

UNITED NATIONS HUMAN DEVELOPMENT INDEX-THE CASE OF GREECE

Dr. Constantin Papagiannoulis

Scientific Associate, T.E.I. of Athens, Department of Business Administration

e-mail: kpae1984@otenet.gr, Mobile. +306945370650

Abstract

In this study we will present a comparative analysis between all United Nations indices concerning the progress of human development. In particular we will refer to the Human Development Index (HDI) and its disadvantages, and to other indicators complementing the HDI, as the Gender-related Development Index (GDI), the Gender empowerment Measure (GEM) and the Human Poverty Index (HPI).

First of all we will analyze what is the HDI, its importance, how is the HDI used and if the HDI is enough to measure a country's level of development. Furthermore we will show the calculation methods for all Human development indices, especially for the HDI. Finally, for the case of Greece, we will evaluate the comparative position of Greece among other Balkan countries and the Mediterranean countries members of European Union.

HISTORY OF THE HUMAN DEVELOPMENT REPORT

The Human Development Report was first launched in 1990 with the goal to emphasize the economic development for several countries members of the United Nations.

Since the first Report four new composite indices for human development have been developed, namely the Human Development Index (HDI) introduced in 1990, the Gender-related Development Index (GDI) introduced in 1995 Report, the Gender Empowerment Measure (GEM) also introduced in the 1995 Report and the Human Poverty Index (HPI) presented firstly in the Report of 1997.

The HD Report is an independent report. It is commissioned by the United Nations Development Programme (UNDP).

The HD Report of 2008, which uses 2006 data, has been calculated for 179 countries and territories. All data sources have been provide by the international agencies with expertise in each of the composite areas:

- The United Nations Population Division for life expectancy,
- The United Nations Educational, Scientific and Cultural Organization (UNESCO), Institute for Statistics for literacy and enrolment rates, and
- The World Bank for data on Gross Domestic Product (GDP) per capita, according to the statistics of the International Comparison Program (ICP), which is the world's largest statistical initiative and produces internationally comparable price levels, economic aggregates in real terms.

DEFINITIONS

HUMAN DEVELOPMENT INDEX(HDI)

HDI is a human development composite index. The use of HDI answers the question how two countries with the same level of income per person, can end up with such different human development outcomes.

HDI does not reflect political participation or gender inequalities. HDI can only offer a broad proxy on some of the key issues of human development, gender disparity and human poverty.

HDI is a summary measure of a country's average achievements in attaining:

- A long and healthy life, as measured by life expectancy at birth,
- Access to knowledge, as measured by 2 indicators: the adult literacy rate and combined gross enrolment ratio in primary, secondary and tertiary education,
- A decent standard of living, as measured by the GDP per capita expressed in Purchasing Power Parity (PPP US dollars).

HDI values between 0 and 1 and is used to classify the development level for each country. Values at or above 0,800 is for High human development, between 0,500 and 0,799 for Medium human development and below 0,500 for Low human development.

Life expectancy at birth is the number of years a newborn infant would live if prevailing patterns of age-specific mortality rates at the time of birth were to stay the same throughout the child's life.

Adult literacy is the proportion of the population aged 15 years and older which is literate, expressed as a percentage of the corresponding population, total or for a given sex in a given country at a specific time

usually mid-year. A person is literate if he can with understanding, both read and write a short simple statement on his everyday life.

Combined gross enrolment is the number of students enrolled in primary, secondary and tertiary levels of education, regardless of age, as a percentage of the population of theoretical school age for the 3 levels.

Gross Domestic Product is the sum of value added by all resident producers in the economy plus any product taxes not included in the valuation of output. Value added is the net output of an industry after adding up all outputs and subtracting intermediate inputs.

GDP per capita is the GDP divided by mid-year population.

HDI attempts to make an assessment of all diverse countries with very different price levels. To compare economic statistics across countries, the data must be converted into a common currency. So PPP (Purchasing Power Parity) rates of exchange allow this conversion to take account of price differences between countries. GDP per capita (PPP US\$) accounts for price differences between countries allowing international comparisons of real outputs of incomes and therefore reflect better people's living standards. In theory 1 PPP dollar has the same purchasing power in the domestic economy of a country as 1 US dollar has in the US economy.

1. GENDER-RELATED INDEX(GDI)

The Gender-related Development Index complements the three basic dimensions of HDI and is adjusted to account for inequalities between men and women.

