded in providing the people in developing countries with what they need for a decent life. Every day 40,000 children die, most of them from preventable causes. Approximately 1.5 billion people do not have access to safe water and still lack basic health care. Over a billion adults are still illiterate.[3] According to the World Development Report 1991, more than one billion people live on less than one dollar a day.[4] This does not seem to support the optimistic view of UNDP, which is backed by the HDI. It is therefore no surprise that the HDI relaunched the discussion about the meaning and measurement of development. While most contributions to this discussion focus on the pros and cons of the concept of human development, this article will concentrate on the discussion of the human development index. The following section will present the definition and measurement of human development as proposed by UNDP. Subsequently, irritating characteristics of the HDI will be addressed which limit its capacity for measuring socio-economic progress. After a discussion of some conceptual flaws in the HDI a modified version of the index is presented which circumvents many of the problems with UNDP's HDI.

Defining and Measuring Human Development

Although human development constitutes a new catchword in development economics, this concept of assessing a country's development performance merely

* Deutsches Institut für Wirtschaftsforschung, Berlin, Germany.

[1] Cf. UNDP: Human Development Report 1990, Oxford, p. 17.

[2] Cf. M. Desai: Human development, in: European Economic Review, 1991, Vol. 35, p. 350.

[3] Cf. UNDP: Human Development Report 1991, Oxford, p. 24.

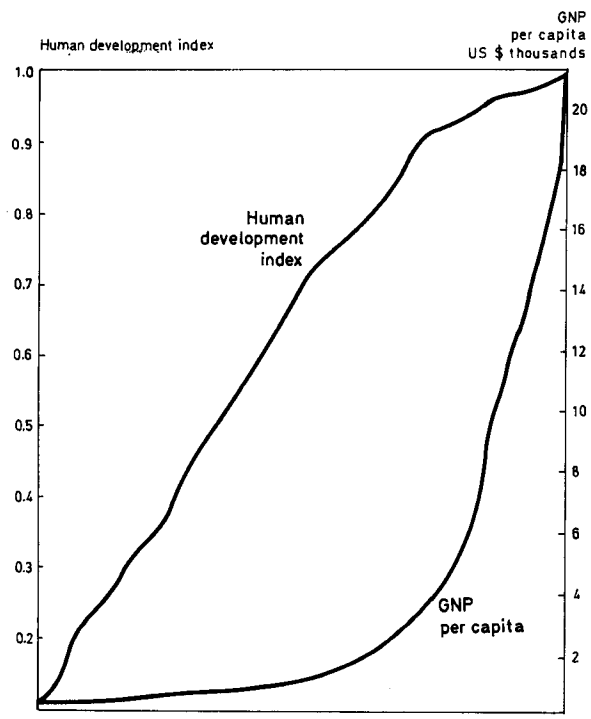
[4] Cf. World Bank: World Development Report 1991, Washington D.C., p. 1.

represents a revival of the positions of the seventies.[5] The HDI itself is reminiscent of the Physical Quality of Life Index (PQLI), which was intensively discussed at the beginning of the eighties, when the basic needs strategy had reached its peak.[6] Despite its intellectual appeal, most analysis based on the PQLI never gained much influence in development policies.[7]

UNDP defines human development as "... a process of enlarging people's choices. The most critical ones are to lead a long and healthy life, to be educated and enjoy a decent standard of living. Additional choices include political freedom, guaranteed human rights and self-respect..."[8] Thus, the concept of human development reflects two sides, the formation of human capabilities, such as skills, knowledge and health, and the command over resources enabling people to use their capabilities. In order to measure human development the HDR 91 identifies three basic dimensions - longevity, knowledge and income - which are considered essential for human development. The attainment in each dimension is measured by one or two variables. Current life expectancy is used as the variable to measure longevity. Educational attainment, a composite variable embracing adult literacy and mean years of schooling, serves as a measure of knowledge. Income is measured in real GDP per capita (Kravis dollars). UNDP thinks, however, that income above the poverty level ($4,829) contributes only marginally to human development. In order to reflect these diminishing returns of income, real GDP per capita is transformed[9] into adjusted GDP per capita which is used as the income variable.

Figure 1

Ranking of Countries' GNP per capita and HDI



Source: Human Development Report 1990.

