Charles University in Prague
Faculty of Social Sciences
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Bachelor Thesis

Gross Domestic Product As A Welfare Index

Beyond GDP

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Declaration of Authorship

I hereby declare that I compiled this thesis independently, using only the listed resources and literature.

Prague, July 26, 2010 Martin Baletka

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Abstract

Title: **Gross Domestic Product As A Welfare Index**
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Abstract: This thesis demonstrates that the gross domestic product, invented to measure market economic activity is often wrongly re-interpreted as welfare of well-being index. Further, it describes the on-going discussion about possible replacement of the gross domestic product as it does not reflect future needs.
The thesis is not intended to invent new measure, but rather to describe and sum up the most interesting ideas and think-tanks around the world to provoke further discussion on the topic. Additionally, selected alternative indices are introduced and compared to the gross domestic product. And last but not least, selected alternative approaches like subjective well-being and gross national happiness are present.

Classification: **JEL E01**
Keywords: **index, indicator, GDP, progress, well-being, welfare**

Abstrakt

Název práce: **Hrubý domácí produkt jako indikátor blahobytu**
Podtitul: **Za hranice HDP**
Autor: **Martin Baletka**
Vedoucí práce: **Doc. Ing. Tomáš Cahlík, CSc.**

Abstrakt: Tato práce ukazuje, že hrubý domácí produkt, vytvořený k měření ekonomické aktivity, je často špatně označován jako indikátor blahobytu. Dále práce popisuje probíhající diskusi o možném nástupci hrubého domácího produktu, jelikož neodráží naše budoucí potřeby.
Tato práce si neklade za cíl přijít rovnou s novým ukazatelem, nýbrž spíše popisuje a shrnuje nejzajímavější nápady z celého světa s cílem vyvolat širší diskusi na dané téma. K tomuto účelu jsou přestaveny vybrané alternativní indikátory a následně porovnány s hrubým domácím produktem. V neposlední řadě jsou uvedeny take vybrané alternativní přístupy, jako je subjektivní pocit blaha a hrubé národní štěstí.

Klasifikace: **JEL E01**
Klíčová slova: **indikátor, HDP, pokrok, blahobyt**

Contents

1. Introduction

The primary goal of this thesis is trying to demonstrate that the gross domestic product (GDP), invented as a measure of market economic activity, is not suitable for nor capable of measuring societal welfare and well-being as it is, however, increasingly been reinterpreted in today's world. There is a gap for a new measure for both progress and well-being, which would possibly in not so distant future replace the GDP as the "number one" index in modern economics. The discussion about the "replacement of the GDP" has already been started and one of my main goals is to promote these thoughts and summarise the on-going discussion.

This thesis is not particularly intended to invent new measure for the future but rather to collect the most interesting ideas, thoughts and initiatives all around the world to open minds and to provoke a wider discussion in the field of "going beyond GDP".

In the time of writing I realised that this thesis would be far more interesting if already existing alternatives to GDP were included, rather than just reporting current movements and initiatives for "going beyond GDP". Numerous head-to-head comparisons of GDP and individual alternative indicators were added to further increase the relevance of the message and demonstrate the actual discrepancies between what GDP measures and how it is being often interpreted. Thus the final work is not a perfect image of the outline in the pre-writing thesis prepared in 2009. In addition, due to the initial supervisor's lack of time available for supervising students' theses and his over-occupation in the relevant time period, it has been recommended to find and contact new supervisor for the thesis. It all has been managed.

The work is opened with Chapter 2 and 3 bringing in a very brief history and definition of GDP and its comparison across the world.

Followed by Chapter 4 where limits of GDP and the features being criticised if using GDP as a welfare index are described. All supported by a public survey and two international initiatives to "go beyond GDP" with their recommendations.

Lastly, Chapter 5 where numerous alternative indicators and alternative approaches are covered, including their direct comparison with GDP. The most interesting is the direct comparison of GDP per capita with Human Development Index. And last but not least the Bhutanese already put into action revolutionary concept how to measure well-being, called Gross National Happiness.

2. Brief history of GDP[1]

When GDP and SNA[2] methodologies were initially developed in the US and UK in the 1930s and 1940s, the world was in the midst of major social and economic upheaval from two global wars and the Great Depression. President Roosevelt's government used the statistics to justify policies and budgets aimed at bringing the US out of the depression. As it became more likely that the US would become involved in World War II (WWII), there was a concern about whether this would jeopardize the standard of living of US citizens who were just beginning to recover from the depression. GDP estimates were used to show that the economy could provide sufficient supplies for fighting WWII while maintaining adequate production of consumer goods and services.

The use of GDP globally as a measure of economic progress was further strengthened as a result of the Bretton Woods Conference. A key factor in the outbreak of WWII was economic instability in a number of countries caused by unstable currency exchange rates and discriminatory trade practices that discouraged international trade. In 1944, in order to avoid a recurrence of such instability, leaders of the 44 allied nations gathered in Bretton Woods to create a process for international cooperation on trade and currency exchange. The intent of the meeting was to speed economic progress everywhere, aid political stability and foster peace. International trade would create jobs in all countries. Those jobs would provide income that would allow people everywhere to obtain adequate food, housing, medical care, and other amenities. Improving economic well-being was thus key to creating lasting world peace. Growing the economy was seen as the path to economic well-being.

Thus GDP came to be used as the primary measure of economic progress in the ensuing 60 years and still remains the most widely used measure of economic progress.

Economists have warned since its introduction that GDP is a specialized tool, and treating it as an indicator of general well-being is inaccurate and dangerous. However, over the last 70 years economic growth measured by GDP has become the sine qua non for economic progress. Per capita GDP is frequently used to compare quality of life in different countries. Governments often use changes in GDP as an indicator of the success of economic and fiscal policies. GDP is one of the most

[1] COSTANZA Robert; HART Maureen; POSNER Stephen; TALBERTH John. Beyond GDP: The Need for New Measures of Progress. 2009

[2] SAN = System of National Accounts

comprehensive and closely watched economic statistics, used to prepare budgets, to formulate monetary policies, as an indicator of economic activity, to prepare forecasts of economic performance that provide the basis for production, investment, and employment planning. Internationally, changes in a country's GDP are used by both the IMF and the World Bank to guide policies and determine how and which projects are funded around the world.

Today GDP in particular and economic growth in general is regularly referred to by leading economists, politicians, top-level decision-makers, and the media as though it represents overall progress.

3. Brief definition of GDP

Originally I intended to mention definitions and full list of items included and disregarded from GDP calculations in most countries. However I realised later that the real difference is very small and rather negligible. Thus I limited the observations to the Czech Republic, European Union and USA and I am going to mention only the differences.

A general definition by Gregory Mankiw says:

"GDP is the market value of all final goods and services produced within a country in a given period of time." [3]

However the real composition of GDP slightly differ throughout the world, i.e. the GDP level we get in the end is calculated in a different way it seems to be essential to realize how exactly those numbers were obtained to find out whether it really makes a difference or not and whether we can compare those numbers directly as they are (without any further harmonization).

3.1. GDP in the Czech Republic

Situation in the Czech Republic is following: In charge of collection and analysis of all statistical data, GDP included, for national offices, public sector and foreign agencies, is the Czech Statistical Office[4]

[3] MANKIW, Gregory. Brief Principles of Macroeconomics. 2009 - p.96
[4] In Czech: "Český statistický úřad", http://www.cszo.cz

(CZSO). That means that their datasets and conclusion are supposed to be the most credible source. CSZO is using following definition of the GDP:[5]

"*GDP is the key indicator of the economic development. It represents the sum of values added by all branches of activities which are considered productive in the system of national accounts (including market and non-market services). Calculations are made at current prices and results are then converted into constant prices so that development excluding influences due to price changes can be kept track of."* [6]

It is quite vague but as we can see the definition remains still the same – GDP includes all final products and services produced within a country in a given period of time without regard to ownership of production factors (i.e. by both residents and foreigners). Generally speaking it includes all transactions involving money transfers with these exceptions – it does not include:[7]

- Intermediate products (their value is already included in the prices of final products)
- Transactions involving items produced in past (second-hand reselling)
- Transfers (payments which are not followed by reallocation of goods or services)
- Items produced illicitly or sold illegally on markets (grey economy)
    - Note: It is almost impossible to track or calculate the value of those items (no matter how great their amount might be). Though one thing is certain, in a mature democratic system these items will not add up to the total welfare of its habitants as I will try to demonstrate later.
- Owner-occupied housing (no money transaction is made which results in no GDP change)
- Items produced and consumed at home (they never enter the marketplace)
    - *"These exclusions from GDP can at times lead to paradoxical results. For example, when Karen pays Doug to mow her lawn, that transaction is part of GDP. If Karen were to marry Doug, the situation would change. Even though Doug may continue to mow Karen's lawn, the value of the mowing is now left out of GDP because Doug's service is no longer sold in a market. Thus, when Karen and Doug marry, GDP falls."* [8]

[5] For full methodology specification see http://www.czso.cz/eng/redakce.nsf/i/methodology_quartely_national_accounts/$File/01486088.pdf
[6] Czech Statistical Office, 2008 - http://www.czso.cz/eng/redakce.nsf/i/gross_domestic_product_(gdp)
[7] CAHLÍK, Tomáš. Makroekonomie, 2006 - p.9
[8] MANKIW, Gregory. Brief Principles of Macroeconomics, 2009 - p.94

- Note: In this situation the GDP has fallen down on the other hand the welfare can be considered to be unchanged.

3.2.GDP in the European Union (EU)[9]

Statistical data on European level are provided by Eurostat who process and publish comparable statistical information at European level.[10]

To be more accurate: Member States are those who collect data and provide statistics which are then linked through the European Statistical System to Eurostat, whose another role is to lead the way in the harmonization of statistics in cooperation with the national statistical authorities. Nowadays the harmonization has been extended to nearly all statistical fields.

In other words there is hardly any difference between Czech and European GDP as the Czech Republic is a member of the EU.

3.3.GDP in the USA

Calculation of the GDP in USA is almost the same with one exception – owner-occupied housing is included:

"GDP also includes the market value of the housing services provided by the economy's stock of housing. For rental housing, this value is easy to calculate – the rent equals both the tenant's expenditure and the landlord's income. Yet many people own the place where they live and, therefore, do not pay rent. The government includes this owner-occupied housing in GDP by estimating its rental value. In effect, GDP is based on the assumption that the owner is renting the house to himself. The imputed rent is included both in the homeowner's expenditure and in his income, so it adds to GDP." [11]

3.4.Comparison and unification of GDP (author's note)

Originally I intended to perform a full comparison of methodologies for computing GDPs in different countries but these data are not easy to access thus I limited my observations to Czech Republic and

[9] Eurostat [online] 2010 - http://epp.eurostat.ec.europa.eu/portal/page/portal/about_eurostat/european_framework/ESS
[10] Eurostat [online] 2009 - http://epp.eurostat.ec.europa.eu/portal/page/portal/about_eurostat/corporate/introduction/harmonization
[11] MANKIW, Gregory. Brief Principles of Macroeconomics, 2009 - p.94

European Union and United States of America as representatives of the biggest economics in the world. I was considering whether to include China in my comparison research or not, but in the end I realised that totalitarian politics with centrally planned economy contains too much distortion that I wouldn't be able to analyse it correctly any further, especially concerning trustworthiness[12] of its data.

Concerning the question whether the unification of methodologies used or simply calculations of the GDPs across the world is desirable or not – personally I could not have found any argument against, nor in the sources. According to these thoughts there is a perfectly natural tendency for this harmonisation in the globalised world of today and especially in economic and political unions like the European one (see the paragraph 3.2 GDP in the European Union (EU) above).

4. What is the GDP used for?

In simple words the GDP is the most frequently used indicator of market activity to measure the growth of a country's economic activity between one period and another; which is then used to a cross-border comparison of a proxy for a standard of living in a country. It is also quite often interpreted as indicator of progress and therefore being used for decision-making and policy-making.

4.1. Why do we need indicators?[13]

As Tony Blair said – "Good policy needs good statistics"; because what we measure affects what we do. If we have the wrong metrics, we will strive for the wrong things. Put simply we need indicators for:

- Backward looking
    - Evaluation: what works and what does not
    - International comparisons and time series
- Forward looking
    - Put focus on new policy proposals
    - Forecasting and ex-ante assessments
- Practical politics

[12] RAWSKI, Thomas G. What is happening to China's GDP statistics?, 2001 - p.347-354
[13] CANOY, Marcel. Well-being and Policy Making, 2010

- Provides common language in public debate
- Provides consistency in policy package
- Provides accountability

4.2.Limits of the GDP[14]

There is nothing wrong with GDP itself. It is a valuable economic indicator which serves an important purpose in economic policy making. Due to the implicit link between economic growth and aspects of well-being such as employment and consumption, GDP is often regarded as a proxy indicator of human development and well-being. Within the existing framework of national accounts the information covered could be broadened by putting more emphasis on net domestic product such as GDP corrected for depreciation or by better measuring nations' balance sheets.

But the way GDP takes into account social and environmental issues in measuring economic growth is questionable. GDP does not factor in a number of elements important in determining the well-being of people. For example, it overlooks the value of certain non-market goods and services such as natural resources and unpaid activities and leisure. GDP highlights average income which may not correspond to the actual income of any specific group of the population. Average income provides no indication about the distribution of income between citizens. And it focuses on short-term economic activities rather than longer-term sustainable development aspects such as the growth of natural, economic and human capital.

Most other mainstream economic indicators are also limited in the way they tackle non-economic issues such as progress and well-being. It is important to know how many goods and services are produced or how strong an economy is, but more needs to be taken into account, such as the state of the environment, the evolution of social issues, and progress towards sustainable development.

Citizens are as a general rule better off if they are richer. However, the quality of life or well-being also depends on the type of goods consumed, the amount of leisure time available, the relationship with families and friends, and the health of the surrounding environment. Today a greater number of people feel their well-being is undermined by too much pressure of work, unemployment, family break-ups, pollution and climate change. This is why policy makers are interested in having more statistics that address these issues instead of pure economic indicators.

[14] EUROPEAN COMMISSION. Beyond GDP: Measuring progress, true wealth and the well-being of nations, 2009

> *GDP measures everything "…except that which makes life worthwhile."*
>
> *"Our Gross National Product (…) counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for the people who break them. It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl. It counts napalm and counts nuclear warheads and armored cars for the police to fight the riots in our cities. It counts Whitman's rifle and Speck's knife, and the television programs which glorify violence in order to sell toys to our children. Yet the gross national product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country, it measures everything in short, except that which makes life worthwhile. And it can tell us everything about America except why we are proud that we are Americans."* [15]
>
> *Robert F. Kennedy, speech at the University of Kansas, March 18, 1968* [16]

GDP is well defined as a measure of a country's overall economic activity. However it can only capture quantity not quality. GDP does not measure wealth. It measures consumption and investments in a given year, not how rich people are, or how much wealth society has through the accumulation of buildings, machinery, consumer goods, schools, universities, road and rail networks, and art.

There are very few statistics on material wealth and even fewer on natural, environmental, social and cultural wealth. Material wealth too often overshadows the pursuit of non-material wealth. Access to improved data on non-material and non-economic wealth would help citizens and policy-makers better balance the various aspects of well-being. This is what sustainable development is all about.

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[15] Robert F. Kennedy, speech at the University of Kansas, March 18, 1968 – see references for online links to full transcript and recorded speech

[16] COSTANZA Robert; HART Maureen; POSNER Stephen; TALBERTH John. Beyond GDP: The Need for New Measures of Progress, 2009

Other facets of well-being such as happiness are more difficult to measure. But researchers have now developed reliable ways of measuring how satisfied people are with life in general and with specific aspects such as the level of satisfaction with work, family, friends, neighbourhood, income and wealth, and country and government. This research is important for policy-makers in implementing policies that foster a higher degree of public satisfaction and happiness.

4.3.GDP critique

A critique of the GDP for purpose of usage as a welfare, wellbeing or progress indicator is generally aimed to one of two dimensions.

1) Relevant features missing and negative features included:

   As the GDP is constructed to measure output in terms of money not progress or wellbeing some relevant features are not included as the nature of GDP disregards things important in human life both positive (non-market goods, unpaid activities, leisure) and negative (negative externalities and natural disasters – cleaning their outcomes up).

2) Growth obsession:

   Decrease in GDP is naturally perceived as a negative result in performance of the economy, and when the GDP per capita is concerned, the situation is the same maybe even visible because none of us wants to be worse off. Thus growth in GDP is highly preferable and even stagnation is mostly considered to be a negative signal.

4.3.1. Features missing in the GDP

As Jiří Mikolášek has stated in his article:[17] Imagine a hypothetical situation where women are being paid for taking care of their households (i.e. every woman makes the housework at another woman's household, but never at her own). Let's take a Czech republic as an example. Latest GDP figure for year 2009 is 3630 milliards CZK[18]. Population of 10 million habitants, more than 50 % of those are women. Considering the demographic status let's say that 3 million of those women do 4 hours of housework every single day. That makes 120 hours of work per month; times 12 months in a year we get 43800 hours of work per year. Housework wage is at least 60 CZK per hour.

[17] MIKOLÁŠEK, Jiří. Cena ženy aneb jak zvýšit HDP, 2002

[18] Czech Statistical Office, [q. 2010-03-28] (note: milliard = 1000 million = 10^9) - http://www.czso.cz/csu/csu.nsf/informace/chdp03111010.xls

$$60\frac{CZK}{h} \times 120\frac{h}{m} \times 12\frac{m}{y} \times 3\ milion\ women = 259{,}2\ miliards\ CZK/y$$

This way we have easily calculated that if housework is to be included in the GDP calculation the GDP would have increased by 259,2 milliards (per year) which is slightly more than 7 % of the official GDP. That is in absolute terms more than the difference between GDP of 2008 and 2007 (year-to-year increase of the whole GDP between years 2007 and 2008 (I am avoiding comparison of y/y increase of 2009/2008 on purpose because of the after-crisis recession in 2009. Growth in 2008/2007 can be considered as "normal" – following its trend.).