2. GENDER EMPOWERMENT MEASURE(GEM)

The Gender Empowerment Measure (GEM) seeks to reflect the extent to which women and men are able to participate actively in economic and political life and take part in decision-making. While the GDI focuses on expansion of capabilities, the GEM is concerned with their use. GEM captures gender inequality in 3 key areas:

- Political participation, as measured by the percentage of seats held by women in national parliaments.
- Economic participation and decision-making power, as measured by the percentage shares of women and men among legislators, senior officials and managers as well as in professional and technical fields,
- Power over economic resources, as measured by the estimated earned income of females and males (in PPP US\$).

3. HUMAN POVERTY INDEX(HPI)

The Human Poverty Indices (HPI-1 and HPI-2) were introduced to address the need for measures that were disadvantaged within society, and complement concepts of poverty that were largely monetary.

The HPI-1 for developing countries measures the deprivation in:

- Vulnerability to early death, as measured by the probability at birth of not surviving to age 40 years,
- Exclusion from the world of knowledge and communication, as measured by the adult illiteracy rate,
- Lack of access to adequate economic provisioning, as measured by the average of 2 indicators, the percentage of the population not using improved water source and the percentage of children under weight for their age.

For the HPI-2 for industrialized (developed) countries the targets are set slightly higher:

- Vulnerability to early death, as measured by the probability at birth of not surviving to age 60 years,
- Exclusion from the world of knowledge and communication, as measured by the population aged 16-65 years,
- Lack of access to adequate economic provisioning, as measured by the percentage of the population living below the income poverty line,
- Social exclusion, as measured by the long-term unemployment rate (for at least 12 months)

CALCULATIONS OF HUMAN DEVELOPMENT INDEX-THE CASE OF GREECE

Any component of the HDI individual indices can be calculated according to the general formula:

Index= (Actual value-Minimum value)/ (Maximum value-Minimum value)

To construct the Human Development Index fixed minimum and maximum values have been established for each of these indicators:

- life expectancy at birth 25 years and 85 years
- adult literacy take 0% and 100%

- combined gross enrolment ratio 0% and 100%
- real GDP per capita (PPP US\$) \$100 and \$40000(PPP)

The life expectancy index measures the relative achievement of a country in life expectancy at birth. The formula is:

$$\text{Life expectancy index} = \frac{[(\text{life expectancy at birth}) - 25]}{[85 - 25]}$$

The Education Index measures a country's relative achievement in both adult literacy and combined primary, secondary and tertiary gross enrolment.

The formula is:

$$\text{Educational Index} = \frac{2}{3} \times (\text{adult literacy index}) + \frac{1}{3} \times (\text{combined gross enrolment ratio})$$

$$\text{Adult literacy index} = \frac{[\text{actual value} - 0]}{[100 - 0]}$$

$$\text{Combined gross enrolment ratio} = \frac{[\text{actual value} - 0]}{[100 - 0]}$$

GDP per capita only reflects average income, it tells nothing of how that income is distributed on health, education or military expenditure.

The formula for the Gross Domestic Product Index, in PPP US\$, is:

$$W(y) = \frac{[\log y - \log y_{\min}]}{[\log y_{\max} - \log y_{\min}]}, y \text{ is the GDP per capita (PPP US\$)}$$

The calculation for HDI is:

$$\text{HUMAN DEVELOPMENT INDEX} = \frac{1}{3} \times (\text{LIFE EXPECTANCY INDEX}) + \frac{1}{3} \times (\text{EDUCATION INDEX}) + \frac{1}{3} \times (\text{GDP INDEX})$$

Calculating the HDI for Greece:

According to the HD Report 2008, which uses 2006 data, the values for Greece are the following:

- **Life expectancy at birth: 79,1 years**
- **Adult literacy rate(% aged 15 and above): 97,0**
- **Combined gross enrolment ratio(%): 101,60**
- **Gross domestic product(PPP US\$): 31290**

1. Calculating the life expectancy index:

$$\text{Life expectancy index} = \frac{(79,1 - 25)}{(85 - 25)} = 54,1/60 = 0,902$$

2. Calculating the education index:

$$\text{Adult literacy index} = \frac{(97,0 - 0)}{(100 - 0)} = 0,970$$

$$\text{Gross enrolment ratio} = \frac{(101,60 - 0)}{(100 - 0)} = 101,60$$

$$\text{Education index} = \frac{2}{3} \times (\text{adult literacy index}) + \frac{1}{3} \times (\text{combined gross enrolment ratio}) = \frac{2}{3} \times 0,970 + \frac{1}{3} \times 101,60 = 0,980$$

3. Calculating the GDP index:

$$\text{GDP index} = \frac{[\log(31290) - \log(100)]}{[\log(40000) - \log(100)]} = 0,959$$

4. Calculating the Human Development Index:

$$\text{HDI} = \frac{1}{3} \times (\text{life expectancy index}) + \frac{1}{3} \times (\text{education index}) + \frac{1}{3} \times (\text{GDP index}) = \frac{1}{3} \times 0,902 + \frac{1}{3} \times 0,980 + \frac{1}{3} \times 0,959 = 0,947$$

CONCLUSION

The UN Human Development Index Report of 2008 shows an upwards trend in human development and the reason for that is the improvement in economic performance and education for most countries worldwide. According to HDI Tables of the HD Report of 2008, which uses 2006 data, Iceland is on the first place on the U.N. world ranking list and Greece is on the 18th Rank among all United Nations countries, 3th of all South-European and Mediterranean countries members of the European Union and first of all Balkan countries.