The construction of the HDI is a three step process. Firstly, a measure of deprivation in each of the three dimensions was defined. Based on data for 160 countries, the lowest and highest values of each variable were defined as a minimum and maximum. The deprivation of each country in any of the three dimensions was then defined by the distance of the observed value from the maximum, normalized into a 0-1 scale. In the second step the average deprivation indicator was calculated by adding the values of each dimension by country and dividing by three. In the third step the HDI was calculated by subtracting the average deprivation index from one. Thus, the HDI can assume values from 0 to 1. The higher the HDI, the higher the level of human development relative to all other countries for one particular year.

Comparison between HDI and GNP ranks

The HDI attracted a lot of attention, especially because of the disparities found in comparing the per capita GNP rank and the HDI rank. According to the HDI, Japan is ranked first with an HDI value of 0.993, while according to GNP per capita Switzerland is in first place. Sierra Leone is ranked last with an HDI value of 0.048, while according to GNP per capita Ethiopia is ranked last. Poor educational attainment causes most Arab states to lose up to 49 ranks in HDI when compared to GNP per capita. On the other hand, high literacy rates combined with a high life expectancy let many of the countries with low or medium income gain up to 51 ranks in HDI when compared with GNP per capita.[10] It is therefore no wonder that ever since UNDP published its first HDR, economists, politicians and journalists have debated and analysed the shortfalls and merits of the HDI.

The critics of the HDI can be broadly divided into two groups. Representatives of the first group are convinced that development problems are essentially economic

[5] Cf. G. Pyatt: Poverty, in: European Economic Review, 1991, Vol. 35, p. 358.

[6] Cf. Overseas Development Council: Measuring the condition of the world's poor, Oxford 1979.

[7] Cf. K. W. Menck: Neuorientierung der Entwicklungspolitik? – Der Index der menschlichen Entwicklung, Rissener Rundbrief 11, 1990, p. 367.

[8] Cf. UNDP (1990), op. cit., p. 10.

[9] See technical note for details on UNDP's method for transforming real GDP into adjusted GDP.

[10] Cf. UNDP (1991), op. cit., pp. 119-121.

problems. The stimulation of economic growth is considered the most important tool required to foster development. Trickle-down effects will spread the proceeds and everyone will benefit. Consequently, it is not necessary to measure human development and economic development separately, as both are closely correlated. Reichel, for instance, correlates per capita income at purchasing power parity with life expectancy, infant mortality and literacy rate and finds R^2 of 0.783, 0.746 and 0.535, respectively.[11] He concludes that it is not necessary to create a new indicator, as purchasing power per capita is sufficient to measure development. At the moment, such a position is supported neither by many development experts nor by international organisations like the World Bank. There is a broad consensus that looking at income alone neglects many important aspects of the development process. Therefore, this strand will not be followed further in this article.

Among the second group of critics, there is a principle agreement that human development needs to receive special attention. The basic message of UNDP - no automatic link between human progress and economic growth - is widely accepted. The objections to the index relate to general problems of component indices which have been discussed in detail, e.g. by Hicks and Streeten.[12] Firstly, rescaling of raw data to a 0-1 range will always remain arbitrary to some degree. Besides the question of appropriate minima and maxima, one has to choose between a linear and a non-linear scale. Secondly, the weights for combining component indices into the composite should be based on a generally accepted welfare function which is not yet available. Thirdly, despite considerable efforts by the authors of the HDR 90 und HDR 91, the HDI still lacks a sound theoretical foundation.

In light of these problems it might be argued that it is unnecessary or undesirable to measure human development by one single index at all, instead of looking at individual figures of each and perhaps more dimensions. The World Development Report 1990 of the World Bank favours this approach of "supplementing income data with information on the other achievements"[13] in order to assess the extent of poverty or development success. While it is certainly important to obtain a detailed and differentiated picture of a country's state of development, the HDI has the advantage of confronting the most widely used single figure development indicator (GNP per capita) with another single figure index. GNP ranks can be directly compared with HDI ranks showing that an assessment of a country's development performance can lead to rather different results, when economic and human development are analysed separately.

While the objections discussed above can be applied to component indices in general, a closer look at the HDI, however, reveals that UNDP's way of designing the index endows it with additional irritating characteristics and conceptual flaws that other component indices do not contain.

Irritating Characteristics

Although UNDP considers the HDI to be "a reliable measure of socio-economic progress"[14] the indicator does not allow for a meaningful comparison of HDI values over

[11] Cf. R. Reichel: Der 'Human Development Index' – ein sinnvoller Entwicklungsindikator?, in: Zeitschrift für Wirtschaftspolitik, 1991, Vol. 40, No. 1, pp. 57-67.