4.3.2. Growth "obsession"

Another paradox or misinterpretation of GDP is the fact that in general one would have thought that the higher the GDP the better off we are. (Funny to notice (mention) that even the inventor of the GDP Simon Kuznets was aware of this feature[19] and has warned about this way of misinterpretation in his very first report to the US Congress in 1934)[20]

This is actually closely linked to production of negative externalities mentioned in the first dimension of GDP critique.

A good example of this misinterpretation are financial flows created by neutralization of damage caused by natural disaster or just simply neutralization of damage to the natural environment which might have been a negative externality of an old factory – in other words we could say that the production from this factory was "added twice" to the GDP – first the production itself, second neutralizing the damage to the environment. We can continue this spiral of thoughts: That pollution could immensely decrease the quality of drinkable water so the residents are obliged to buy bottled water in a supermarket and apart from that it could make people sick and force them to buy medicaments or even receive treatment in a hospital. And all that aspects make part of the GDP and make it to grow while none of these aspects can be observed as a positive one or contributing to the quality of living. This creates a sort of perpetual motion machine by using damages made by "unsustainable race for growing GDP at all costs" to constantly increase GDP over and over again.[21]

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[19] "It's not a bug, it's a feature." – Author Unknown

[20] "…the welfare of a nation [can] scarcely be inferred from a measure of national income…" KUZNETS, Simon. National Income, 1929-1932, 1934

[21] Vít, Josef. HDP = nesmyslný ukazatel ničeho...

4.3.3. Easterlin paradox[22]

American economist Richard Easterlin conducted a research in 1974 in subjective well-being asking Americans the question: „Taken all together, how would you say things are these days – would you say that you are very happy, pretty happy, or not too happy?"

He found out that 1) within a given country people with higher incomes are in average being happier than people with lower incomes and 2) in international comparison the average reported level of happiness is also correlated with levels of national income per person – but for countries above certain level of income this correlation is disappearing and for the richest countries the level of income does not provide happier population.

Similarly, although income per person in the United States rose rapidly after World War II, the average reported happiness stagnated.

To sum up, GDP fails to notice the difference between positive and negative economic activity to a human life and/or nature itself and simultaneously it is purely additive index (it cannot subtract the negative parts).

4.4.Public survey on true wealth measures[23]

A public research across ten countries was conducted in June to August 2007 (in Australia, Brazil, Canada, France, Germany, Great Britain, India, Italy, Kenya and Russia). In this survey around 1,000 respondents in each country were asked which of the two points of view was closest to their own:

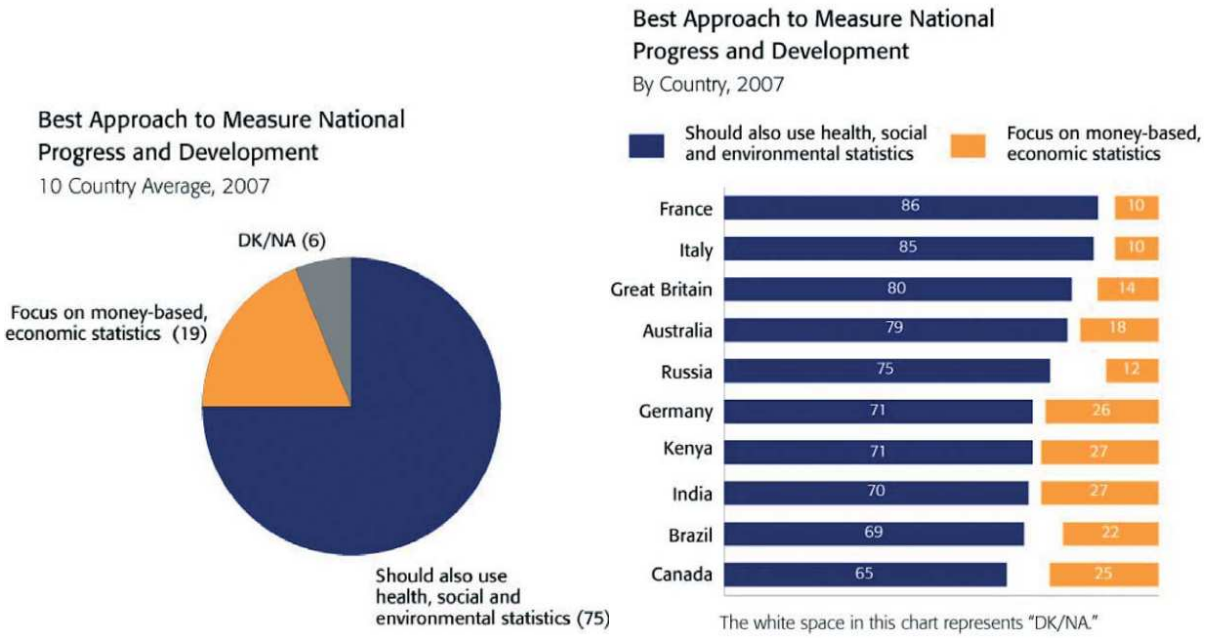
1) That governments should measure national progress using money-based statistics because economic growth is the most important focus for the country; or
2) That health, social and environmental statistics are as important as economic ones and that governments should also use these for measuring national progress.

This survey showed large public support for a broader measure of true wealth, looking beyond GDP. In average ¾ of people in surveyed countries believe their governments should look beyond economics, and include health, social and environmental statistics in measuring national progress. And only 19 % believe that economic growth alone is the most important measure.

[22] ŠTIKA, Pavel. Ekonomie a štěstí, 2008
[23] EUROPEAN COMMISSION. Beyond GDP: Measuring progress, true wealth and the well-being of nations, 2009

Support for the "beyond GDP" statement is especially strong in developed countries. The French and Italians are most enthusiastic, with 85 % of people supporting true wealth measures from health and social statistics. Only 10 % support purely economic indices. In the developing nations of India and Kenya, around 70 % agree with the broader growth measures, but a significant minority of 27 % still believe in economics alone.

Figure 1 – Results of the survey



Furthermore, previous studies conducted in the United States have shown up to 79 % approval of the same preference among Americans. Most probably, international public opinion would be supportive of the new beyond GDP measure.

4.5.Beyond GDP Conference[24]

In November 2007 the European Commission, European Parliament, Club of Rome, OECD and WWF hosted a high-level conference discussing which indices are the most appropriate to measure progress, and how these can best be integrated into the decision-making process and taken up by

[24] EUROPEAN COMMISSION. Beyond GDP: Measuring progress, true wealth and the well-being of nations, 2009

public debate. The conference brought together high-level experts and policy makers to address these critical issues. Over 500 people from economic, social and environmental spheres attended.[25]

*European Commission President José Manuel Barroso, in his speech opening the conference, highlighted how GDP, since its birth in the 1930s, was rapidly adopted as the best-recognised measure of economic performance in the world. He added that "GDP is an indicator of economic market activity. It was not intended to be an accurate measure of well-being. Even Simon Kuznets, ... one of the main originators of GDP, said: '**the welfare of a nation can scarcely be inferred from a measure of national income**'". President Barroso also noted that despite being an invaluable tool for economic policy, GDP is unfit to reflect many of today's challenges, such as climate change, public health and the environment. "**We cannot face the challenges of the future with the tools of the past**", he said.*

According to President Barroso, we should aim for "the sort of breakthrough that we saw in the 1930s, a breakthrough that adapts GDP, or complements it with indicators that are better suited to our needs today, and the challenges we face today".

President Barroso concluded, "It's time to go beyond GDP".

4.5.1. GDP no longer a good measure of well-being

Moving towards a low-carbon economy, preserving biodiversity, promoting resource efficiency and achieving social cohesion are today as important as economic growth. Measuring these elements in a comprehensive manner to quantify the well-being of a country is highly complex and most economic indicators used today – such as GDP – do not fully address these issues.

The GDP indicator was created in the wake of the great depression and the subsequent World War II as a means of providing decision-makers with a measure of economic performance and activity. But today's economy and society are substantially different from those of the mid-20th century when GDP was conceived.

GDP has arguably helped decision-makers avoid a second great depression, guide reconstruction efforts after the war and maintain unprecedented economic growth over the past 40 years. But the

[25] Beyond GDP - International Conference - 19 & 20 November 2007, Brussels - http://www.beyond-gdp.eu/overview.html

indicator alone cannot reflect all facets and needs of modern society. Indeed a growing GDP can mask substantial losses in wealth and well-being. A country could, for example, cut down all its forests or send children to work instead of school and this would have a positive effect on GDP or a hurricane killing thousands and wreaking widespread destruction could prove beneficial to GDP due to the ensuing reconstruction efforts.

4.5.2. Moving beyond GDP

GDP indicates that the output of the world's major economies have been growing steadily from the 1950s to date. But using other indicators it is clear that progress has not kept pace with GDP and that during certain periods some countries' economic welfare has even stagnated.

Over the last two decades a number of alternative indicators have been designed to complement GDP in measuring progress and the health of the economy. They introduce aspects not covered by GDP such as the long-term accumulation of wealth (natural, economic and social), the levels of life expectancy, literacy, and education and the negative impact of pollution and resource degradation.

Some of these indicators are already in use today to measure “real progress” in setting targets and objectives. In March 2001 the Welsh Assembly was the first administration in the world to do so. However, these indicators are neither homogeneous nor is their use widespread.

The European Union is now developing an indicator that would measure environmental progress and also use integrated accounting and other sub-indicators to improve policy-making.

4.5.3. Summary

In late august 2009 the European Commission has released a paper that summaries the main achievement of the 2007 Beyond GDP conference. The bottom line has been to clearly demonstrate the political consensus on the need to go beyond GDP.

The main points from the Beyond GDP conference are following:

1) There is a need for action to go beyond GDP to measure progress, true wealth and well-being of nations.
2) There is urgency for action. We are living beyond the resources of our one planet and destroying the resources upon which we depend. Critical social challenges include social cohesion, employment, education, happiness, migration and poverty issues.
3) We need to have a better understanding of the value of stocks of natural resources and of the vital services provided by ecosystem services.

4) Access to quality, timely data is important. – We have stock market information every minute of the day. We have quarterly reports of GDP. But information on environmental and social trends is often years old by the time it reaches policy makers.
5) The way forward requires progress on various measurement tools at the same time. There is a role for composite indicators such as the Ecological Footprint and Human Development Index that are easily understandable, easy to communicate and raise awareness in the public. There is a role for headline indicators. And there is an important role for accounting frameworks for both environmental and social topics.
6) There is political consensus on the need to go beyond GDP. Europe is committed to taking a leading role and working in partnership. It is essential that the momentum is not lost and to work closely with business.

It is clear that the "way beyond GDP" will take a long time but this development is supposed to be necessary for the future.

According to Enrico Giovanni from OECD any decision making based on one single indicator is never going to be a good one – complementary indicators are needed. A widespread agreement was present at the expert workshop that GDP is not sufficient as an indicator of well-being. The majority of the experts attending the workshop supported the idea of complementary indicators (as opposed to "correcting" GDP).

Business is already integrating environmental and social concerns into its management systems as part of its value-based management approach, which analyses future products and processes using not just financial costs and revenues, but also environmental and social indicators. That "triple-bottom-line accounting" (people, planet and profit) advanced the analysis of risks and helped businesses to integrate environmental and social issues into the balance sheet.

Short term income generation can lead to collapse of whole economies, as testified by the Mauritanian fisheries collapse in 1987. It is vital to strengthen resource management, especially in developing countries – where environmental degradation represents a cost up to 6% of China's GDP, according to World Bank estimates.

The French government is already looking into new indicators and approaches for wealth. The current system of valuing wealth can provide the wrong incentives. The opportunity for well-being constitutes a positive perspective – GDP's success after the World War II reflected the political and societal decision to modernise the industrial fabric. The GDP was chosen to valorise this choice of

direction. Changing the GDP implies a more fundamental reflection on the unit value (money). Increasing attention needs to be given to the part of the economy made of informal non-priced exchanges.

The complexity of the world cannot be reduced to a single number. Today we have too many indicators and the challenge is to make something simple that is theoretically consistent, politically relevant and empirically measurable.

> *"Moving away from GDP represents a significant political challenge. For some industries and nations, the mirage of GDP growth is just fine and it is not in their interests to have a truer picture of social well-being and progress. But it is in ours."* [26]

To sum up, it is time to go beyond GDP and the financial crisis of 2007-2010 is a perfect moment to reconsider our "number one" index for policy making. This crisis has changed the way how people in the society think and for that we need a new indicator of progress. Our political system became too dependent on a value of one index, which never was intended to be used for that kind of purpose. As the President Barroso mentioned even the inventor of the GDP, Simon Kuznets a Russian-American economist, wrote in his very first report to the US Congress in 1934 that: "...the welfare of a nation [can] scarcely be inferred from a measure of national income...."[27] and almost 30 years later (1962) he added: "Distinctions must be kept in mind between quantity and quality of growth, between costs and returns, and between the short and long run. Goals for more growth should specify more growth of what and for what."[28]

4.6.Stiglitz-Sen-Fitoussi Commission[29]

In February 2008 the President of the French Republic Nicholas Sarkozy, unsatisfied with the present state of statistical information about the economy and the society, asked Joseph Stiglitz (President of the Commission), Amartya Sen (Advisor) and Jean Paul Fitoussi (Coordinator) to create a Commission, subsequently called "The Commission on the Measurement of Economic Performance and Social

[26] NATURE. Progressive Thinking, 2010
[27] KUZNETS, Simon. National Income, 1929-1932. 1934
[28] KUZNETS, Simon. How To Judge Quality. 1962
[29] STIGLITZ, Joseph E.; SEN, Amartya; FITOUSSI, Jean-Paul. Report by the Commission on the Measurement of Economic Performance and Social Progress. 2009

Progress". The commission comprised some of the world's great thinkers and researchers and included five Nobel laureates – besides Joseph Stiglitz and Amartya Sen there were participating Kenneth Arrow, James Heckman and Daniel Kahneman. The Commission's aim has been to identify the limits of GDP as an indicator of economic performance and social progress including the problems with its measurement; to consider what additional information might be required for the production of more relevant indicators of social progress; to assess the feasibility of alternative measurement tools, and to discuss how to present the statistical information in an appropriate way.

4.6.1. Recommendations

The report distinguishes between an assessment of current well-being and an assessment of sustainability, whether this can last over time. Current well-being has to do with both economic resources, such as income, and with non-economic aspects of peoples' life (what they do and what they can do, how they feel, and the natural environment they live in). Whether these levels of well-being can be sustained over time depends on whether stocks of capital that matter for our lives (natural, physical, human, social) are passed on to future generations.

> *National income statistics such as GDP were originally intended as a measure of market economic activity, including the public sector. But they have increasingly been thought of as measures of societal well-being, which they are not. Of course, good statisticians have warned against this error. Much economic activity occurs within the home – and this can contribute to individual well-being as much as, or more than, market production.*
>
> *Joseph Stiglitz, Towards a better measure of well-being, Financial Times*[30]

1. When evaluating material well-being, look at income and consumption.
2. Emphasise the household perspective rather than production.
3. Consider income and consumption jointly with wealth.
4. Give more prominence to the distribution of income, consumption and wealth.
5. Broaden income measures to non-market activities.
6. Quality of life depends on people's objective conditions and capabilities. Steps should be taken to improve measures of people's health, education, personal activities and environmental conditions. In particular, substantial effort should be devoted to developing

[30] STIGLITZ, Joseph. Towards a better measure of well-being. 2009

and implementing robust, reliable measures of social connections, political voice, and insecurity that can be shown to predict life satisfaction.

7. Quality-of-life indicators in all the dimensions covered should assess inequalities in a comprehensive way.
8. Surveys should be designed to assess the links between various quality-of-life domains for each person, and this information should be used when designing policies in various fields.
9. Statistical offices should provide the information needed to aggregate across quality-of-life dimensions, allowing the construction of different indexes.
10. Measures of both objective and subjective well-being provide key information about people's quality of life. Statistical offices should incorporate questions to capture people's life evaluations, hedonic experiences and priorities in their own survey.
11. Sustainability assessment requires a well-identified dashboard of indicators. The distinctive feature of the components of this dashboard should be that they are interpretable as variations of some underlying "stocks". A monetary index of sustainability has its place in such a dashboard but, under the current state of the art, it should remain essentially focused on economic aspects of sustainability.
12. The environmental aspects of sustainability deserve a separate follow-up based on a well-chosen set of physical indicators. In particular there is a need for a clear indicator of our proximity to dangerous levels of environmental damage.

5. Alternative indicators – a possible way forward

This chapter highlights the most interesting alternative indicators more or less being used in the world of today or sets of ideas to promote the going beyond GDP, to open minds and last but not least to provoke a debate about the measure for the future.

The alternatives are divided into groups according to approach to the "old" GDP:

1. indicators modifying GDP;
2. indicators using GDP;
3. indicators not using GDP at all.

For basic illustration of differences in performance of selected countries in multiple fields of interest described by selected alternative indicators see a comparison table of selected indicators across selected countries in Table 1 - Gross domestic product (2007) and other indicators in the appendix.

5.1. Modifications of GDP – "Corrections" of GDP

5.1.1. Net Economic Welfare (NEW)[31]

The NEW (also known as MEW – Measure of Economic Welfare) is an aggregate index created to compensate some of the limitations of standard GDP – the concept of a broader measure of economic welfare than income per head.

Some of the economic activities does not go through the market and/or are not being recognised on the market implying they are not included into standard GDP as we know it. Those activities include for example services provided off the official market like gardening on your own property (self-gardening, or do it yourself gardening) and cooking at home; illegal production such as production and distribution of illegal drugs, prostitution and undeclared incomes and other things which are hard enough to be valued. We can divide those into following four categories:

1) The value of products made and services provided in grey economy which is not included into GDP simply because individuals involved do not report their revenues to an authority and those transactions are untraceable.
2) The value of products made by and services provided to ourselves, our family and/or friends as it does not enter the market and it cannot be captured by standard GDP.
3) Also a free time for rest and relaxation is a part of a life of a man as we do not live only by products made and services provided. Increase of a leisure time, however, is not again captured by the standard GDP.
4) Finally, an increase of quality of products made and services provided, because change in price does not always necessarily reflects change in quality – especially in a long term. For instance a personal computers or even pocket calculators – their price fall but their quality in terms of complexity and speed of computation increase. This means that we can buy more powerful computer for less money (generating less GDP) than few years ago.