Comparing with the HD Report of 2007, which used 2005 data, there is a significant improvement for Greece, namely from the 24th Rank (in 2005 HDI was 0,926) to the 18th Rank (in 2006 HDI is 0,945). The GDI rank is for Greece the 15th and the GEM rank is the 26th according to the HD Report.

Very important is the column of the Comparison Table, showing GDP per capita (PPP US\$) minus HDI rank representative. A positive figure indicates that the HDI rank is higher than the GDP per capita (PPP US\$) rank, a negative the opposite.

Due to the world economy crisis of last year, which occurred great problems and the collapse for some countries of their national economy, there will be severe changes in the UN ranking list for many countries.

The comparison of all indices between Greece and the Balkan countries, and the Mediterranean European Union's member-countries shows that Greece is in the first place among the Balkan countries and in the third place among the Mediterranean EU countries. That means that Greece relating to the Human Development has a dominant position between them, and is very competitive.

In the Reports of the next two years, that means HDI Reports of 2010 and 2011, which will use 2008 and 2009 data accordingly, we will see several and severe changes in all indices. The main reason will be the world economic crisis beginning from autumn 2008 and the collapse of some national economies, as for example the first HDI ranked Iceland and some other countries.

Therefore we can conclude that the results for Greece concerning Human Development will remain the same and perhaps will be improved in the future, although there will be perhaps a change in the GDP Index which will influence slightly the final HDI.

In general we can conclude that the impacts of the current economic crisis are not yet reflected in the future Human Development Indices calculations.

References

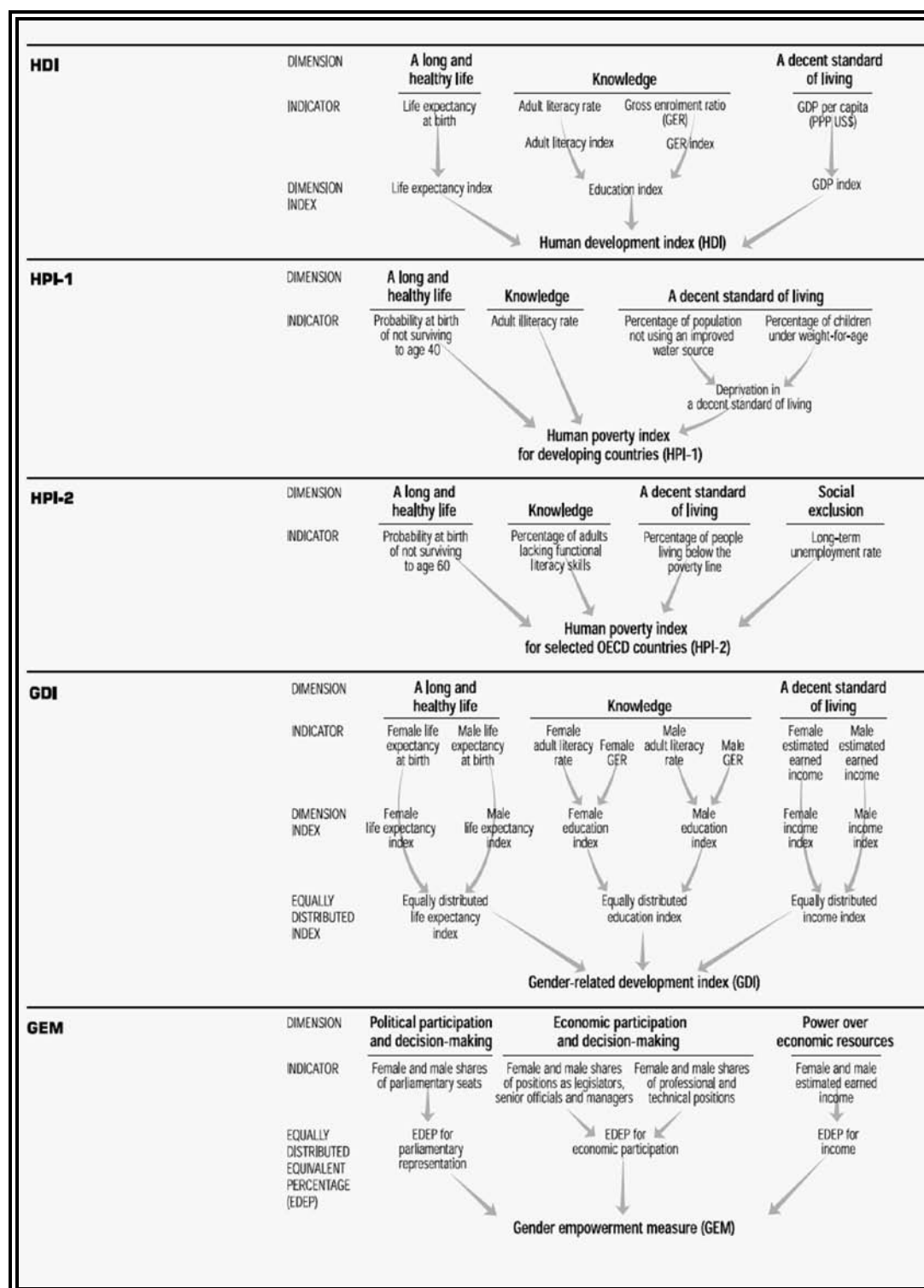
1. HUMAN DEVELOPMENT REPORT 2007/2008, TECHNICAL REPORT, UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)
2. HUMAN DEVELOPMENT INDICES, A STATISTICAL UPDATE 2008, PUBLISHED FOR THE U.N.D.P.
3. HUMAN DEVELOPMENT 2008, TABLES, U.N.D.P.