[12] Cf. N. Hicks and P. Streeten: Indicators of development: The search for a basic need yardstick, in: World Development, 1979, Vol. 7, pp. 567-580.

[13] Cf. R. Kanbur: Poverty and development, PRE Working Paper 618, Washington D.C., 1991.

[14] Cf. UNDP (1991), op. cit., p. 15.

PUBLICATIONS OF THE HWWA-INSTITUT FÜR WIRSCHAFTSFORSCHUNG-HAMBURG

KONJUNKTUR VON MORGEN

Annual subscription rate
DM 120,–
ISSN 0023-3439

The short report on domestic and world business trends and raw material markets published every fortnight by HWWA-Institut für Wirtschaftsforschung-Hamburg

VERLAG WELTARCHIV GMBH – HAMBURG

time. This appears to be the biggest shortfall of an index planned to be calculated and published periodically and envisaged to monitor socio-economic progress. A country's HDI value depends on three factors - the minimum (i.e. the lowest value of all countries), the maximum (i.e. the highest value of all countries) and its own value for each variable. A change in the HDI value of a country between two periods can therefore be caused by a change in any of the three. For instance, if the minimum country's value in one dimension moves closer to that of the penultimate country's, the HDI values of the mimimum and maximum country remain unchanged, while the HDI values of all other countries decline. The fact that a change in one country's value affects most other countries' HDIs, but not its own, is an externality that one doesn't normally want in an index. The behaviour of the HDI, however, can become even more awkward. Let us assume that the countries with the lowest level of human development improve significantly, e.g. in real GDP per capita. If the country with the lowest income grows faster than the other countries thereby overtaking one or more of them, another country will fall back to the last place. This country, however, might even find its HDI drop to zero, although it has been able to improve in absolute terms! Simply because the minimum country advances faster, the achievement of other countries may be converted into a deterioration of their HDI values.

The HDI also conceals the gap between the minimum and maximum by transforming all values on a scale between zero and one. No matter whether the minimum and maximum of a variable are far from, or close to, each other the minimum country will always have a value of 1 and the maximum country a value of 0 for the deprivation in this dimension. So, even if the developing countries could drastically raise the life expectancy of their population, resulting in an increase of the minimum value from 42 to, let's say, 75 years, while life expectancy in the maximum country continued to be 78.6 years, the transformed values for this dimension would still range from 0 to 1 and would not reflect the big leap in human development. The inappropriate regard of absolute changes is also reflected in the case of a proportional increase or decrease of all countries' values in one dimension. If each country's life expectancy could be increased by 10%, the HDI would remain the same, although the changes in human development would be considered substantial.

Conceptual Flaws

Besides the irritating characteristics described above the utility of the HDI is limited by several conceptual flaws, such as an inconsistency in design, a highly contestable value judgement, and an error in incorporating diminishing returns of income to human well-being. Firstly, there is an inconsistency in the derivation of the dimension educational attainment. UNDP uses the following equation to calculate the variable educational attainment (E) for each country:[15]

$$E = a_1 \text{ LITERACY} + a_2 \text{ YEARS OF SCHOOLING}$$

where $a_1 = {}^2/_3$ and $a_2 = {}^1/_3$. Besides not giving any rationale for using these weights, the equation creates the impression that the two variables are weighted with two thirds and one third, respectively. Strictly speaking, however, this is not true. This is best illustrated with an example. Among those countries with a literacy rate of 99%, the years of schooling vary between 6.2 and 12.2, thus differing by approximately 50% (using 12.2 years as the basis). Adding ${}^2/_3$ of 99 and ${}^1/_3$ of 6.2 or 12.2 gives an educational attainment of 68.1 and 70.1, respectively. As a consequence, educational attainment differs by only 3%. The actual contribution of the literacy rate turns out to be more than ${}^9/_{10}$, as the raw data are simply added and not transformed into a 0-1 scale. Hence, large differences in mean years of schooling are not mirrored, as intended, in the equation for educational attainment. The ranking of many countries would change considerably, if the actual contribution of LITERACY and YEARS OF SCHOOLING were ${}^2/_3$ and ${}^1/_3$ respectively. For example, the USA would be ranked third gaining 4 ranks, the United Kingdom would be ranked sixth gaining 5 ranks and Nepal would be ranked 139 instead of 145. The Netherlands would lose 4 ranks, Iceland 7 ranks and Ethiopia 6 ranks. Thus, in order to arrive at a consistent index, UNDP should transform the values of LITERACY and YEARS OF SCHOOLING on a scale between zero and one before adding them. Or it should be explained why this inconsistency in deriving educational attainment is justified.