To get the NEW value we simply add economic activities mentioned above and subtract the negative externalities reducing the quality of our everyday life. This NEW index is a flow variable and it can be interpreted as an increase in welfare (because the welfare itself is a stock variable). Re-calculation of GDP into NEW reveals smoother and slower changes – i.e. NEW index appears to be less volatile.

[31] BRČÁK, Josef; SEKERKA, Bohuslav. Makroekonomie. 2010

However, it has to overcome some difficulties, especially the need of a guess for an unknown data of performance in the grey economy.

5.1.2. Genuine Progress Indicator (GPI)[32]

The GPI was created in 1995 by a US public policy think tank (named Redefining Progress) as an alternative to the GDP. It enables policymakers at the national, state, regional, or local level to measure how well their citizens are doing both economically and socially.

The GPI starts with the same personal consumption data that the GDP is based on, but then makes some crucial distinctions. It adjusts for factors such as income distribution, adds factors such as the value of household and volunteer work, and subtracts factors such as the costs of crime and pollution. Because the GDP and the GPI are both measured in monetary terms, they can be compared on the same scale.

Measurements that make up the GPI include:

1) Income Distribution

   Both economic theory and common sense tell us that the poor benefit more from a given increase in their income than do the rich. Accordingly, the GPI rises when the poor receive a larger percentage of national income, and falls when their share decreases.

2) Housework, Volunteering, and Higher Education

   Much of the most important work in society is done in household and community settings: childcare, home repairs, volunteer work, and so on. The GDP ignores these contributions because no money changes hands. The GPI includes the value of this work figured at the approximate cost of hiring someone to do it. The GPI also takes into account the non-market benefits associated with a more educated population.

3) Crime

   Crime imposes large economic costs on individuals and society in the form of legal fees, medical expenses, damage to property, and the like. The GDP treats such

[32] Redefining Progress - Genuine Progress Indicator - http://www.rprogress.org/sustainability_indicators/genuine_progress_indicator.htm

expenses as additions to well-being. By contrast, the GPI subtracts the costs arising from crime.

4) Resource Depletion

   If today's economic activity depletes the physical resource base available for tomorrow, then it is not creating well-being; rather, it is borrowing it from future generations. The GDP counts such borrowing as current income. The GPI, by contrast, counts the depletion or degradation of wetlands, forests, farmland, and non-renewable minerals (including oil) as a current cost.

5) Pollution

   The GDP often counts pollution as a double gain: Once when it is created, and then again when it is cleaned up. By contrast, the GPI subtracts the costs of air and water pollution as measured by actual damage to human health and the environment.

6) Long-Term Environmental Damage

   Climate change, ozone depletion, and nuclear waste management are long-term costs arising from the use of fossil fuels, chlorofluorocarbons, and atomic energy, respectively. These costs are unaccounted for in ordinary economic indicators. The GPI treats as costs the consumption of certain forms of energy and of ozone-depleting chemicals. It also assigns a cost to carbon emissions to account for the catastrophic economic, environmental, and social effects of global warming.

7) Changes in Leisure Time

   As a nation becomes wealthier, people should have more latitude to choose between work and free time for family or other activities. In recent years, however, the opposite has occurred. The GDP ignores this loss of free time, but the GPI treats leisure as something of value. When leisure time increases, the GPI goes up; when people have less of it, the GPI goes down.

8) Defensive Expenditures

   The GDP counts as additions to well-being the money people spend to prevent erosion in their quality of life or to compensate for misfortunes of various kinds. Examples are the medical and repair bills from automobile accidents, commuting costs, and household expenditures on pollution control devices such as water filters. The GPI counts such "defensive" expenditures as costs rather than as benefits.

9) Lifespan of Consumer Durables & Public Infrastructure

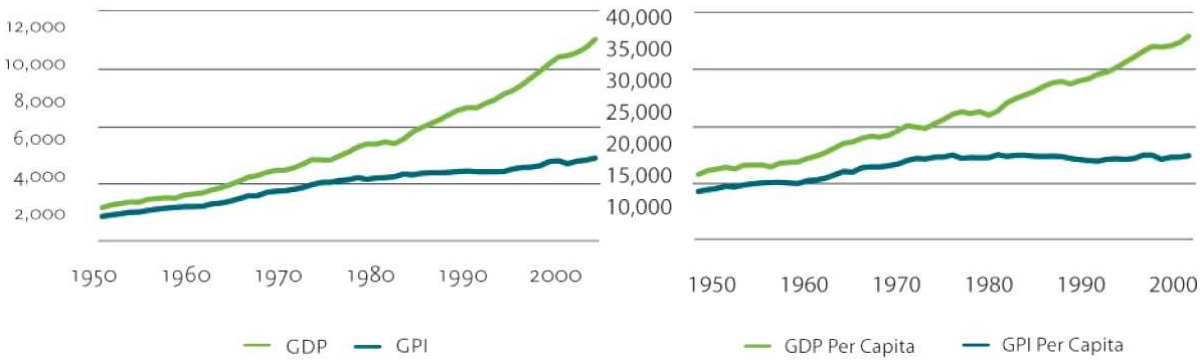
   The GDP confuses the value provided by major consumer purchases (e.g., home appliances) with the amount consumers spend to buy them. This hides the loss in

well-being that results when products wear out quickly. The GPI treats the money spent on capital items as a cost, and the value of the service they provide year after year as a benefit. This applies both to private capital items and to public infrastructure, such as highways.

10) Dependence on Foreign Assets

If a nation allows its capital stock to decline, or if it finances consumption out of borrowed capital, it is living beyond its means. The GPI counts net additions to the capital stock as contributions to well-being, and treats money borrowed from abroad as reductions. If the borrowed money is used for investment, the negative effects are cancelled out. But if the borrowed money is used to finance consumption, the GPI declines.

Figure 2 - GPI and GDP (and per capita) comparison in the USA[33]



The figure on the left above compares real GDP to GPI in the USA in 1950 to 2004 in 2000 US Dollars (the scale is in milliards, i.e. 10^9). The right one compares real GDP per capita to GPI per capita in 1950 to 2004 in 2000 US Dollars. Despite steady growth in GDP, the US economy, measured by GPI, has actually stagnated since the late 1970s as income inequality, environmental degradation, and the US's failing international position take their toll on real economic progress.

[33] TALBERTH, Dr. John; COBB Clifford; SLATTERY Noah. The Genuine Progress Indicator 2006. 2007

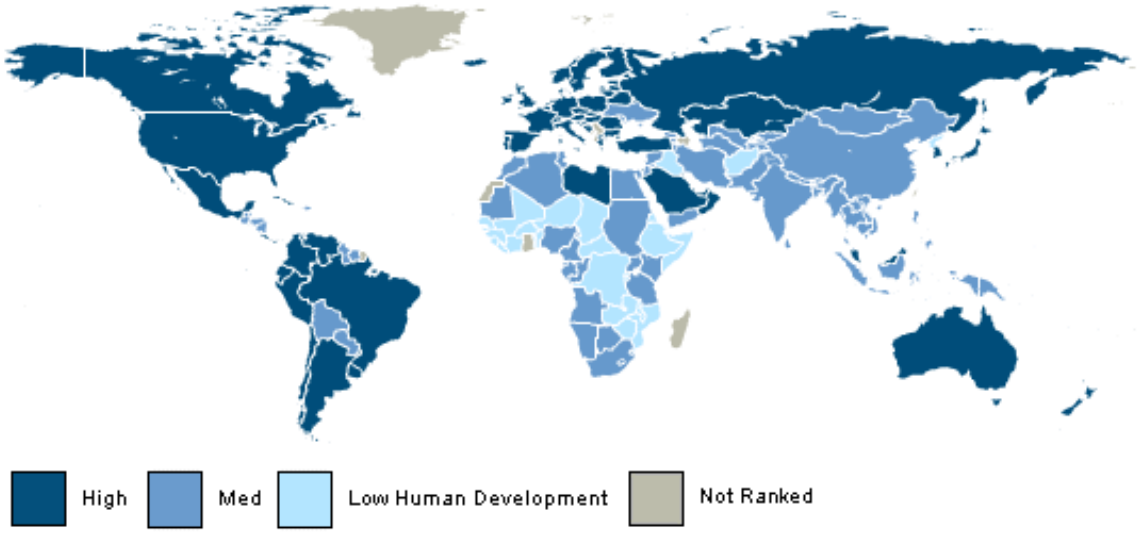
5.2. Composite indices including GDP

5.2.1. Human Development Index (HDI)[34]

The HDI is one of the most often used alternative indicators looking beyond GDP to a broader definition of wellbeing. Introduced in 1990 in the Human Development Report (HDR) by the United Nations Development Programme, it is a summary composite index that measures a country's average achievements in three basic aspects of human development: health, knowledge, and a decent standard of living. Health is measured by life expectancy at birth; knowledge is measured by a combination of the adult literacy rate and the combined primary, secondary, and tertiary gross enrolment ratio; and standard of living by GDP per capita (PPP USD).

The breakthrough for the HDI was the creation of a single statistic which was to serve as a frame of reference for both social and economic development. The HDI sets a minimum and a maximum for each dimension, called goalposts, and then shows where each country stands in relation to these goalposts, expressed as a value between 0 and 1.[35]

Figure 3 - HDI world map (2007)[36]

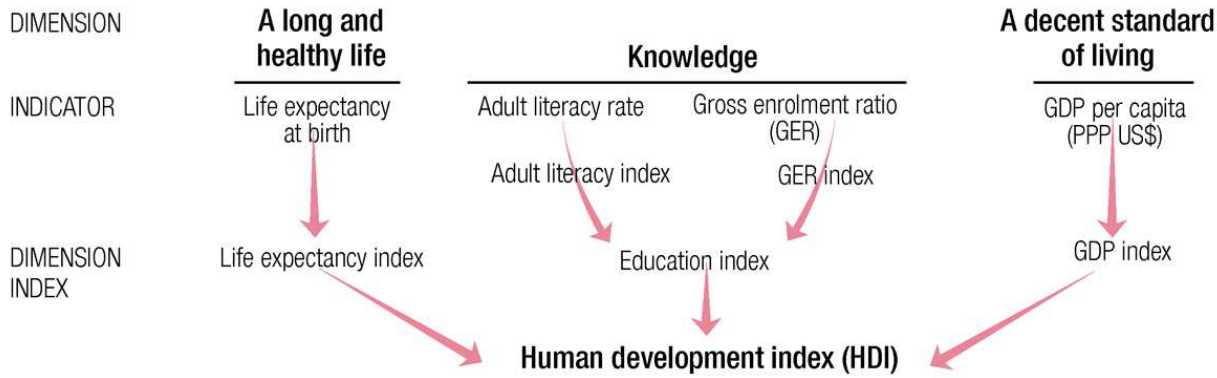


[34] HDR – Statistics - http://hdr.undp.org/en/statistics/indices/hdi/
[35] HDR – Human Development - http://hdr.undp.org/en/humandev/hdi/
[36] HDR – Statistics - http://hdr.undp.org/en/statistics/data/hd_map/

5.2.1.1. Construction of the HDI[37]

Construction of the HDI in greater detail: The educational component of the HDI is comprised of adult literacy rates and the combined gross enrolment ratio for primary, secondary and tertiary schooling, weighted to give adult literacy more significance in the statistic (two-thirds and one-third weight respectively). Since the minimum adult literacy rate is 0 % and the maximum is 100 %, the literacy component of knowledge for a country where the literacy rate is 75 % would be 0,75; the statistic for combined gross enrolment is calculated in an analogous manner. The life expectancy component of the HDI is calculated using a minimum value for life expectancy of 25 years and maximum value of 85 years, so the longevity component for a country where life expectancy is 55 years would be 0,5. For the wealth component, the goalpost for minimum income is $100 (PPP) and the maximum is $40 000 (PPP). The HDI uses the logarithm of income[38], to reflect the diminishing importance of income with increasing GDP. The scores for the three HDI components are then averaged in an overall index.

Figure 4 - Construction of the HDI[39]



5.2.1.2. Assessment through HDI – pros and cons[40,41]

Governments often look at the HDI as an instrument for assessing their performance against that of neighbouring countries. Competition for human development is a healthy rivalry – healthier than competition on GDP. However, there has been something of a tendency for governments to neglect

[37] HDR – Statistics - http://hdr.undp.org/en/statistics/indices/hdi/
[38] Since 1999 (until then it was calculated in an analoguous manner as the life expectancy component)
[39] HUMAN DEVELOPMENT REPORT OFFICE. Human Development Report 2007/2008 – Technical Note
[40] HUMAN DEVELOPMENT REPORT OFFICE. Human Development Report 2006 – The state of human development
[41] HDR – Statistics - http://hdr.undp.org/en/statistics/indices/hdi/

more pressing questions, including the underlying reasons for large discrepancies between the national position in global income tables and in HDI rank. In some cases, as in Southern Africa, these discrepancies can be traced to specific problems (such as HIV/AIDS). In many others they can be traced to domestic policy failures in providing opportunities for health and education.

However, the HDI is a less effective measure of cross-country performance at the top end of the league table. Near universal literacy and educational enrolment, allied to upper limits on life expectancy, tend to equalize scores among countries. But even here the index highlights some discrepancies between income and overall HDI rank. For example, the United States, whose citizens are on average the second richest in the world after Luxembourg, stands six places lower in its HDI rank than its income rank. One reason is that average life expectancy is almost three years less than in Sweden – a country with an average income that is one-fourth lower. Within the high human development group Chile and Cuba enjoy HDI ranks far above their income ranks.

Furthermore, it is difficult to use the HDI to monitor changes in human development in the short-term because two of its components, namely life expectancy and adult literacy change slowly. To address this limitation, components that are more sensitive to short-term changes could be added to the national HDI. For example, the rate of employment, the percentage of population with access to health services, or the daily caloric intake as a percentage of recommended intake could be used in place of the traditional indicators of the HDI.

Thus, the usefulness and versatility of the HDI as an analytical tool for human development at the national and sub-national levels would be enhanced if countries choose components that reflect their priorities and problems and are sensitive to their development levels, rather than rigidly using the three components presented in the HDI of the global HDRs.

Anyway, when adjusting the HDI to reflect additional concerns, a commitment to data integrity and rigorous attention to statistical protocol should always be a concern of paramount importance.

To sum up, current design of HDI index is to capture long term progress in human development rather than short-term changes.

5.2.1.3. Comparing HDI and per capita income (GDP per capita)[42]

National wealth has the potential to expand people's choices. However, it may not. The manner in which countries spend their wealth, not the wealth itself, is decisive. Moreover, an excessive obsession with the creation of material wealth can obscure the ultimate objective of enriching human lives, distracting from the ultimate goal of enriching people's lives.

In many instances, countries with higher average incomes have higher average life expectancies, lower rates of infant and child mortality and higher literacy rates, and consequently a higher human development index (HDI). But these associations are far from perfect. In inter-country comparisons, income variations tend to explain not much more than half the variation in life expectancy, or in infant and child mortality. And they explain an even smaller part of the differences in adult literacy rates.

Although there is a definite correlation between material wealth and human well-being, it breaks down in far too many societies. Many countries have high GDP per capita, but low human development indicators and vice versa. While some countries at similar levels of GDP per capita have vastly different levels of human development.

Given the imperfect nature of wealth as gauge of human development, the HDI offers a powerful alternative to GDP for measuring the relative socio-economic progress at national and sub-national levels. Comparing HDI and per capita income ranks of countries, regions or ethnic groups within countries highlights the relationship between their material wealth on the one hand and their human development on the other. A negative gap implies the potential of redirecting resources to Human Development.