Table 1. Human Development Indices (HDI) 2006 - Comparison Table.

COUNTRIES	HDI RANK	HDI value	LIFE EXPECTANCY AT BIRTH (years)	LIFE EXPECTANCY INDEX	ADULT LITERACY RATE (% aged 15 and above)	COMBINED GROSS ENROLMENT RATIO IN EDUCATION (%)	EDUCATION INDEX	GROSS DOMESTIC PRODUCT PER (GDP) CAPITA (PPP US\$)	GDP INDEX	GDP RANK MINUS HDI RANK	GENDER RELATED DEVELOPMENT INDEX (GDI)	GENDER EMPOWERMENT MEASURE (GEM)	GDP INDEX
EUROPEAN UNION													
GREECE	18	0,947	79,1	0,901	97,0	101,6	0,980	31290	0,959	8	0,940	0,691	0,959
FRANCE	11	0,955	80,4	0,923	-	95,4	0,978	31980	0,963	12	,952	0,780	0,963
SPAIN	16	0,949	80,7	0,928	97,4	96,5	0,971	29208	0,948	11	,945	0,825	0,948
ITALY	19	0,945	80,4	0,923	98,8	91,8	0,965	28828	0,945	9	,939	0,734	0,945
CYPRUS	30	0,912	79,0	0,901	97,6	77,6	0,909	25837	0,927	0	0,910	0,615	0,927
PORTUGAL	33	0,900	77,9	0,882	94,6	88,8	0,927	20845	0,891	7	,897	0,741	0,891
MALTA	36	0,894	79,2	0,904	91,4	81,3	0,880	21715	0,898	1	0,889	0,529	0,898
BULGARIA	56	0,834	72,9	0,798	98,3	82,4	0,930	10295	0,773	9	0,832	0,605	0,773
ROMANIA	62	0,825	72,2	0,786	97,6	79,2	0,914	10-433	0,776	2	0,825	0,500	0,776
BALKAN													
CROATIA	45	0,862	75,5	0,842	98,6	77,2	0,915	14309	0,828	6	0,859	0,622	0,828
SERBIA	65	0,821	73,8	0,813	96,4	74,5	0,891	9468	0,760	9	0,818	0,584	0,760
FYROM	68	0,808	74,0	0,816	96,8	70,1	0,879	7921	0,730	10	0,803	0,644	0,730
ALBANIA	69	0,807	76,3	0,856	99,0	67,8	0,886	5884	0,680	27	0,804	-	0,680
BOSNIA & HERZEGOVINA	75	0,802	74,6	0,827	96,7	69,0	0,874	6801	0,704	14	-	-	0,704
TURKEY	76	0,798	71,6	0,776	88,1	71,1	0,824	11535	0,792	-15	0,780	0,371	0,792

SOURCE: UNDP, HUMAN DEVELOPMENT INDICES, REPORT 2008

Table 2. The diagrams here summarize how the five human development indices are constructed, highlighting both their similarities and their differences. Full details of the methods of calculation can be found at: <http://hdr.undp.org/technicalnote1>.



SOURCE: UNDP, HUMAN DEVELOPMENT INDICES, REPORT 2008