Secondly, the way in which UNDP conceptually incorporates the idea of diminishing returns in the income variable is highly contestable. UNDP's rationale is that income below the poverty line of 4,829 Kravis dollars contributes dollar-for-dollar, income above the poverty line only marginally to human development. Real GDP is therefore converted into adjusted GDP before it is included into the HDI.[16] Compared to the 1990 HDI, where income above the poverty line was thought to make no contribution to human development at all, the 1991 HDI at least concedes that additional income is useful. This change is more than justified, as UNDP defines human development as "a process of enlarging people's choices"[17] and it is

[15] Ibid., p. 90.

[16] See technical note for details.

[17] Cf. UNDP (1990), op. cit., p. 1.

quite difficult to ascertain why additional income does not enlarge people's choices. The degree, however, to which additional income is taken into account still seems to be much too low. As can be seen in Figure 2, the steep increase in real GDP for incomes above 4,829 Kravis dollars is converted into a gradual increase of adjusted GDP. This implies, for instance, that a $15,230 difference in real GDP is reduced to a $450 difference in adjusted GDP, as in the case of the USA and Brazil. It is far from clear why income below the poverty line is not subject to diminishing returns at all, while income above the poverty line is so drastically discounted.

Thirdly, the way in which UNDP technically incorporates the idea of diminishing returns in the income variable is false.[18] UNDP divides the full range of income into multiples of the poverty line ($4,829) and treats each of these multiples differently. This leads to a violation of the concept of diminishing returns, as there are several cases where an additional unit of income contributes more to human well-being than the previous one. Firstly, the first dollar of each multiple of the poverty line contributes more to human well-being than the previous one. For instance, a rise in real GDP from $9,657 to $9,658 increases adjusted GDP or human well-being by less than $0.1. An increase in real GDP by another dollar from $9,658 to $9,659, however, increases adjusted GDP by $3. Moreover, the first dollar of any multiple of the poverty line contributes less to human well-being than the first dollar of the next multiple. The first dollar of the second multiple adds $2 to human well-being, the first dollar of the third multiple adds $3, and so on. Although these cases violate the principle of diminishing returns, one could perhaps overlook this "first-dollar" anomaly, if each additional multiple of the poverty line as a whole would contribute less to human well-being than the previous one. The concept of diminishing returns would then be properly reflected, at least from a global point of view. Unfortunately, this is not the case. Only the first nine multiples of the poverty line contribute less to human well-being than the previous one. Starting with the ninth multiple, each additional multiple of the poverty line contributes more to human well-being than the previous one.

The reason for this false representation of diminishing returns lies in dividing the full range of income into several intervals and making the parameter ε dependent on income, a fallacy the original Atkinson formulation avoids. Instead of arbitrarily tampering with well-established formulations of economic concepts, UNDP should use the original Atkinson formulation and concentrate on finding a suitable value for ε.

A Modified Human Development Index

The irritating characteristics described above are caused by using country dependent minima and maxima in the calculation of the HDI. However, these problems can be solved by replacing the country dependent minima and

Technical Note

The HDR 91 uses the following technique for adjusting real GDP in order to incorporate diminishing returns:[1]

"... is to use an explicit formulation for the diminishing return. A well-known, and frequently used, form is the Atkinson formulation for the utility of income:

$$W(y) = \frac{1}{1-\varepsilon} \times y^{1-\varepsilon}$$

Here $W(y)$ is the utility or well-being derived from income, and the parameter measures the extent of diminishing returns. It is the elasticity of the marginal utility of income with respect to income. If $\varepsilon = 0$ there are no diminishing returns. As ε approaches 1, the equation becomes:

$$W(y) = \log y$$

The modification adopted in this HDI is to let the value of ε rise slowly as income rises. For this purpose, the full range of income was divided into multiples of the poverty line y^*. Thus, most countries are between 0 and y^*, some between y^* and $2y^*$, even fewer between $2y^*$ and $3y^*$ and so on. Now for all countries for which $y < y^*$, that is, the poor countries, ε is set equal to 0. There are no diminishing returns here. For income between y^* and $2y^*$ ε is set equal to 1/2. For income between $2y^*$ and $3y^*$, ε is set at 2/3. In general, if $\alpha y^* \leq y \leq (\alpha + 1)\, y^*$, then $\varepsilon = \alpha / (\alpha + 1)$. This gives:

$$\begin{aligned} W(y) &= y \text{ for } 0 < y \leq y^* \\ &= y^* + 2(y - y^*)^{1/2} \text{ for } y^* \leq y \leq 2y^* \\ &= y^* + 2(y^*)^{1/2} + 3(y - 2y^*)^{1/3} \\ &\quad \text{for } 2y^* \leq y \times 3y^* \\ &\quad \text{and so on.} \end{aligned}$$

So, the higher the income relative to the poverty level, the more sharply the diminishing returns affect the contribution of income to human development. Income above the poverty line thus has a marginal effect, but not a full dollar-for-dollar effect."