5.2.1.4. GDP per capita versus HDI (from income to human development)

The idea in the beginning is that the GDP per capita cannot be used to measure human development as it only reflects average national income and it tells nothing of how that income is distributed or how that income is spent – whether on universal health, education or military expenditure. Comparing rankings on GDP per capita and the HDI can reveal much about the results of national policy choices. For example, a country with a very high GDP per capita such as Oman, which has a

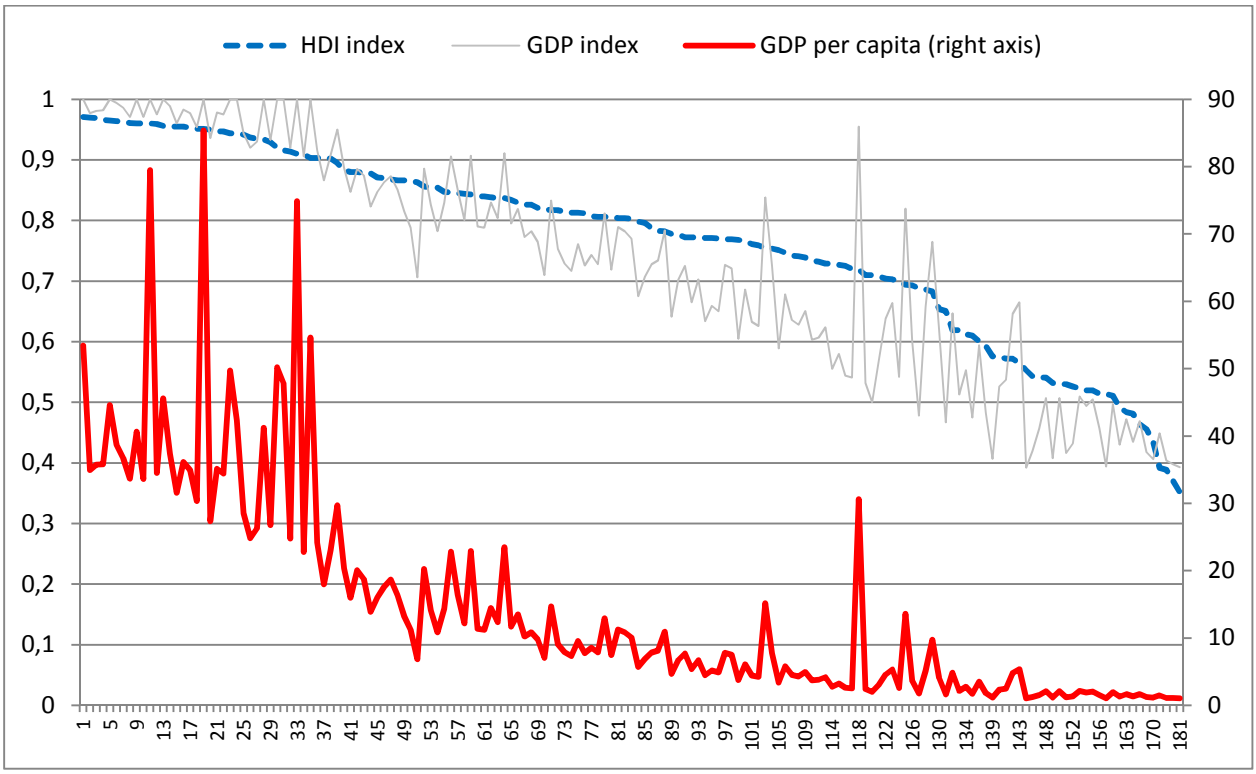
[42] HDR – Statistics - http://hdr.undp.org/en/statistics/indices/hdi/

relatively low level of educational attainment, can have a lower HDI rank than, say, Uruguay, who has roughly 50% of the GDP per capita of Oman[43]

This phenomena can be observed in the data when both 1) comparing countries with almost equal levels of HDI index value and focusing on the variance of income – i.e. GDP per capita differences and 2) (as mentioned above) the other way around comparing countries with equal levels of GDP per capita while focusing on their variance in HDI index value and most notably differences in every individual component of the HDI.

Figure below visualize correlation of HDI with level of income. Individual countries are represented by their HDI rank on X-axis (see appendix for their listing and raw data). The bottom line of this figure is a message that higher income represented by GDP per capita does not automatically make a country more human-developed. So to say, the HDI is able to uncover the progress having negative (or less positive than others) effect on human lives.

Figure 5 - HDI level vs. income (based on 2007 data)



[43] HDR – Statistics - http://hdr.undp.org/en/statistics/indices/hdi/question,71,en.html

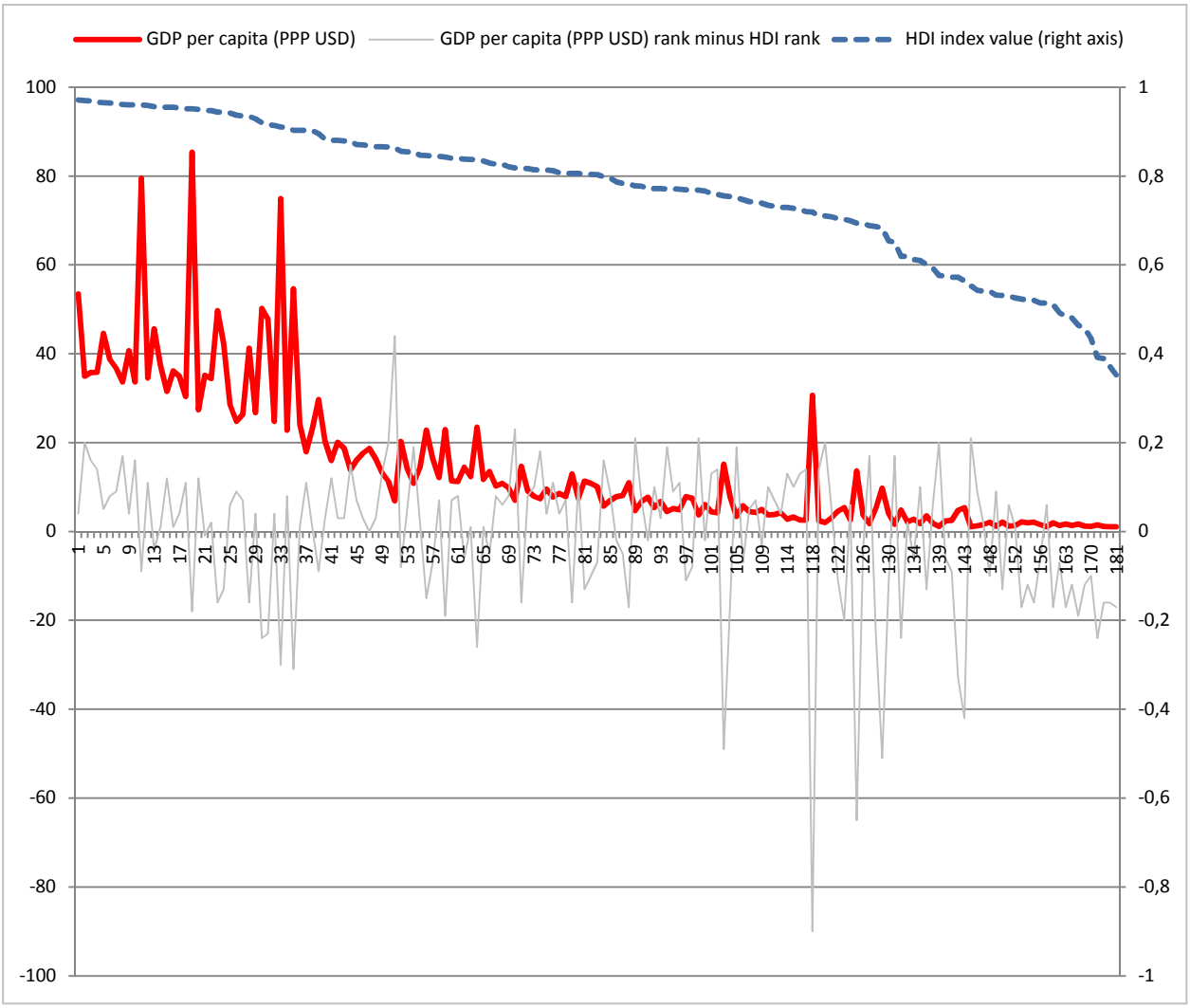
The raw data from Human development reports [44] are to be found in the appendix providing complete dataset with all countries included.

5.2.1.4.1. Equal HDI – focus on GDP per capita differences

Visualising data with countries sorted by their HDI rank into a chart (see Figure 6 below) reveals "fluctuations" of income (GDP per capita) while having steadily decreasing HDI index value (right Y-axis) across countries (again represented by their HDI rank on X-axis). Interpretation of these fluctuations is very simple – and has already been mentioned above – a country with higher income level represented by GDP per capita does not necessarily imply greater level of human development. This fact is being summarized by the thin curve oscillating around zero on Y-axis which represents the "lag" of country's HDI rank behind its GDP per capita rank. To sum up, when this curve reaches a positive number it indicates a country oriented rather to human development (i.e. long term progress) and a negative values for a country where the higher level of GDP per capita does not make the country more human-developed in terms of HDI (which can be seen as preference of an income driven short term progress).

[44] HDR – Statistics - http://hdr.undp.org/en/statistics/data/

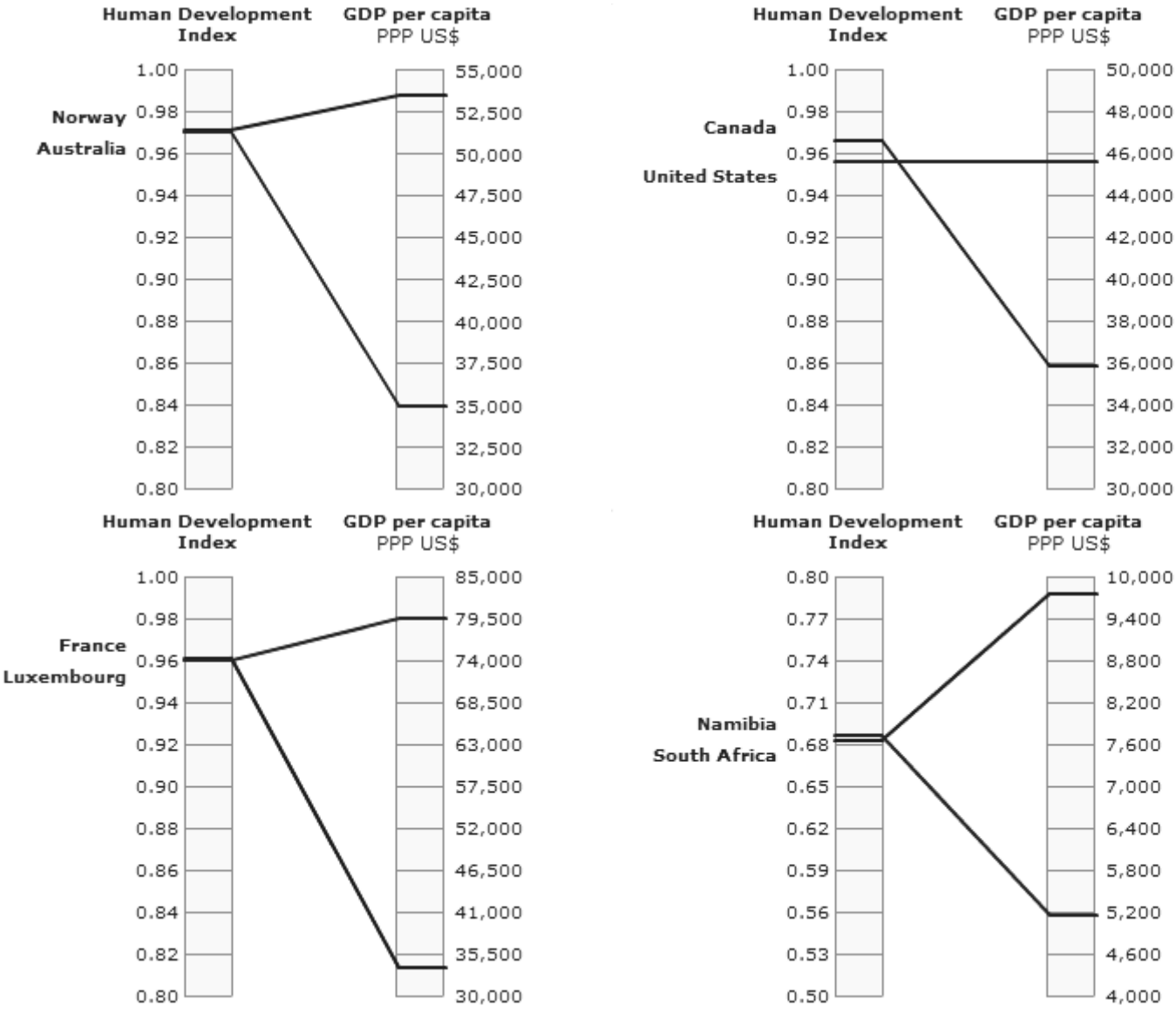
Figure 6 - HDI vs. income



Direct comparison of two countries with the same HDI index value further supports observation that the same level of human development can be achieved through different levels of GDP per capita and vice versa lower income value (in terms of GDP p.c.) does not necessarily means lower human development. Four most interesting observations of these direct comparisons are represented in charts below[45].

[45] Charts in Figure 7 were generated at http://hdr.undp.org/en/statistics/data/hdi_gdp/

Figure 7 - HDI head to head comparison



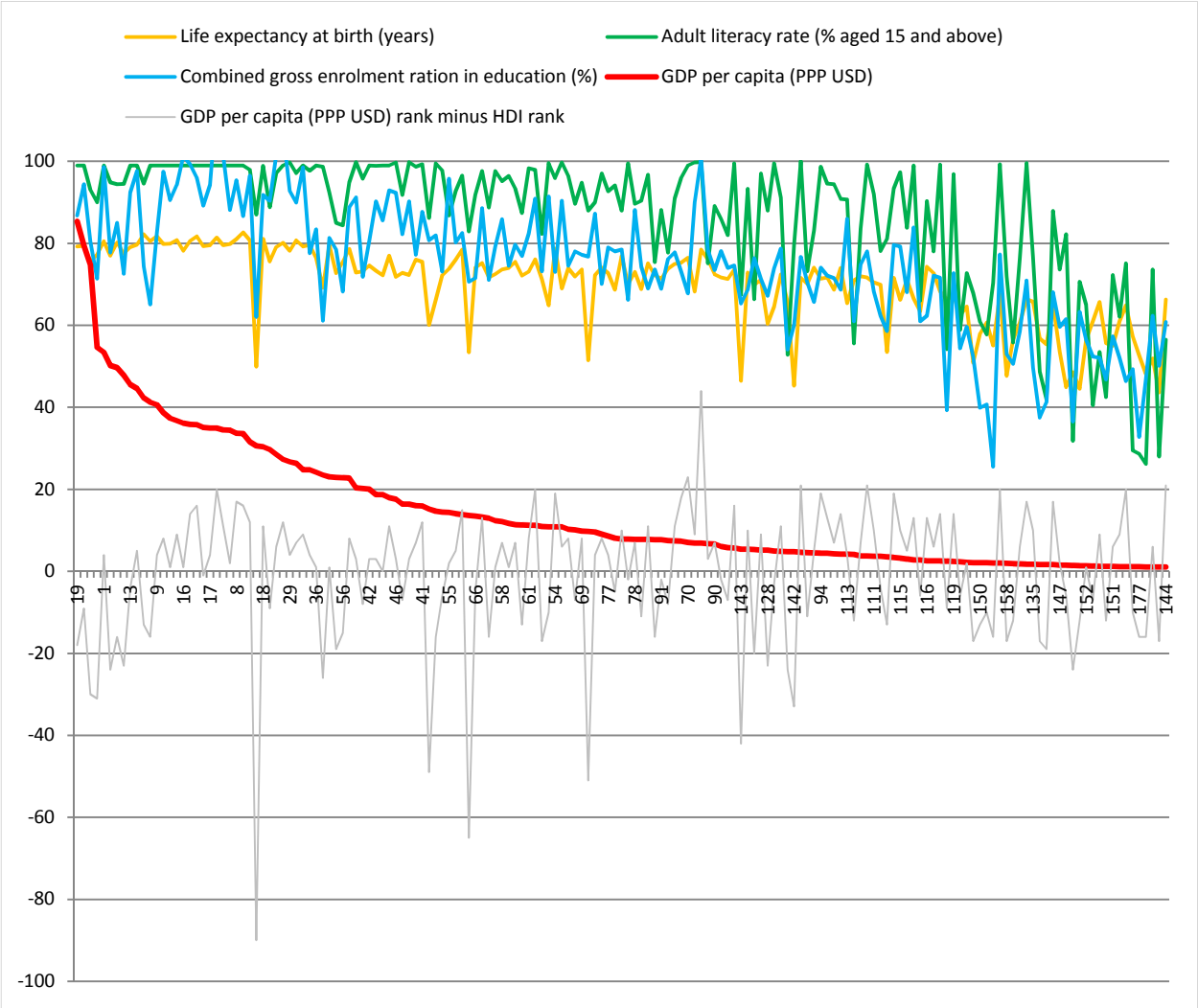
For raw data see "Table 2 - HDI compared to GDP per capita (sorted by HDI) - 2007 data" in the appendix.

5.2.1.4.2. Similar GDP per capita – focus on HDI differences

Re-sorting countries by their GDP per capita and visualising those data into a chart (see Figure 8 below) contrasts smooth decrease in GDP per capita with dramatic fluctuations of non-GDP based components of HDI. Those fluctuations represent differences in individual components of HDI (life expectancy, adult literacy and enrolment ration in education) between countries with similar or almost equal level of GDP per capita. In other words it reflects and identifies the kind of differences

or problems in human development among countries with comparable income level. And same as above in Figure 6, the thin curve oscillating around zero on Y-axis captures the "lag" of country's HDI rank behind its GDP per capita rank.