[1] Cf. UNDP: Human Development Report 1991, Oxford, p. 90.

[18] See technical note for Atkinson's and UNDP's method of incorporating diminishing returns for the utility of income.

maxima with arbitrarily fixed values. Thus, the points of reference will be fixed. The new minimum should be lower and the new maximum higher than the values of the worst and best country. This puts the raw data into a scale, where the minimum is greater than 0 and the maximum smaller than 1. In order to be able to monitor changes in the HDI over a long period of time, minima and maxima should be used which will not be surpassed by countries within the next decade or two.

A technically modified HDI, which does not contain the irritating characteristics (but still the conceptual flaws) of UNDP's HDI, was calculated here using the original data and equations of UNDP.[19] However, the country dependent minima and maxima were replaced by arbitrarily fixed ones. For life expectancy, the minimum was set to 0, the maximum to 100 years. The minimum for the literacy rate was set to 0%, the maximum to 100%. For mean years of schooling, a minimum of 0 years and a maximum of 15 years were chosen. These maxima correspond to the "obvious" ones suggested by the HDR 91.[20] For the adjusted real GDP the minimum was fixed at 0 and the maximum at the sixfold of the poverty level, which corresponds to $28,974 worth of real GDP or $5,104 of adjusted GDP. Table 1 shows the countries ranked according to the technically modified HDI (MHDI). The range of the MHDI mirrors the different scaling of the variables. Countries with very low levels of human development have index values around 0.25, countries with very high levels of human development have index values around 0.9. This reflects achievements in human development of the poorer countries as well as the room left for improvement in the rich countries.

A technically and conceptually modified HDI, i.e. an index without irritating characteristics and conceptual flaws, was also calculated using UNDP's data and the arbitrarily fixed minima and maxima described above. The original Atkinson formulation for diminishing returns of income was used and the parameter ε was set to 0.5.[21] The results reflect the different treatment of income. As income below the poverty line is discounted and income above the poverty line is not sharply reduced, countries with high real GDP per capita gain up to 22 ranks.

[19] Cf. UNDP (1991), op. cit., pp. 90, 119-121.

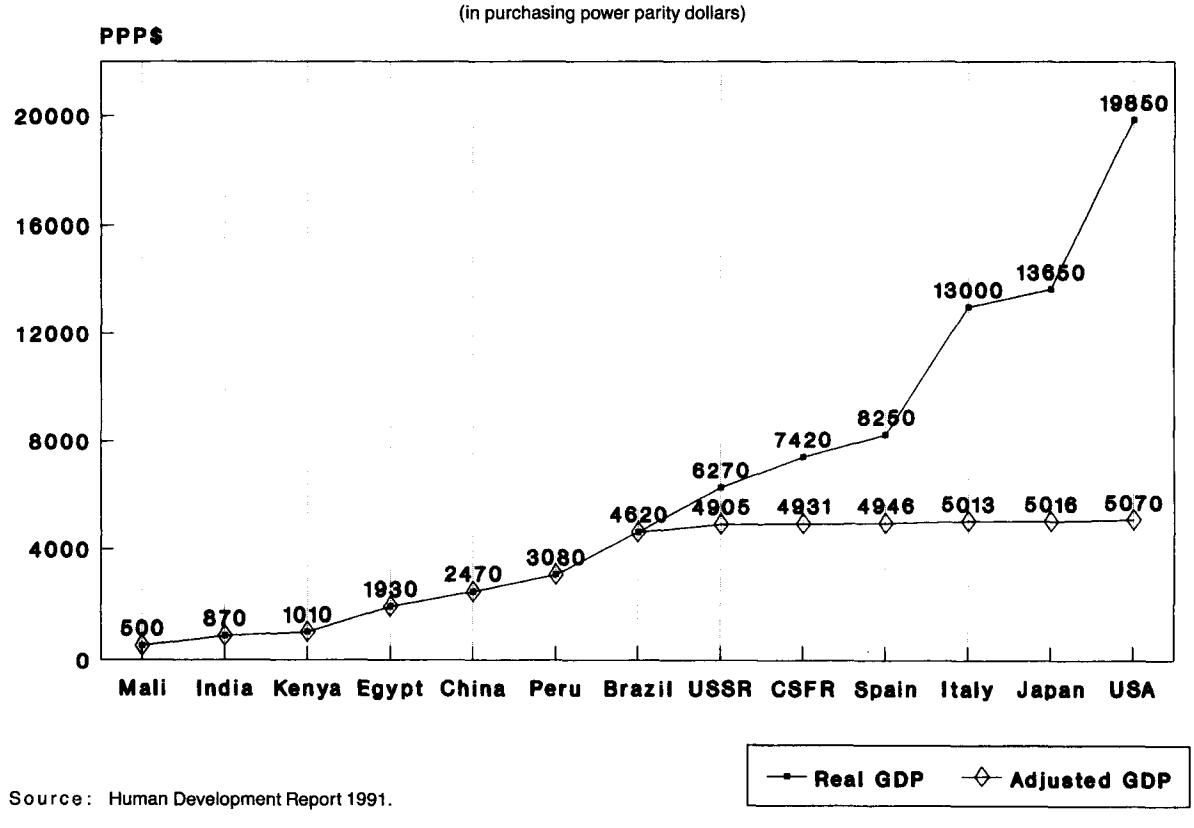
[20] Ibid., p. 94.

[21] See technical note for Atkinson's method to represent diminishing returns of income.

Figure 2

Differences between real GDP per capita and adjusted GDP per capita

(in purchasing power parity dollars)



Source: Human Development Report 1991.

Table 1

Human Development Index and Modified Human Development Index

Rank of modified HDI	Country	modified HDI	original HDI	Rank of original HDI	Rank of modified HDI	Country	modified HDI	original HDI	Rank of original HDI
1	Japan	0.913	0.993	1	81	Nicaragua	0.637	0.612	85
2	Canada	0.911	0.983	2	82	Dominican Rep.	0.636	0.622	80
3	USA	0.910	0.976	7	83	Saint Vincent	0.632	0.636	79
4	Sweden	0.908	0.982	4	84	Samoa	0.630	0.618	81
5	Switzerland	0.907	0.981	5	85	Mongolia	0.630	0.596	87
6	Iceland	0.907	0.983	3	86	Jordan	0.629	0.614	83
7	Norway	0.906	0.978	6	87	Iraq	0.615	0.582	91
8	Australia	0.905	0.973	9	88	Guyana	0.614	0.589	89
9	Netherlands	0.904	0.976	8	89	China	0.614	0.614	82
10	France	0.904	0.971	10	90	Lebanon	0.612	0.592	88
11	United Kingdom	0.903	0.967	11	91	Gabon	0.611	0.510	97
12	Denmark	0.902	0.967	12	92	Tunisia	0.611	0.588	90
13	Finland	0.900	0.963	13	93	Iran, Islamic Rep. of	0.606	0.577	92
14	Germany	0.899	0.960	14	94	Botswana	0.583	0.524	95
15	Austria	0.898	0.957	17	95	Maldives	0.572	0.534	93
16	New Zealand	0.898	0.959	15	96	El Salvador	0.561	0.524	94
17	Belgium	0.897	0.958	16	97	Indonesia	0.551	0.499	98
18	Luxembourg	0.896	0.954	19	98	Swaziland	0.543	0.462	104
19	Italy	0.891	0.955	18	99	Viet Nam	0.541	0.498	99
20	Ireland	0.889	0.945	23	100	Solomon Islands	0.539	0.521	96
21	Israel	0.888	0.950	21	101	Guatemala	0.537	0.488	103
22	Barbados	0.887	0.945	22	102	Algeria	0.531	0.490	102
23	Spain	0.883	0.951	20	103	Honduras	0.529	0.492	100
24	Bahamas	0.881	0.920	28	104	Namibia	0.519	0.440	105
25	Czechoslovakia	0.880	0.920	27	105	Lesotho	0.511	0.432	107
26	Hungary	0.876	0.911	30	106	Bolivia	0.509	0.416	110
27	USSR	0.874	0.908	31	107	Vanuatu	0.507	0.490	101
28	Greece	0.873	0.934	24	108	Morocco	0.494	0.431	108
29	Malta	0.871	0.917	29	109	Myanmar	0.493	0.437	106
30	Hong Kong	0.868	0.934	25	110	Zimbabwe	0.484	0.413	111
31	Uruguay	0.865	0.905	32	111	Congo	0.481	0.374	115
32	Cyprus	0.864	0.923	26	112	Kenya	0.470	0.399	113
33	Bulgaria	0.859	0.899	33	113	Egypt	0.468	0.394	114
34	Korea, Rep. of	0.857	0.884	35	114	Madagascar	0.467	0.371	116
35	Yugoslavia	0.853	0.893	34	115	Cape Verde	0.464	0.428	109
36	Chile	0.843	0.878	38	116	Papua New Guinea	0.457	0.353	117
37	Trinidad and Tobago	0.842	0.876	39	117	Zambia	0.451	0.351	118
38	Portugal	0.836	0.879	36	118	Sao Tome and Principe	0.442	0.399	112