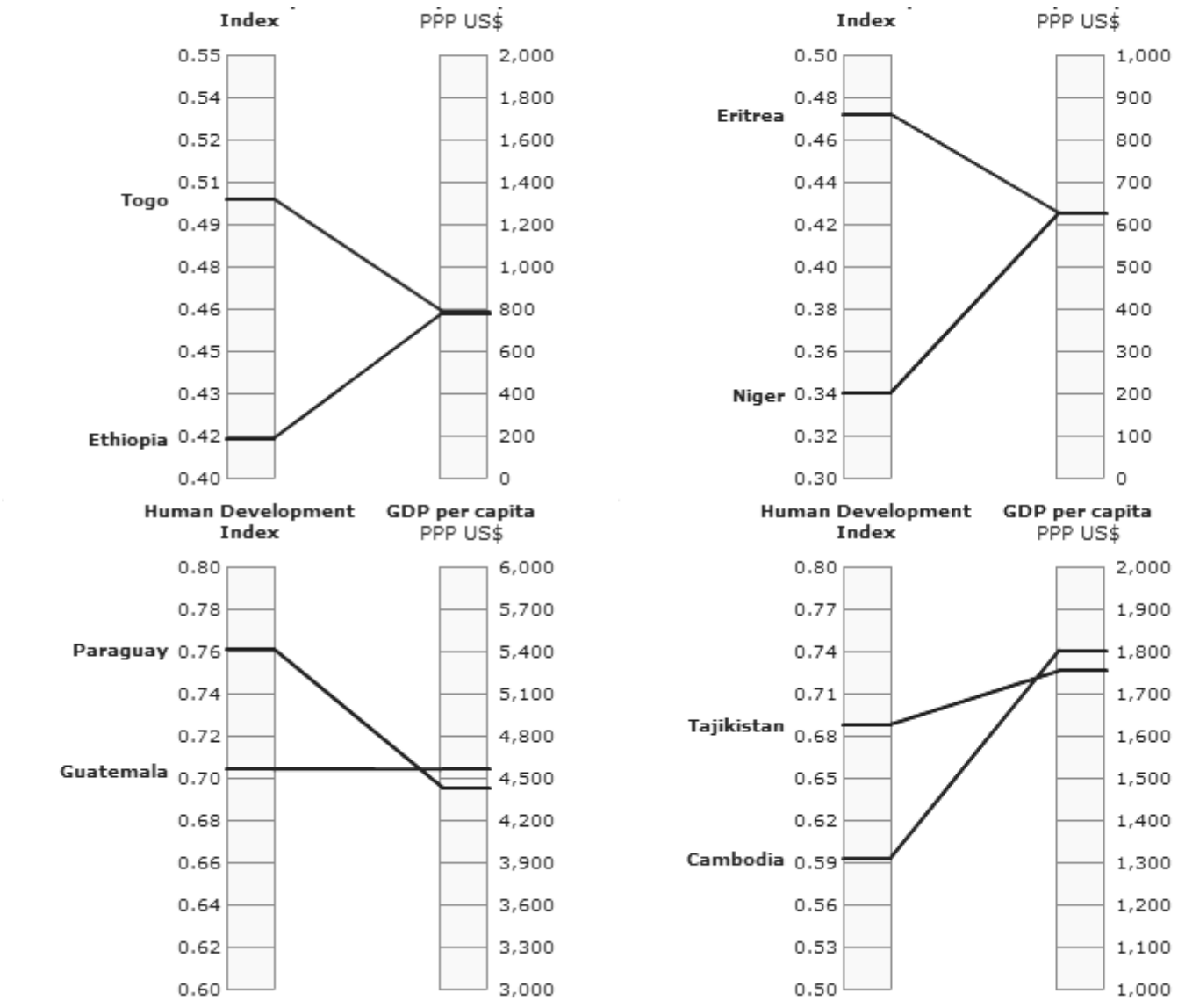
Figure 8 – GDP vs. human development



Following set of four pairs of countries reveals how some countries do better than others in turning income into education and health opportunities and therefore into higher levels of human development – i.e. how country's HDI value relates to its GDP per capita value and contrasts this to an equivalently wealthy nation (see Figure 9 below[46]).

[46] Charts in Figure 9 were generated at http://hdr.undp.org/en/statistics/data/hdi_gdp/

Figure 9 - GDP vs. human development



For raw data see "Table 3 – GDP per capita compared to HDI (sorted by GDP per capita) - 2007 data" in the appendix.

5.2.1.5. Other composite indices developed by the Human Development Report

The HDI is not the sole alternative index developed by the Human Development Report (HDR) at United Nations. There are three other composite indices which are considered to be the core of the Human Development indices created by the HDR. However, they are not so widely used as the HDI and more important they do not represent "direct candidate" to go beyond GDP, yet they may

become one of a component in the “future GDP” if their value added exceeds their computation difficulties added.

First two indicators, the GDI and the GEM, were introduced in the Human Development Report 1995 to highlight the status of women. The third one, the HPI, was introduced two years after in attempt to bring together in a composite index the different features of deprivation in the quality of human life.[47]

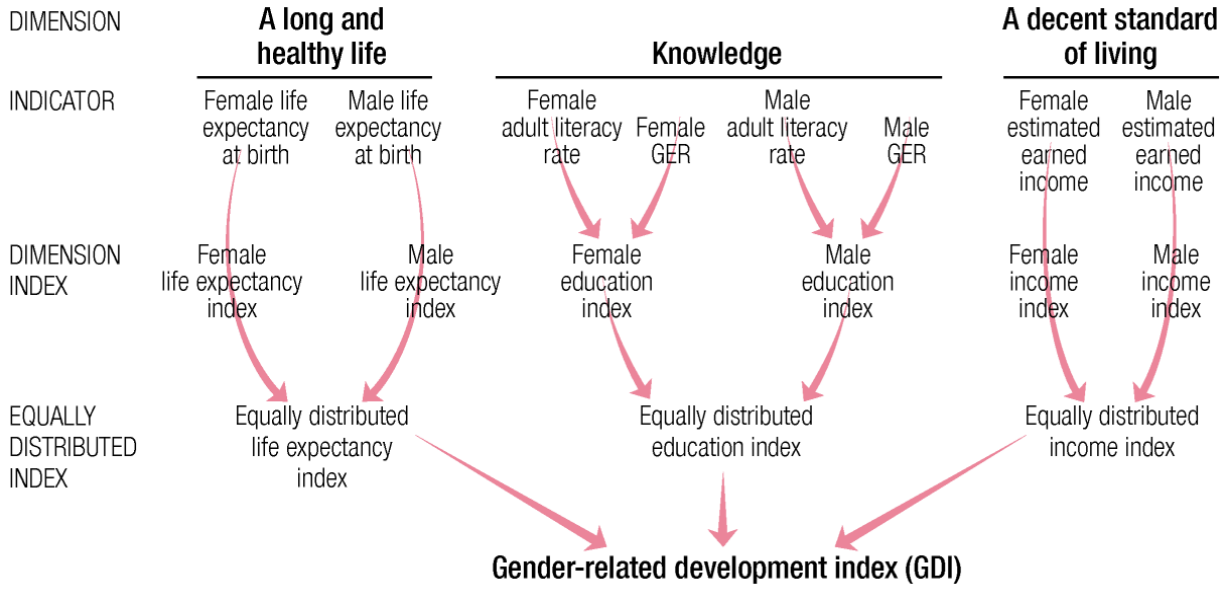
5.2.1.6. Gender-related Development Index (GDI)[48]

This index measures achievement in the same basic capabilities as the HDI does, but takes note of inequality in achievement between women and men. The methodology used imposes a penalty for inequality, such that the GDI falls when the achievement levels of both women and men in a country go down or when the disparity between their achievements increases. The greater the gender disparity in basic capabilities, the lower a country's GDI compared with its HDI. The GDI is simply the HDI discounted, or adjusted downwards, for gender inequality.

In other words the GDI is not a measure of gender inequality itself. It is just the HDI adjusted for gender inequalities in HDI’s basic components. To get a measure of gender inequality, one should refer to the difference between the HDI rank and the GDI rank presented in in the same table. Those differences tend to be small as a result of small differences captured by the three components of HDI. And that observation could lead to a misleading impression that gender gaps are irrelevant. However the GDI is not able to capture gender disparities relating to employment and quality of education.

[47] HDR – Statistics - http://hdr.undp.org/en/statistics/indices/hpi/
[48] HDR – Human Development - http://hdr.undp.org/en/humandev/hdi/

Figure 10 - Construction of the GDI[49]



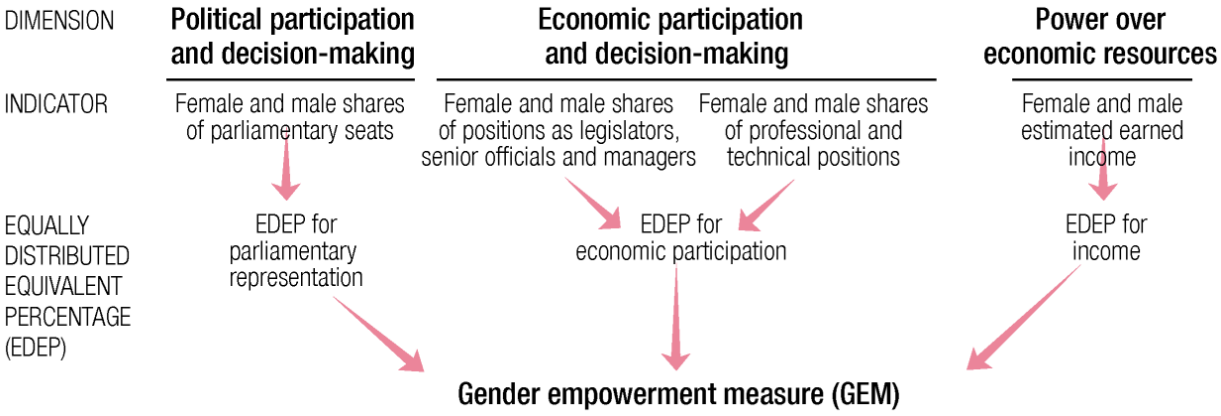
5.2.1.7. Gender Empowerment Measure (GEM)[50]

The Gender Empowerment Measure (GEM) is a measure of agency. It evaluates progress in advancing women's standing in political and economic forums. It examines the extent to which women and men are able to actively participate in economic and political life and take part in decision-making. While the GDI focuses on expansion of capabilities, the GEM is concerned with the use of those capabilities to take advantage of the opportunities of life. In short, the GEM measures gender equality in economic and political participation and decision making.

The GEM, as opposed to the GDI, measures political participation and decision making power, economic participation and command over resources. Its calculation mirrors that of the GDI. As a practical implication of the use of the estimated earned income used to measure economic participation a poor country cannot achieve a high value for the GEM and vice versa for rich countries.

[49] HUMAN DEVELOPMENT REPORT OFFICE. Human Development Report 2007/2008 – Technical Note
[50] HDR – Statistics - http://hdr.undp.org/en/statistics/indices/gdi_gem/

Figure 11 - Construction of the GEM[51]



5.2.1.8. Human Poverty Index (HPI)[52]

If human development is about enlarging choices, poverty means that opportunities and choices most basic to human development are denied. Thus a person is not free to lead a long, healthy, and creative life and is denied access to a decent standard of living, freedom, dignity, self-respect and the respect of others. From a human development perspective, poverty means more than the lack of what is necessary for material well-being.

For policy-makers, the poverty of choices and opportunities is often more relevant than the poverty of income. The poverty of choices focuses on the causes of poverty and leads directly to strategies of empowerment and other actions to enhance opportunities for everyone. Recognising the poverty of choices and opportunities implies that poverty must be addressed in all its dimensions, not income alone.

Rather than measure poverty by income, the HPI uses indicators of the most basic dimensions of deprivation: a short life, lack of basic education and lack of access to public and private resources. The HPI concentrates on the deprivation in the three essential elements of human life already reflected in the HDI: longevity, knowledge and a decent standard of living. The HPI is derived separately for developing countries (HPI-1) and a group of select high-income OECD countries (HPI-2) to better reflect socio-economic differences and also the widely different measures of deprivation in the two groups.

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[51] HUMAN DEVELOPMENT REPORT OFFICE. Human Development Report 2007/2008 – Technical Note
[52] HDR – Statistics - http://hdr.undp.org/en/statistics/indices/hpi/

i. The first deprivation relates to survival: the likeliness of death at a relatively early age and is represented by the probability of not surviving to ages 40 and 60 respectively for the HPI-1 and HPI-2.

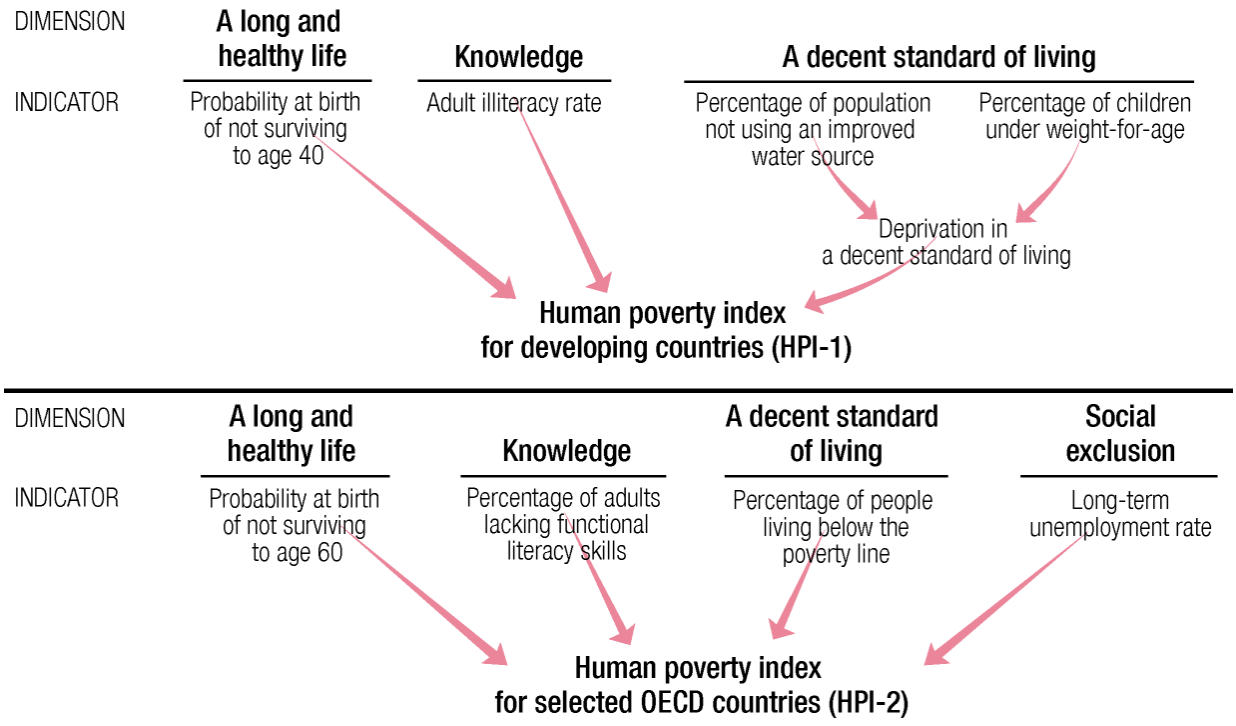
ii. The second dimension relates to knowledge: being excluded from the world of reading and communication and is measured by the percentage of adults who are illiterate.

iii. The third aspect relates to a decent standard of living, in particular, overall economic provisioning.

For the HPI-1, it is measured by the un-weighted average of the percentage of the population without access to safe water and the percentage of underweight children for their age. For the HPI-2, the third dimension is measured by the percentage of the population below the income poverty line (50% of median household disposable income).

In addition to the three indicators mentioned above, the HPI-2 also includes social exclusion, which is the fourth dimension of the HPI-2. It is represented by the rate of long term unemployment.

Figure 12 - Construction of the HPI[53]



[53] HUMAN DEVELOPMENT REPORT OFFICE. Human Development Report 2007/2008 – Technical Note

5.3.Indices that do not use GDP – "GDP free"

5.3.1. Subjective Well-Being (SWB)[54,55]

Subjective well-being evaluates human well-being based on self-reporting by individuals and groups attempting to measure satisfaction with quality of life or people's moods and emotions in following components:

- Pleasant affect
    - Joy
    - Elation
    - Contentment
    - Pride
    - Affection
    - Happiness
    - Ecstasy
- Unpleasant affect
    - Guilt and shame
    - Sadness
    - Anxiety and worry
    - Anger
    - Stress
    - Depression
    - Envy
- Life satisfaction
    - Desire to change life
    - Satisfaction with current life
    - Satisfaction with past
    - Satisfaction with future

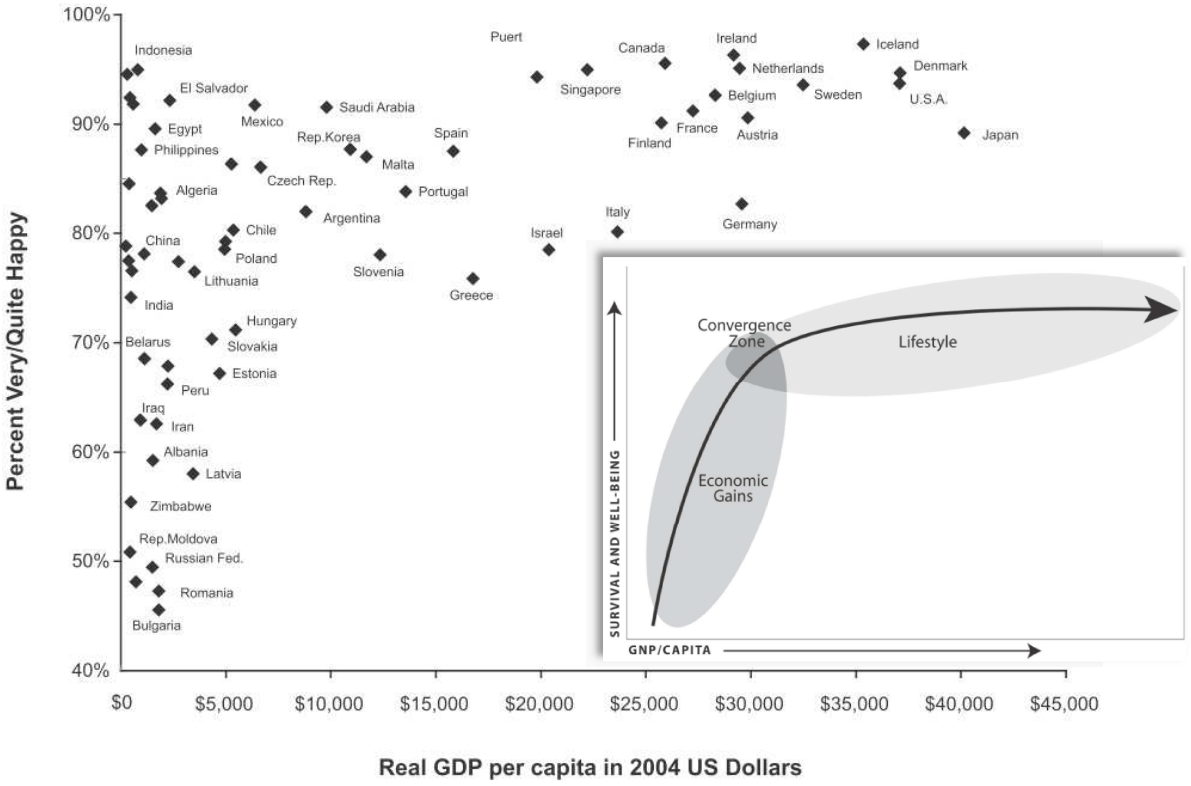
[54] COSTANZA Robert; HART Maureen; POSNER Stephen; TALBERTH John. Beyond GDP: The Need for New Measures of Progress, 2009

[55] DEINER, Ed; SUH, Eunkook M.; LUCAS, Richard E.; SMITH Heidi L.: Subjective Weil-Being: Three Decades of Progress. 1999

    - Significant others' views of one's life
- Domain satisfactions
    - Work
    - Family
    - Leisure
    - Health
    - Finances
    - Self
    - One's group

The intent is to measure the extent to which human needs are actually being met. Because these measures are based on the judgments of the survey respondents rather than on more easily quantifiable inputs of money and material goods, there are concerns that these “subjective” measures are not factually based and therefore less valid than “objective” measures like GDP. However, objective measures such as life expectancy, rates of disease, and GDP are only proxies for well-being that have been identified through the subjective judgment of decision-makers. There is also a concern that there are cultural differences that make it difficult to compare the results across different ethnic, gender, age, religion, and other cultural boundaries. As Figure 13 below demonstrate, comparisons of reported well-being and per capita GDP have shown that beyond a certain income level, happiness does not increase significantly with additional income. The sub-figure within (in the bottom right corner) illustrates the trend in which economic gains beyond the threshold no longer correlate with increases in well-being.