39	Singapore	0.836	0.879	37	119	Cameroon	0.439	0.328	119
40	Poland	0.828	0.863	41	120	Côte d'Ivoire	0.425	0.311	122
41	Venezuela	0.826	0.848	44	121	Ghana	0.415	0.311	121
42	Costa Rica	0.825	0.876	40	122	Zaire	0.411	0.299	124
43	Argentina	0.825	0.854	43	123	Pakistan	0.408	0.311	120
44	Brunei Darussalam	0.822	0.861	42	124	Haiti	0.400	0.296	125
45	Mexico	0.819	0.838	45	125	India	0.394	0.308	123
46	Mauritius	0.814	0.831	47	126	Lao People's Dem. Rep.	0.390	0.253	128
47	Qatar	0.799	0.812	50	127	Comoros	0.383	0.274	126
48	Antigua and Barbuda	0.799	0.832	46	128	Tanzania, U. Rep. of	0.381	0.266	127
49	Kuwait	0.795	0.827	48	129	Yemen	0.375	0.242	130
50	South Africa	0.794	0.766	57	130	Nigeria	0.373	0.242	129
51	Albania	0.791	0.821	49	131	Rwanda	0.355	0.213	133
52	Bahrain	0.790	0.810	51	132	Togo	0.346	0.225	131
53	Malaysia	0.787	0.802	52	133	Senegal	0.343	0.890	135
54	Surinam	0.775	0.792	55	134	Equatorial Guinea	0.343	0.186	137
55	Brazil	0.769	0.759	60	135	Liberia	0.341	0.220	132
56	Panama	0.766	0.796	54	136	Uganda	0.334	0.204	134
57	United Arab Emirates	0.757	0.767	56	137	Malawi	0.333	0.179	138
58	Dominica	0.749	0.800	53	138	Ethiopia	0.331	0.166	141
59	Colombia	0.749	0.757	61	139	Burundi	0.329	0.177	139
60	Romania	0.740	0.762	58	140	Cambodia	0.323	0.175	140
61	Seychelles	0.737	0.752	63	141	Bangladesh	0.323	0.186	136
62	Jamaica	0.727	0.761	59	142	Angola	0.319	0.150	147
63	Grenada	0.727	0.751	64	143	Mozambique	0.316	0.155	146
64	Saudi Arabia	0.723	0.697	69	144	Central African Rep.	0.315	0.166	142
65	Thailand	0.721	0.713	66	145	Bhutan	0.312	0.159	144
66	Saint Kitts and Nevis	0.719	0.719	65	146	Sudan	0.309	0.164	143
67	Turkey	0.712	0.694	70	147	Mauritania	0.305	0.140	148
68	Cuba	0.710	0.754	62	148	Nepal	0.297	0.158	145
69	Fiji	0.707	0.689	71	149	Somalia	0.293	0.118	149
70	Libyan Arab Jamahiriya	0.707	0.665	76	150	Benin	0.284	0.114	150
71	Syrian Arab Rep.	0.699	0.681	72	151	Guinea-Bissau	0.279	0.088	151
72	Belize	0.691	0.700	67	152	Afghanistan	0.264	0.069	157
73	Saint Lucia	0.687	0.699	68	153	Chad	0.260	0.087	152
74	Peru	0.674	0.644	78	154	Niger	0.258	0.079	155
75	Paraguay	0.674	0.667	73	155	Guinea	0.258	0.066	158
76	Ecuador	0.669	0.655	77	156	Mali	0.253	0.072	156
77	Korea, Dem. Rep. of	0.654	0.665	74	157	Gambia	0.253	0.064	159
78	Sri Lanka	0.652	0.665	75	158	Djibouti	0.252	0.083	153
79	Philippines	0.638	0.613	84	159	Sierra Leone	0.250	0.048	160
80	Oman	0.638	0.604	86	160	Burkina Faso	0.248	0.081	154

Source: Human Development Report 1991; calculations by the Deutsches Institut für Wirtschaftsforschung.