Figure 13 - Happiness vs. GDP/capita



5.3.2. Bhutan's Gross National Happiness (GNH)[56]

5.3.2.1. The story behind

In the beginning of 1970s the 4th King of Bhutan, His Majesty Jigme Singye Wangchuck, introduced the idea of the Gross National Happiness based on Buddhist values and claimed the happiness of the people to be the guiding goal of development superior to the GDP. The fact that he said that the GDP needed to be channelled towards happiness in 1970s and 1980s was a revolutionary concept that initially invited much scepticism from economists and other development experts. The GNH was a nice catchphrase, many of them said, but on what index do you measure happiness? Today, the success of his Gross National Happiness theory is attracting attention, and provoking people outside of Bhutan all around the world to consider the possibility of moving to happiness as a collective goal. Anyway back to the history – In the reign of the 4th King, the actual road map for good development in terms of laws and policies consistent with GNH were developed. He believed that happiness is an

[56] GNH Methodology - http://www.grossnationalhappiness.com/gnhIndex/intruductionGNH.aspx

indicator of good development and good society. He also believed in the legitimacy of public deliberation, public discussion, and public opinion in defining any goal, including GNH, through democracy and enlightened citizenship.

In November 2008 the 5th King of Bhutan has fully adopted the GNH index, fulfilling the vision of GNH introduced by his predecessor.

The purpose of the GNH index is to reflect GNH values, set benchmarks, and track policies and performances of the country.

"GNH encourages individuals to see all things as interdependent with all other things. In order to achieve collective happiness, the principle of interdependence needs to be taken on by everyone. Members of a GNH society would cultivate a third eye, which can elevate our vision beyond individual self-interest to address the happiness of all, as a collective goal. The third eye metaphorically represents our potential to see all things as interdependent across time and space. Equity is central to GNH. The perception of happiness that does not take into account the needs of others happiness is irresponsible and egocentric, and the pursuit of such happiness is likely to be unethical. Happiness blossoms through enhanced relationships, arising unbidden when relationships improve. In this sense, the whole of development is a progress in relationships, not of individuals."
– Gross National Happiness, The Centre for Bhutan Studies

5.3.2.2. GNH index construction

The Gross National Happiness index is generated to reflect the happiness and general well-being of the Bhutanese population more accurately and profoundly than a monetary measure from the point of Bhutanese view. The measure both informs Bhutanese people and the wider world about the current levels of human fulfilment in Bhutan and how these vary across districts and across time, and also informs government policy.

The GNH indicators have been designed to include nine core dimensions that are regarded as components of happiness and well-being in Bhutan, and are constructed of indicators which are robust and informative with respect to each of the dimensions. The nine dimensions were selected on normative grounds, and are equally weighted, because each dimension is considered to be relatively equal in terms of equal intrinsic importance as a component of gross national happiness. Within each dimension, several indicators were selected that seemed likely to remain informative across time, had high response rates, and were relatively uncorrelated. The nine dimensions are:

- Psychological Well-being

- Time Use
- Community Vitality
- Culture
- Health
- Education
- Environmental Diversity
- Living Standard
- Governance

5.3.2.2.1. Psychological well-being

This dimension includes satisfaction with all elements of life, life enjoyment and subjective well-being.

The psychological well-being index covers three areas: General psychological distress indicators, Emotional balance indicators, and Spirituality indicators.

5.3.2.2.2. Time use

This dimension analyse the nature of time spent within a 24-hour period, as well as activities longer periods of time. It especially acknowledges the non-work time for happiness such as sleeping, personal care, community participation, education and learning, religious activities, social and cultural activities, sports and leisure and travel which all enrich life and contribute to level of happiness.

5.3.2.2.3. Community vitality

This domain focuses on the strengths and weaknesses of relationships and interactions within communities. It examines the nature of trust, belongingness, vitality of caring relationships, safety in home and community, and giving and volunteering.

The community vitality indicators consist of: Family vitality indicator, Safety indicator, Reciprocity indicator, Trust indicator, Social support indicator, Socialization indicator, and Kinship density indicator.

5.3.2.2.4. Culture

Traditions and cultural diversity contributes to identity, values, and creativity. The domain of culture focuses on the diversity and strength of cultural traditions. It takes into account the nature and number of cultural facilities, language use patterns and diversity, and participation in community

festivities and traditional recreations. The indicators estimate core values, and perception of changes in values and traditions.

Indicators of cultural diversity and resilience consist of: Dialect use indicator, Traditional sports indicator, Community festival indicator, Artisan skill indicator, Value transmission indicator, and Basic precept indicator.

5.3.2.2.5. Health

These assess the health status of the population, the determinants of health and the health system. Health status indicators show information on self-rated health, disabilities, body mass index, and number of healthy days per month. Health indicators also cover the prevalence of knowledge about HIV transmission and breast feeding practices. Lastly, barrier to health services are assessed in terms of walking distance to the nearest health facility, which includes both western and indigenous systems.

Thus the health index consists of: Health status indicator, Health knowledge indicator, and Barrier to health indicator.

5.3.2.2.6. Education

Education contributes to the knowledge, values, creativity, skills, and civic sensibility of citizens. A domain such as education is not intended merely to measure the success of education in and of itself, but rather to assess the effectiveness of education in working towards the goal of collective well-being. The domain of education looks at a number of factors: participation, skills, among others. However, in the education index, a limited number of variables could be included.

The education index consists of: Education attainment indicator, Dzongkha [57]language indicator, and Folk and historical literacy indicator.

5.3.2.2.7. Ecological Diversity

This domain of ecological diversity and resilience is intended to describe the impact of domestic supply and demand on Bhutan's ecosystems. However, since most of the objective measurements of ecological diversity and resilience are surveyed by other agencies, GNH survey gathered information on perceptual data on ecology.

[57] Dzongka = national language of Bhutan

The ecological diversity and resilience indicators consist of: Ecological degradation indicator, Ecological knowledge indicator, and Afforestation indicator.

5.3.2.2.8. Living Standard

The domain of living standards covers the basic economic status of the people. These indicators assess the levels of income at the individual and household levels, sense of financial security, room ratio, food security, house ownership. These indicators were also constructed for economic hardships as shown by inability to repairs houses, inability to contribute to community festivities, and purchase of second hand clothes.

The living standard indicators consist of: Income indicator, Housing indicator, Food security indicator, and Hardship indicator.

5.3.2.2.9. Governance

This domain evaluates how people perceive various government functions in terms of their efficacy, honesty, and quality. The themes of indicators include human rights, leadership at various levels of government, performance of government in delivering services and controlling inequality and corruption, peoples trust in media, judiciary, and police.

Therefore, the indicators of good governance consist of: Government performance indicator, Freedom indicator, and Institutional trust indicator.

5.3.2.3. Ranking

Current data from 2009 showed that Bhutan ranked 8th in world-wide rankings in subjective well-being despite being in the second half of the countries observed in terms of GDP per capita (PPP) (116th out of 161 according to the CIA World Factbook 2009 ranking).[58] This provokes the idea that objective indicators may go up in spite of subjective well-being and/or happiness declining simultaneously.[59] And it also forms a question whether is the Bhutan's approach suitable for the rest of the world and if so, brings another question whether is it more convenient to use objective or subjective indicator as the Bhutanese one.

[58] BOŘUTA, Michael. Ekonomie a štěstí, 2009
[59] MLČOCH, Lubomír. Ekonomie štěstí: Proč více někdy není lépe. 2007 - p.147-163

5.3.3. Economic Degrowth for Sustainability and Equity (Degrowth)[60]

Economic Degrowth for Sustainability and Equity or simply Degrowth or De-growth in short is a movement based on anti-capitalist, anti-consumerist and environmentalist ideas. The Supporters reject the economic growth as an ultimate goal and often they even call for a controlled de-growth (negative growth) towards just and sustainable economy.

Degrowth is defined in more detail by the research unit "Recherche et Décroissance"[61]:

In general, degrowth is the state of that which "de-grows", i.e. reduces. More specifically, degrowth presents two aspects:

a) Slogan which calls into question the consensus for growth (including economic growth).
b) Concrete and voluntary process, a "voluntary simplicity", toward a just and ecologically sustainable society.

The participants in the Economic De-Growth For Ecological Sustainability And Social Equity Conference held in Paris on April 2008 made the following declaration: [62]

Economic growth (as indicated by increasing real GDP or GNP) represents an increase in production, consumption and investment in the pursuit of economic surplus, inevitably leading to increased use of materials, energy and land. Despite improvements in the ecological efficiency of the production and consumption of goods and services, global economic growth has resulted in increased extraction of natural resources and increased waste and emissions. Global economic growth has not succeeded in reducing poverty substantially, due to unequal exchange in trade and financial markets, which has increased inequality between countries. As the established principles of physics and ecology demonstrate, there is an eventual limit to the scale of global production and consumption and to the scale national economies can attain without imposing environmental and social costs on others elsewhere or future generations. The best available scientific evidence indicates that the global economy has grown beyond ecologically sustainable limits, as have many national economies, especially those of the wealthiest countries (primarily industrialised countries in the global North). There is also mounting evidence that global growth in production and consumption is socially

[60] R&D Research & Degrowth Recherche & Décroissance - http://www.degrowth.net/Economic-Degrowth-for
[61] Recherche et Décroissance = Research and Degrowth
[62] Declaration Degrowth-Paris 2008 - http://www.degrowth.eu/v1/index.php?id=56

unsustainable and uneconomic (in the sense that its costs outweigh its benefits). By using more than their legitimate share of global environmental resources, the wealthiest nations are effectively reducing the environmental space available to poorer nations, and imposing adverse environmental impacts on them. If we do not respond to this situation by bringing global economic activity into line with the capacity of our ecosystems, and redistributing wealth and income globally so that they meet our societal needs, the result will be a process of involuntary and uncontrolled economic decline or collapse, with potentially serious social impacts, especially for the most disadvantaged.

Degrowth propose a concept of "right-sizing" the global and national economies. Generally it means reducing the global ecological footprint to a sustainable level. In countries where the per capita footprint is greater than the sustainable global level implies a reduction to this level within a reasonable timeframe. In countries where severe poverty remains implies increasing consumption by those in poverty as quickly as possible, in a sustainable way, to a level adequate for a decent life, following locally determined poverty-reduction paths rather than externally imposed development policies. This will require increasing economic activity in some cases; but redistribution of income and wealth both within and between countries is a more essential part of this process.

The paradigm shift involves degrowth in wealthy parts of the world. The process, by which right-sizing may be achieved in the wealthiest countries, and in the global economy as a whole, is "degrowth". Degrowth is defined as a voluntary transition towards a just, participatory, and ecologically sustainable society. The objectives are to meet basic human needs and ensure a high quality of life, while reducing the ecological impact of the global economy to a sustainable level, equitably distributed between nations. This will not be achieved by involuntary economic contraction. Degrowth requires a transformation of the global economic system and of the policies promoted and pursued at the national level, to allow the reduction and ultimate eradication of absolute poverty to proceed as the global economy and unsustainable national economies degrow.

Once right-sizing has been achieved through the process of degrowth, the aim should be to maintain a "steady state economy" with a relatively stable, mildly fluctuating level of consumption. In general, the process of degrowth is characterised by:

1) *an emphasis on quality of life rather than quantity of consumption;*
2) *the fulfilment of basic human needs for all;*
3) *societal change based on a range of diverse individual and collective actions and policies;*
4) *substantially reduced dependence on economic activity, and an increase in free time, unremunerated activity, conviviality, sense of community, and individual and collective health;*

5) *encouragement of self-reflection, balance, creativity, flexibility, diversity, good citizenship, generosity, and non-materialism;*
6) *observation of the principles of equity, participatory democracy, respect for human rights, and respect for cultural differences.*

Progress towards degrowth requires immediate steps towards efforts to mainstream the concept of degrowth into parliamentary and public debate and economic institutions; the development of policies and tools for the practical implementation of degrowth; and development of new, non-monetary indicators (including subjective indicators) to identify, measure and compare the benefits and costs of economic activity, in order to assess whether changes in economic activity contribute to or undermine the fulfilment of social and environmental objectives.

The main idea of Degrowth can be, according to Serge Latouche, the emeritus professor at the University Paris-Sud, summed up as following[63]: "In the beginning the Degrowth was only a slogan provocative enough to open a discussion to question the consensus for growth and the growth fetishism – the belief that any economy should increase the value of its exchanges and production to avoid crisis or disaster. However the main thing that should be growing is the joy of living, for which we need "growing" quality of water, air and happiness."

[63] Qu'est ce que la décroissance ? - http://www.sinehebdo.eu/2009/12/25/serge-latouche/

6. Conclusion

It has been demonstrated by pinpointing the limits and the very nature of the Gross Domestic Product (GDP) that it is not suitable for measuring what we call welfare and well-being. This demonstration was further supported by direct comparison of GDP (or GDP per capita) with numerous alternative indices. Those alternatives, especially when combined together can sketch out the possible way forward to a better measure of well-being.

The most striking is the comparison of GDP per capita with Human Development Index (HDI) (Chapter 5.2.1.), which is designed to measure long term human development, especially when considered that whole one third of its index value is generated by GDP per capita. This way it has been showed that the very same level of human development measured by the HDI index is achieved with various levels of income, i.e. GDP per capita; and the other way around, the outcomes of equal level of GDP per capita vary in the fields of non-GDP based components of HDI (life expectancy, adult literacy and enrolment ratio). Concrete outcomes were illustrated with selected countries demonstrating the differences in both ways. The bottom line of these comparisons is the fact that it does matter how the monetary transaction are performed, i. e. how the income is being used/spent, which the GDP fails to distinguish.

Also subjective well-being indicators were covered – with Subjective Well-Being index (SWB) as a proxy towards the original Bhutanese Gross National Happiness (GNH). In fact, when considered deeply, it is no wonder that the revolutionary GNH originated in a Buddhist land were the life priorities differ from the Euro-American ones. Yet, this particular approach might be an exceptional inspiration and strong link to the new indicator, even though its application does not seem to be even remotely possible to the Euro-American society. However, its influence can be traced to the European de-growth concept.

As noted in the beginning, this thesis was not intended to invent new measure for the future – it surely is not that simple – but rather to collect the most interesting ideas and thoughts in the current world. To catch the recent trend of calling for a better measure of today's (and future) needs; i.e. "going beyond GDP". Now, after the financial crisis, the time seems to be perfect for a breakthrough with a new indicator.

> *"We can't measure the challenges of the future with the tools from the past"*
>
> *José Manuel Barroso, European Commission President*

7. References

BRČÁK, Josef; SEKERKA, Bohuslav. Makroekonomie. Plzeň : Aleš Čeněk, 2010. ISBN 978-80-7380-245-5

BOŘUTA, Michael. Ekonomie a štěstí. Praha : IES Bakalářská práce – vedoucí práce Prof. Ing. Lubomír Mlčoch, CSc., 2009. [online] <http://ies.fsv.cuni.cz/default/file/download/id/11126>

CAHLÍK, Tomáš. Makroekonomie. 1. vyd. Praha: Karolinum, 2006.

CANOY, Marcel. Well-being and Policy Making. OECD [online] [2010] <http://www.oecd.org/dataoecd/16/37/38331899.pdf>

CENTRAL INTELLIGENCE AGENCY. The World Factbook. USA [online] <https://www.cia.gov/library/publications/the-world-factbook/>

CONLEY Chip. Measuring what makes life worthwhile – TED talks February 2010. [online] <http://www.ted.com/talks/chip_conley_measuring_what_makes_life_worthwhile.html>

COSTANZA Robert; HART Maureen; POSNER Stephen; TALBERTH John. Beyond GDP: The Need for New Measures of Progress. Boston University: The Pardee Papers No. 4, January 2009. [online] <http://www.bu.edu/pardee/files/documents/PP-004-GDP.pdf>

CZECH STATISTICAL OFFICE. Quarterly National Accounts Inventories. Praha 2008-03-28 [online] <http://www.czso.cz/eng/redakce.nsf/i/methodology_quartely_national_accounts/$File/01486088.pdf>

DEINER, Ed; SUH, Eunkook M.; LUCAS, Richard E.; SMITH Heidi L.: Subjective Weil-Being: Three Decades of Progress. University of Illinois at Urbana-Champaign. Psychological Bulletin 1999, Vol. 125, No. 2, 276-302 [online] <http://www.psych.neu.edu/labs/ColvinWeb/psyg160/pdf/Diener%20et%20al%201999.pdf>

EUROPEAN COMMISSION. Beyond GDP: Measuring progress, true wealth and the well-being of nations. Luxembourg: Office for Official Publications of the European Communities, 2009, ISBN 978-92-79-09531-3. [online] <http://www.beyond-gdp.eu/proceedings/bgdp_proceedings_full.pdf>

EUROPEAN COMMISSION. Beyond GDP – Measuring Progress in a Changing World [2009-09-08] [online] video: <http://webcast.ec.europa.eu/eutv/portal/env/_v_fl_300_cs/player/index_player.html?id=7372&pId=7371>

EUROPEAN COMMISSION. Going Beyond GDP. [online] [q. 2010-03-21] video: <http://cms.streamfarm.net/cms/_vm300/14012dgenv/ondemand/3579beyond_gdp_cms.asx>

HUMAN DEVELOPMENT REPORT OFFICE. Human Development Report 2007/2008 – Technical Note. [online] <http://hdr.undp.org/en/media/HDR_20072008_Tech_Note_1.pdf>

HUMAN DEVELOPMENT REPORT OFFICE. Human Development Report 2006 – The state of human development. [online] <http://hdr.undp.org/en/media/thestateofhumandevelopment.pdf>

KENNEDY, Robert F. speech at the University of Kansas, March 18, 1968 [online] transcript: <http://www.jfklibrary.org/Historical+Resources/Archives/Reference+Desk/Speeches/RFK/RFKSpeech68Mar18UKansas.htm> speech: <http://www.glaserfoundation.org/program_areas/pdf/kennedy_speech.mp3>

KUZNETS, Simon. How To Judge Quality. The New Republic, October 20, 1962

KUZNETS, Simon. National Income, 1929-1932. 73rd US Congress, 2d session, Senate document no. 124, page 7. 1934 [online] <http://library.bea.gov/u?/SOD,888>

LATOUCHE Serge, le débat pour Siné Hebdo [online] video: Qu'est ce que la décroissance ? <http://www.sinehebdo.eu/2009/12/25/serge-latouche/> , Vers une sobriété volontaire… <http://www.sinehebdo.eu/2009/12/25/serge-latouche/2/>

MANKIW, Gregory. Brief Principles of Macroeconomics. 5e. USA: South-Western, 2009.