Advantages of a Modified HDI

The main reason for changing the technique of calculating the index lies in the fact that a technically modified HDI does not contain any of the irritating characteristics and has therefore several advantages compared to UNDP's HDI. Firstly, the MHDI properly reflects a country's achievement over time: a rise in any of the variables always raises the MHDI. Secondly, a country's MHDI will not be affected by changes in the worst or best country. Anomalies, such as a falling HDI despite absolute improvements, cannot occur. Thirdly, small absolute differences between countries are reflected by small differences in the MHDI. As the values are not rescaled between zero and one, a narrowing of the human development gap is reflected by a narrowing of the differences in the MHDI. Fourthly, a proportional increase of all countries in one dimension will raise the MHDI of all countries and reflect the progress in human development. Fifthly, any change in a country's MHDI can be strictly traced to a change in the country itself, while any change in a country's ranking is caused by relatively faster or slower changes in other countries.

Possible Refinements

The authors of the HDR 91 are fully aware that they have only opened the debate. "Each report will further refine both the concept and measurement of human development".[22] Human development as measured presently by UNDP neglects sharp inequalities within countries, e.g. rich and poor, men and women, urban and rural. Personal income distribution is quite skewed in many countries. Gender inequality is outstanding in the South and far from being negligible in the North. And despite the masses of urban dwellers, most poor people in the Third World still live in rural areas. The present HDI based on country averages does not yet take these inequalities into account. Data allowing, UNDP presents a gender-sensitive HDI for 30 countries and a distribution-adjusted HDI for 53 countries. The Female HDI is lower than the Male HDI in all countries under review. Only Finland, Sweden, Denmark and Czechoslovakia have female-male HDI ratios of 90% or more. Nine of the 30 countries have ratios below 75%. The distribution-adjusted HDI is worse in all but two countries – Indonesia and the Republic of Korea. Africa and the Americas show the highest income disparities. These results confirm the need for a further refinement of the HDI, which will also be suited to monitor a narrowing of prevailing gaps within a country.

The goal of enlarging people's choices is incompletely reflected if the political aspect is not taken into consideration. As political freedom constitutes a substantial part of human development, the HDI also needs refinement in this respect. Although UNDP discusses several possible ways of reflecting political freedom, including the human freedom index designed by Charles Humana which covered 88 countries in 1985, it refuses to calculate an HDI adjusted for human freedom. UNDP pretends that this "... is not yet possible in any realistic fashion – because of several difficulties. The most significant one is lack of data."[23] This argument is not convincing, as UNDP sees no problem in using data from 1980 and 1985 to calculate the HDI or in presenting gender-sensitive and income-adjusted HDIs for only 30 and 53 countries respectively. It seems more likely that skilful lobbying or political pressure from some developing countries prevented UNDP from publishing such an index, as according to the human freedom index only Costa Rica is placed in the high freedom group. Many developing countries, however, do not even grant their citizens 50% of the human freedom considered essential in the human freedom index and would therefore do rather badly in an HDI adjusted for human freedom.

Conclusions

It is certainly a good idea for UNDP to publish a yearly index on human development complementary to GNP per capita. In its present form, however, the utility of the HDI for monitoring human development is rather limited due to its improper design. Therefore, it seems appropriate to modify the HDI in three steps:

☐ The HDI should be redesigned technically in order to remove the irritating characteristics which do not allow for a comparison of the HDI values over time. The conceptual flaws of the HDI – falsely representing diminishing returns, inconsistently deriving educational attainment, and sharply discounting income above the poverty line – should also be removed.

☐ This modified HDI should be calculated every year with the latest data available. A change in the structure of the HDI should be avoided in order to assure comparability over time.

☐ In the long run UNDP should refine the HDI into a more comprehensive index reflecting more aspects of human development and inequalities within a country.

If, however, UNDP continues to publish the index in its present form, the HDI might not gain broad acceptance as an indicator for human development.

---

[22] Cf. UNDP (1991), op. cit., p. 21.

[23] Ibid.