MIKOLÁŠEK, Jiří. Cena ženy aneb jak zvýšit HDP. [online] 2002-12-31 [q. 2010-03-27] <http://www.penize.cz/15291-cena-zeny-aneb-jak-zvysit-hdp>

MLČOCH, Lubomír. Ekonomie štěstí: Proč více někdy není lépe. Praha: Politická ekonomie, 2, 2007, p. 147-163. [online] <http://www.vse.cz/polek/pdf/594.pdf>

NATURE. Progressive thinking. [online] 2010-02-18 <http://www.nature.com/nature/journal/v463/n7283/full/463849b.html>

OECD [CUKIER Jérôme?]. OECD and Progress – Beyond GDP. [online] [q. 2010-03-22] <http://www.slideshare.net/OECD/oecd-and-progress-beyond-gdp>

RAWSKI, Thomas G. What is happening to China's GDP statistics?, China Economic Review, Volume 12, Issue 4, 2001, p.347-354, ISSN 1043-951X [online] <http://www.sciencedirect.com/science/article/B6W46-44YDJM0-C/2/16a76e8c8d8f931929455bfba7a28335>

SAMUELSON, Paul A.; NORDHAUS, William D. Ekonomie. 2. vyd. Praha: Svoboda, 1995

STIGLITZ, Joseph E.; SEN, Amartya; FITOUSSI, Jean-Paul. Report by the Commission on the Measurement of Economic Performance and Social Progress. 2009 [online] <http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf>

STIGLITZ, Joseph. Towards a better measure of well-being. Financial Times, 2009-09-13 [online] <http://www.ft.com/cms/s/0/95b492a8-a095-11de-b9ef-00144feabdc0.html>

ŠTIKA, Pavel. Ekonomie a štěstí. Praha: IES Occasional Papers, 2008. [online] <http://ies.fsv.cuni.cz/default/file/download/id/8977>

TALBERTH, Dr. John; COBB Clifford; SLATTERY Noah. The Genuine Progress Indicator 2006. USA: 2007 [online] <http://www.rprogress.org/publications/2007/GPI%202006.pdf>

VÍT, Josef. HDP = nesmyslný ukazatel ničeho... [online] 2007-04-18
<http://hledani.gnosis9.net/view.php?cisloclanku=2007040016>

Websites:

Czech Statistical Office [online] 2008 [quoted 2010-03-19]
<http://www.czso.cz/eng/redakce.nsf/i/gross_domestic_product_(gdp)>

Czech Statistical Office [q. 2010-03-28]
<http://www.czso.cz/csu/csu.nsf/informace/chdp03111010.xls>

Beyond GDP - International Conference - 19 & 20 November 2007, Brussels [online] [2010]
<http://www.beyond-gdp.eu/overview.html>

Declaration Degrowth-Paris 2008 [online] [2010] <http://www.degrowth.eu/v1/index.php?id=56>

Eurostat [online] 2010 [q. 2010-03-19]
<http://epp.eurostat.ec.europa.eu/portal/page/portal/about_eurostat/european_framework/ESS>

Eurostat [online] 2009 [q. 2010-03-19]
<http://epp.eurostat.ec.europa.eu/portal/page/portal/about_eurostat/corporate/introduction/harmonization>

GNH Methodology <http://www.grossnationalhappiness.com/gnhIndex/intruductionGNH.aspx>

HDR – Human Development [online] [2010] <http://hdr.undp.org/en/humandev/hdi/>

HDR – Statistics [online] [2010] <http://hdr.undp.org/en/statistics/data/>

HDR – Statistics [online] [2010] <http://hdr.undp.org/en/statistics/data/hd_map/>

HDR – Statistics [online] [2010] <http://hdr.undp.org/en/statistics/indices/gdi_gem/>

HDR – Statistics [online] [2010] <http://hdr.undp.org/en/statistics/indices/hdi/question,71,en.html>

HDR – Statistics [online] 2010-07-03 <http://hdr.undp.org/en/statistics/indices/hdi/>

HDR – Statistics [online] [2010] <http://hdr.undp.org/en/statistics/indices/hpi/>

Institut d'Etudes Economiques et Sociales pour la Décroissance Soutenable [2010]
<http://decroissance.org/>

R&D Research & Degrowth Recherche & Décroissance [online] [2010]
<http://www.degrowth.net/Economic-Degrowth-for>

Redefining Progress - Genuine Progress Indicator [online] [2010]
<http://www.rprogress.org/sustainability_indicators/genuine_progress_indicator.htm>

8. Appendix

Table 1 - Gross domestic product (2007) and other indicators[64]

Member State	GDP per capita(€)	GDP rank (EU)	Ecological footprint /person(hectares)	Ecological footprint rank (EU)	Healthy life indicator(years)	Healthy life rank (EU)	Unemployment rate (%)	Unemployment rank (EU)	Greenhouse gas emissions per capita (tonnes)	Greenhouse gas emissions rank (EU)	Happy life (years)	Happy life rank(EU)
Luxembourg	81,511	1	NA	NA	71,5	6	4,4	3	NA	NA	59	5
Ireland	44,676	2	5	16	69,8	15	4,4	2	17,2	24	58,3	7
Netherlands	36,937	3	4,4	11	71,2	8	3,9	1	13,4	19	58,7	6
Denmark	36,92	4	5,8	20	69,8	14	4,5	5	12,9	17	62,7	1
Austria	36,368	5	4,9	13	71,4	7	4,8	6	11,2	15	61	2
Finland	35,559	6	7,8	23	71,1	10	7,7	18	15,6	22	59,8	4
United Kingdom	35,486	7	5,6	19	70,6	13	5,4	8	11	14	55,2	11
Belgium	34,749	8	NA	NA	71,1	9	8,2	21	14,3	20	56,5	9
Sweden	34,735	9	6,1	21	73,3	1	4,8	7	7,8	4	60,8	3
Greece	33,004	10	5	15	71	11	8,9	23	12,9	18	49,6	17
OECD Average	32,33		5,1		70,2		6,2		13		53,9	
France	31,825	11	5,6	18	72	4	9,5	25	9	8	51,4	15
Germany	31,39	12	4,5	12	71,8	5	8,1	20	12,3	16	55,7	10
Italy	31,051	13	4,2	8	72,7	2	6,8	13	10	11	54,2	12
Cyprus	29,87	14	NA	NA	67,6	19	4,5	4	NA	NA	53,7	14
EU-27 Average	28,899		4,6		68,9		7,1		10,6		49,7	
Spain	27,914	15	5,4	17	72,6	3	8,5	22	10,6	13	54,1	13
Slovenia	24,571	16	3,4	6	69,5	16	6	11	10	10	50,4	16
Czech Republic	23,399	17	4,9	14	68,4	18	7,1	14	14,4	21	47,9	18
Portugal	22,937	18	4,2	9	69,2	17	7,7	19	8	5	45,7	19
Malta	22,239	19	NA	NA	71	12	7,3	15	NA	NA	58,2	8
Hungary	20,047	20	3,5	7	64,9	22	7,5	17	8,4	6	40	21
Estonia	19,692	21	6,5	22	64,1	24	5,9	10	15,9	23	35,8	23
Slovakia	17,913	22	3,2	4	66,2	20	13,4	26	9,4	9	40	22
Lithuania	16,373	23	4,4	10	63,3	25	5,6	9	5,6	2	33,2	25
Latvia	15,806	24	2,6	2	62,8	27	6,8	12	4,7	1	32,9	26
Poland	15,149	25	3,3	5	65,8	21	13,8	27	10,1	12	43,1	20
Romania	10,125	26	2,4	1	63,1	26	7,3	16	6,9	3	35,2	24
Bulgaria	10,022	27	3,1	3	64,6	23	9	24	9	7	30	27
BRIC[65] Average	8,444		2,2		59		NA		NA		39,6	

[64] Source: IMF (2007) and WWF (2003), WHO 2002, Eurostat (2007), UNFCCC (2004) and US Census Bureau, and Veenhoven (2006)

[65] BRIC: Brazil, Russia, India and China.

Table 2 - HDI compared to GDP per capita (sorted by HDI) - 2007 data[66]

HDI Rank	Country	HDI index value	Life expectancy at birth (years)	Adult literacy rate (% aged 15 and above)	Combined gross enrolment ration in education (%)	GDP per capita (PPP USD)	Life expectancy index	Education index	GDP index	GDP per capita (PPP USD) rank minus HDI rank
1	Norway	0,971	80,5	99	98,6	53,433	0,925	0,989	1	4
2	Australia	0,97	81,4	99	114,2	34,923	0,94	0,993	0,977	20
3	Iceland	0,969	81,7	99	96	35,742	0,946	0,98	0,981	16
4	Canada	0,966	80,6	99	99,3	35,812	0,927	0,991	0,982	14
5	Ireland	0,965	79,7	99	97,6	44,613	0,911	0,985	1	5
6	Netherlands	0,964	79,8	99	97,5	38,694	0,914	0,985	0,994	8
7	Sweden	0,963	80,8	99	94,3	36,712	0,93	0,974	0,986	9
8	France	0,961	81	99	95,4	33,674	0,933	0,978	0,971	17
9	Switzerland	0,96	81,7	99	82,7	40,658	0,945	0,936	1	4
10	Japan	0,96	82,7	99	86,6	33,632	0,961	0,949	0,971	16
11	Luxembourg	0,96	79,4	99	94,4	79,485	0,906	0,975	1	-9
12	Finland	0,959	79,5	99	101,4	34,526	0,908	0,993	0,975	11
13	United States	0,956	79,1	99	92,4	45,592	0,902	0,968	1	-4
14	Austria	0,955	79,9	99	90,5	37,37	0,915	0,962	0,989	1
15	Spain	0,955	80,7	97,9	96,5	31,56	0,929	0,975	0,96	12
16	Denmark	0,955	78,2	99	101,3	36,13	0,887	0,993	0,983	1
17	Belgium	0,953	79,5	99	94,3	34,935	0,908	0,974	0,977	4
18	Italy	0,951	81,1	98,9	91,8	30,353	0,935	0,965	0,954	11
19	Liechtenstein	0,951	79,2	99	86,8	85,382	0,903	0,949	1	-18
20	New Zealand	0,95	80,1	99	107,5	27,336	0,919	0,993	0,936	12
21	United Kingdom	0,947	79,3	99	89,2	35,13	0,906	0,957	0,978	-1
22	Germany	0,947	79,8	99	88,1	34,401	0,913	0,954	0,975	2
23	Singapore	0,944	80,2	94,4	85	49,704	0,92	0,913	1	-16
24	Hong Kong, China (SAR)	0,944	82,2	94,6	74,4	42,306	0,953	0,879	1	-13
25	Greece	0,942	79,1	97,1	101,6	28,517	0,902	0,981	0,944	6
26	Korea (Republic of)	0,937	79,2	99	98,5	24,801	0,904	0,988	0,92	9
27	Israel	0,935	80,7	97,1	89,9	26,315	0,928	0,947	0,93	7
28	Andorra	0,934	80,5	99	65,1	41,235	0,925	0,877	1	-16
29	Slovenia	0,929	78,2	99,7	92,8	26,753	0,886	0,969	0,933	4
30	Brunei Darussalam	0,92	77	94,9	77,7	50,2	0,867	0,891	1	-24
31	Kuwait	0,916	77,5	94,5	72,6	47,812	0,875	0,872	1	-23
32	Cyprus	0,914	79,6	97,7	77,6	24,789	0,91	0,91	0,92	4
33	Qatar	0,91	75,5	93,1	80,4	74,882	0,841	0,888	1	-30
34	Portugal	0,909	78,6	94,9	88,8	22,765	0,893	0,929	0,906	8
35	United Arab Emirates	0,903	77,3	90	71,4	54,626	0,872	0,838	1	-31
36	Czech Republic	0,903	76,4	99	83,4	24,144	0,856	0,938	0,916	1
37	Barbados	0,903	77	99	92,9	17,956	0,867	0,975	0,866	11
38	Malta	0,902	79,6	92,4	81,3	23,08	0,91	0,887	0,908	1
39	Bahrain	0,895	75,6	88,8	90,4	29,723	0,843	0,893	0,95	-9
40	Estonia	0,883	72,9	99,8	91,2	20,361	0,799	0,964	0,887	3
41	Poland	0,88	75,5	99,3	87,7	15,987	0,842	0,952	0,847	12
42	Slovakia	0,88	74,6	99	80,5	20,076	0,827	0,928	0,885	3
43	Hungary	0,879	73,3	98,9	90,2	18,755	0,805	0,96	0,874	3
44	Chile	0,878	78,5	96,5	82,5	13,88	0,891	0,919	0,823	15
45	Croatia	0,871	76	98,7	77,2	16,027	0,85	0,916	0,847	7
46	Lithuania	0,87	71,8	99,7	92,3	17,575	0,78	0,968	0,863	3
47	Antigua and Barbuda	0,868	72,2	99	85,6	18,691	0,786	0,945	0,873	0
48	Latvia	0,866	72,3	99,8	90,2	16,377	0,788	0,961	0,851	3
49	Argentina	0,866	75,2	97,6	88,6	13,238	0,836	0,946	0,815	13
50	Uruguay	0,865	76,1	97,9	90,9	11,216	0,852	0,955	0,788	20
51	Cuba	0,863	78,5	99,8	100,8	6,876	0,891	0,993	0,706	44
52	Bahamas	0,856	73,2	95,8	71,8	20,253	0,804	0,878	0,886	-8
53	Mexico	0,854	76	92,8	80,2	14,104	0,85	0,886	0,826	5
54	Costa Rica	0,854	78,7	95,9	73	10,842	0,896	0,883	0,782	19
55	Libyan Arab Jamahiriya	0,847	73,8	86,8	95,8	14,364	0,814	0,898	0,829	2
56	Oman	0,846	75,5	84,4	68,2	22,816	0,841	0,79	0,906	-15

[66] HDR – Statistics http://hdr.undp.org/en/statistics/data/

HDI Rank	Country	HDI index value	Life expectancy at birth (years)	Adult literacy rate (% aged 15 and above)	Combined gross enrolment ration in education (%)	GDP per capita (PPP USD)	Life expectancy index	Education index	GDP index	GDP per capita (PPP USD) rank minus HDI rank
57	Seychelles	0,845	72,8	91,8	82,2	16,394	0,797	0,886	0,851	-7
58	Venezuela (Bolivarian Republic of)	0,844	73,6	95,2	85,9	12,156	0,811	0,921	0,801	7
59	Saudi Arabia	0,843	72,7	85	78,5	22,935	0,794	0,828	0,907	-19
60	Panama	0,84	75,5	93,4	79,7	11,391	0,842	0,888	0,79	7
61	Bulgaria	0,84	73,1	98,3	82,4	11,222	0,802	0,93	0,788	8
62	Saint Kitts and Nevis	0,838	72,2	97,8	73,1	14,481	0,787	0,896	0,83	-6
63	Romania	0,837	72,5	97,6	79,2	12,369	0,792	0,915	0,804	1
64	Trinidad and Tobago	0,837	69,2	98,7	61,1	23,507	0,737	0,861	0,911	-26
65	Montenegro	0,834	74	96,4	74,5	11,699	0,817	0,891	0,795	1
66	Malaysia	0,829	74,1	91,9	71,5	13,518	0,819	0,851	0,819	-5
67	Serbia	0,826	73,9	96,4	74,5	10,248	0,816	0,891	0,773	8
68	Belarus	0,826	69	99,7	90,4	10,841	0,733	0,961	0,782	6
69	Saint Lucia	0,821	73,6	94,8	77,2	9,786	0,81	0,889	0,765	8
70	Albania	0,818	76,5	99	67,8	7,041	0,858	0,886	0,71	23
71	Russian Federation	0,817	66,2	99,5	81,9	14,69	0,686	0,933	0,833	-16
72	The former Yugoslav Republic of Macedonia	0,817	74,1	97	70,1	9,096	0,819	0,88	0,753	8
73	Dominica	0,814	76,9	88	78,5	7,893	0,865	0,848	0,729	10
74	Grenada	0,813	75,3	96	73,1	7,344	0,838	0,884	0,717	18
75	Brazil	0,813	72,2	90	87,2	9,567	0,787	0,891	0,761	4
76	Bosnia and Herzegovina	0,812	75,1	96,7	69	7,764	0,834	0,874	0,726	11
77	Colombia	0,807	72,7	92,7	79	8,587	0,795	0,881	0,743	4
78	Peru	0,806	73	89,6	88,1	7,836	0,8	0,891	0,728	7
79	Turkey	0,806	71,7	88,7	71,1	12,955	0,779	0,828	0,812	-16
80	Ecuador	0,806	75	91	77,8	7,449	0,833	0,866	0,719	11
81	Mauritius	0,804	72,1	87,4	76,9	11,296	0,785	0,839	0,789	-13
82	Kazakhstan	0,804	64,9	99,6	91,4	10,863	0,666	0,965	0,782	-10
83	Lebanon	0,803	71,9	89,6	78	10,109	0,781	0,857	0,77	-7
84	Armenia	0,798	73,6	99,5	74,6	5,693	0,81	0,909	0,675	16
85	Ukraine	0,796	68,2	99,7	90	6,914	0,72	0,96	0,707	9
86	Azerbaijan	0,787	70	99,5	66,2	7,851	0,751	0,881	0,728	-2
87	Thailand	0,783	68,7	94,1	78	8,135	0,728	0,888	0,734	-5
88	Iran (Islamic Republic of)	0,782	71,2	82,3	73,2	10,955	0,769	0,793	0,784	-17
89	Georgia	0,778	71,6	100	76,7	4,662	0,777	0,916	0,641	21
90	Dominican Republic	0,777	72,4	89,1	73,5	6,706	0,79	0,839	0,702	7
91	Saint Vincent and the Grenadines	0,772	71,4	88,1	68,9	7,691	0,774	0,817	0,725	-2
92	China	0,772	72,9	93,3	68,7	5,383	0,799	0,851	0,665	10
93	Belize	0,772	76	75,1	78,3	6,734	0,851	0,762	0,703	3
94	Samoa	0,771	71,4	98,7	74,1	4,467	0,773	0,905	0,634	19
95	Maldives	0,771	71,1	97	71,3	5,196	0,768	0,885	0,659	9
96	Jordan	0,77	72,4	91,1	78,7	4,901	0,79	0,87	0,65	11
97	Suriname	0,769	68,8	90,4	74,3	7,813	0,729	0,85	0,727	-11
98	Tunisia	0,769	73,8	77,7	76,2	7,52	0,813	0,772	0,721	-8
99	Tonga	0,768	71,7	99,2	78	3,748	0,778	0,92	0,605	21
100	Jamaica	0,766	71,7	86	78,1	6,079	0,778	0,834	0,686	-2
101	Paraguay	0,761	71,7	94,6	72,1	4,433	0,778	0,871	0,633	13
102	Sri Lanka	0,759	74	90,8	68,7	4,243	0,816	0,834	0,626	14
103	Gabon	0,755	60,1	86,2	80,7	15,167	0,584	0,843	0,838	-49
104	Algeria	0,754	72,2	75,4	73,6	7,74	0,787	0,748	0,726	-16
105	Philippines	0,751	71,6	93,4	79,6	3,406	0,777	0,888	0,589	19
106	El Salvador	0,747	71,3	82	74	5,804	0,771	0,794	0,678	-7
107	Syrian Arab Republic	0,742	74,1	83,1	65,7	4,511	0,818	0,773	0,636	5
108	Fiji	0,741	68,7	94,4	71,5	4,304	0,728	0,868	0,628	7
109	Turkmenistan	0,739	64,6	99,5	73,9	4,953	0,661	0,906	0,651	-3
111	Indonesia	0,734	70,5	92	68,2	3,712	0,758	0,84	0,603	10
112	Honduras	0,732	72	83,6	74,8	3,796	0,783	0,806	0,607	7
113	Bolivia	0,729	65,4	90,7	86	4,206	0,673	0,892	0,624	4
114	Guyana	0,729	66,5	99	83,9	2,782	0,691	0,939	0,555	13
115	Mongolia	0,727	66,2	97,3	79,2	3,236	0,687	0,913	0,58	10
116	Viet Nam	0,725	74,3	90,3	62,3	2,6	0,821	0,81	0,544	13
117	Moldova	0,72	68,3	99,2	71,6	2,551	0,722	0,899	0,541	14
118	Equatorial Guinea	0,719	49,9	87	62	30,627	0,415	0,787	0,955	-90
119	Uzbekistan	0,71	67,6	96,9	72,7	2,425	0,711	0,888	0,532	14
120	Kyrgyzstan	0,71	67,6	99,3	77,3	2,006	0,71	0,918	0,5	20
121	Cape Verde	0,708	71,1	83,8	68,1	3,041	0,769	0,786	0,57	5
122	Guatemala	0,704	70,1	73,2	70,5	4,562	0,752	0,723	0,638	-11
123	Egypt	0,703	69,9	66,4	76,4	5,349	0,749	0,697	0,664	-20
124	Nicaragua	0,699	72,7	78	72,1	2,57	0,795	0,76	0,542	6
125	Botswana	0,694	53,4	82,9	70,6	13,604	0,473	0,788	0,82	-65

HDI Rank	Country	HDI index value	Life expectancy at birth (years)	Adult literacy rate (% aged 15 and above)	Combined gross enrolment ration in education (%)	GDP per capita (PPP USD)	Life expectancy index	Education index	GDP index	GDP per capita (PPP USD) rank minus HDI rank
126	Vanuatu	0,693	69,9	78,1	62,3	3,666	0,748	0,728	0,601	-4
127	Tajikistan	0,688	66,4	99,6	70,9	1,753	0,691	0,896	0,478	17
128	Namibia	0,686	60,4	88	67,2	5,155	0,59	0,811	0,658	-23
129	South Africa	0,683	51,5	88	76,8	9,757	0,442	0,843	0,765	-51
130	Morocco	0,654	71	55,6	61	4,108	0,767	0,574	0,62	-12
131	Sao Tome and Principe	0,651	65,4	87,9	68,1	1,638	0,673	0,813	0,467	17
132	Bhutan	0,619	65,7	52,8	54,1	4,837	0,678	0,533	0,647	-24
133	Lao People's Democratic Republic	0,619	64,6	72,7	59,6	2,165	0,659	0,683	0,513	2
134	India	0,612	63,4	66	61	2,753	0,639	0,643	0,553	-6
135	Solomon Islands	0,61	65,8	76,6	49,7	1,725	0,68	0,676	0,475	10
136	Congo	0,601	53,5	81,1	58,6	3,511	0,474	0,736	0,594	-13
137	Cambodia	0,593	60,6	76,3	58,5	1,802	0,593	0,704	0,483	6
139	Comoros	0,576	64,9	75,1	46,4	1,143	0,666	0,655	0,407	20
140	Yemen	0,575	62,5	58,9	54,4	2,335	0,624	0,574	0,526	-6
141	Pakistan	0,572	66,2	54,2	39,3	2,496	0,687	0,492	0,537	-9
142	Swaziland	0,572	45,3	79,6	60,1	4,789	0,339	0,731	0,646	-33
143	Angola	0,564	46,5	67,4	65,3	5,385	0,359	0,667	0,665	-42
144	Nepal	0,553	66,3	56,5	60,8	1,049	0,688	0,579	0,392	21
146	Bangladesh	0,543	65,7	53,5	52,1	1,241	0,678	0,53	0,42	9
147	Kenya	0,541	53,6	73,6	59,6	1,542	0,477	0,69	0,457	2
148	Papua New Guinea	0,541	60,7	57,8	40,7	2,084	0,594	0,521	0,507	-10
149	Haiti	0,532	61	62,1	52,1	1,155	0,6	0,588	0,408	9
150	Sudan	0,531	57,9	60,9	39,9	2,086	0,548	0,539	0,507	-13
151	Tanzania (United Republic of)	0,53	55	72,3	57,3	1,208	0,5	0,673	0,416	6
152	Ghana	0,526	56,5	65	56,5	1,334	0,525	0,622	0,432	1
153	Cameroon	0,523	50,9	67,9	52,3	2,128	0,431	0,627	0,51	-17
154	Mauritania	0,52	56,6	55,8	50,6	1,927	0,526	0,541	0,494	-12
155	Djibouti	0,52	55,1	70,3	25,5	2,061	0,501	0,554	0,505	-16
156	Lesotho	0,514	44,9	82,2	61,5	1,541	0,332	0,753	0,457	-6
157	Uganda	0,514	51,9	73,6	62,3	1,059	0,449	0,698	0,394	6
158	Nigeria	0,511	47,7	72	53	1,969	0,378	0,657	0,497	-17
161	Benin	0,492	61	40,5	52,4	1,312	0,601	0,445	0,43	-7
163	Côte d'Ivoire	0,484	56,8	48,7	37,5	1,69	0,531	0,45	0,472	-17
164	Zambia	0,481	44,5	70,6	63,3	1,358	0,326	0,682	0,435	-12
166	Senegal	0,464	55,4	41,9	41,2	1,666	0,506	0,417	0,469	-19
168	Gambia	0,456	55,7	42,5	46,8	1,225	0,511	0,439	0,418	-12
170	Guinea	0,435	57,3	29,5	49,3	1,14	0,538	0,361	0,406	-10
175	Chad	0,392	48,6	31,8	36,5	1,477	0,393	0,334	0,449	-24
177	Burkina Faso	0,389	52,7	28,7	32,8	1,124	0,462	0,301	0,404	-16
178	Mali	0,371	48,1	26,2	46,9	1,083	0,385	0,331	0,398	-16
181	Afghanistan	0,352	43,6	28	50,1	1,054	0,31	0,354	0,393	-17

Table 3 – GDP per capita compared to HDI (sorted by GDP per capita) - 2007 data

HDI Rank	Country	HDI index value	Life expectancy at birth (years)	Adult literacy rate (% aged 15 and above)	Combined gross enrolment ration in education (%)	GDP per capita (PPP USD)	Life expectancy index	Education index	GDP index	GDP per capita (PPP USD) rank minus HDI rank
19	Liechtenstein	0,951	79,2	99	86,8	85,38	0,903	0,949	1	-18
11	Luxembourg	0,96	79,4	99	94,4	79,48	0,906	0,975	1	-9
33	Qatar	0,91	75,5	93,1	80,4	74,88	0,841	0,888	1	-30
35	United Arab Emirates	0,903	77,3	90	71,4	54,62	0,872	0,838	1	-31
1	Norway	0,971	80,5	99	98,6	53,43	0,925	0,989	1	4
30	Brunei Darussalam	0,92	77	94,9	77,7	50,2	0,867	0,891	1	-24
23	Singapore	0,944	80,2	94,4	85	49,70	0,92	0,913	1	-16
31	Kuwait	0,916	77,5	94,5	72,6	47,81	0,875	0,872	1	-23
13	United States	0,956	79,1	99	92,4	45,59	0,902	0,968	1	-4
5	Ireland	0,965	79,7	99	97,6	44,61	0,911	0,985	1	5
24	Hong Kong, China (SAR)	0,944	82,2	94,6	74,4	42,30	0,953	0,879	1	-13
28	Andorra	0,934	80,5	99	65,1	41,23	0,925	0,877	1	-16
9	Switzerland	0,96	81,7	99	82,7	40,65	0,945	0,936	1	4
6	Netherlands	0,964	79,8	99	97,5	38,69	0,914	0,985	0,994	8
14	Austria	0,955	79,9	99	90,5	37,37	0,915	0,962	0,989	1
7	Sweden	0,963	80,8	99	94,3	36,71	0,93	0,974	0,986	9
16	Denmark	0,955	78,2	99	101,3	36,13	0,887	0,993	0,983	1
4	Canada	0,966	80,6	99	99,3	35,81	0,927	0,991	0,982	14
3	Iceland	0,969	81,7	99	96	35,74	0,946	0,98	0,981	16
21	United Kingdom	0,947	79,3	99	89,2	35,13	0,906	0,957	0,978	-1
17	Belgium	0,953	79,5	99	94,3	34,93	0,908	0,974	0,977	4
2	Australia	0,97	81,4	99	114,2	34,92	0,94	0,993	0,977	20
12	Finland	0,959	79,5	99	101,4	34,52	0,908	0,993	0,975	11
22	Germany	0,947	79,8	99	88,1	34,40	0,913	0,954	0,975	2
8	France	0,961	81	99	95,4	33,67	0,933	0,978	0,971	17
10	Japan	0,96	82,7	99	86,6	33,63	0,961	0,949	0,971	16
15	Spain	0,955	80,7	97,9	96,5	31,56	0,929	0,975	0,96	12
118	Equatorial Guinea	0,719	49,9	87	62	30,62	0,415	0,787	0,955	-90
18	Italy	0,951	81,1	98,9	91,8	30,35	0,935	0,965	0,954	11
39	Bahrain	0,895	75,6	88,8	90,4	29,72	0,843	0,893	0,95	-9
25	Greece	0,942	79,1	97,1	101,6	28,51	0,902	0,981	0,944	6
20	New Zealand	0,95	80,1	99	107,5	27,33	0,919	0,993	0,936	12
29	Slovenia	0,929	78,2	99,7	92,8	26,75	0,886	0,969	0,933	4
27	Israel	0,935	80,7	97,1	89,9	26,31	0,928	0,947	0,93	7
26	Korea (Republic of)	0,937	79,2	99	98,5	24,80	0,904	0,988	0,92	9
32	Cyprus	0,914	79,6	97,7	77,6	24,78	0,91	0,91	0,92	4
36	Czech Republic	0,903	76,4	99	83,4	24,14	0,856	0,938	0,916	1
64	Trinidad and Tobago	0,837	69,2	98,7	61,1	23,50	0,737	0,861	0,911	-26
38	Malta	0,902	79,6	92,4	81,3	23,08	0,91	0,887	0,908	1
59	Saudi Arabia	0,843	72,7	85	78,5	22,93	0,794	0,828	0,907	-19
56	Oman	0,846	75,5	84,4	68,2	22,81	0,841	0,79	0,906	-15
34	Portugal	0,909	78,6	94,9	88,8	22,76	0,893	0,929	0,906	8
40	Estonia	0,883	72,9	99,8	91,2	20,36	0,799	0,964	0,887	3
52	Bahamas	0,856	73,2	95,8	71,8	20,25	0,804	0,878	0,886	-8
42	Slovakia	0,88	74,6	99	80,5	20,07	0,827	0,928	0,885	3
43	Hungary	0,879	73,3	98,9	90,2	18,75	0,805	0,96	0,874	3
47	Antigua and Barbuda	0,868	72,2	99	85,6	18,69	0,786	0,945	0,873	0
37	Barbados	0,903	77	99	92,9	17,95	0,867	0,975	0,866	11
46	Lithuania	0,87	71,8	99,7	92,3	17,57	0,78	0,968	0,863	3
57	Seychelles	0,845	72,8	91,8	82,2	16,39	0,797	0,886	0,851	-7
48	Latvia	0,866	72,3	99,8	90,2	16,37	0,788	0,961	0,851	3
45	Croatia	0,871	76	98,7	77,2	16,02	0,85	0,916	0,847	7
41	Poland	0,88	75,5	99,3	87,7	15,98	0,842	0,952	0,847	12
103	Gabon	0,755	60,1	86,2	80,7	15,16	0,584	0,843	0,838	-49
71	Russian Federation	0,817	66,2	99,5	81,9	14,69	0,686	0,933	0,833	-16
62	Saint Kitts and Nevis	0,838	72,2	97,8	73,1	14,48	0,787	0,896	0,83	-6
55	Libyan Arab Jamahiriya	0,847	73,8	86,8	95,8	14,36	0,814	0,898	0,829	2
53	Mexico	0,854	76	92,8	80,2	14,10	0,85	0,886	0,826	5
44	Chile	0,878	78,5	96,5	82,5	13,88	0,891	0,919	0,823	15
125	Botswana	0,694	53,4	82,9	70,6	13,60	0,473	0,788	0,82	-65
66	Malaysia	0,829	74,1	91,9	71,5	13,51	0,819	0,851	0,819	-5
49	Argentina	0,866	75,2	97,6	88,6	13,23	0,836	0,946	0,815	13
79	Turkey	0,806	71,7	88,7	71,1	12,95	0,779	0,828	0,812	-16
63	Romania	0,837	72,5	97,6	79,2	12,36	0,792	0,915	0,804	1
58	Venezuela (Bolivarian Republic of)	0,844	73,6	95,2	85,9	12,15	0,811	0,921	0,801	7

HDI Rank	Country	HDI index value	Life expectancy at birth (years)	Adult literacy rate (% aged 15 and above)	Combined gross enrolment ration in education (%)	GDP per capita (PPP USD)	Life expectancy index	Education index	GDP index	GDP per capita (PPP USD) rank minus HDI rank
65	Montenegro	0,834	74	96,4	74,5	11,69	0,817	0,891	0,795	1
60	Panama	0,84	75,5	93,4	79,7	11,39	0,842	0,888	0,79	7
81	Mauritius	0,804	72,1	87,4	76,9	11,29	0,785	0,839	0,789	-13
61	Bulgaria	0,84	73,1	98,3	82,4	11,22	0,802	0,93	0,788	8
50	Uruguay	0,865	76,1	97,9	90,9	11,21	0,852	0,955	0,788	20
88	Iran (Islamic Republic of)	0,782	71,2	82,3	73,2	10,95	0,769	0,793	0,784	-17
82	Kazakhstan	0,804	64,9	99,6	91,4	10,86	0,666	0,965	0,782	-10
54	Costa Rica	0,854	78,7	95,9	73	10,84	0,896	0,883	0,782	19
68	Belarus	0,826	69	99,7	90,4	10,84	0,733	0,961	0,782	6
67	Serbia	0,826	73,9	96,4	74,5	10,24	0,816	0,891	0,773	8
83	Lebanon	0,803	71,9	89,6	78	10,10	0,781	0,857	0,77	-7
69	Saint Lucia	0,821	73,6	94,8	77,2	9,786	0,81	0,889	0,765	8
129	South Africa	0,683	51,5	88	76,8	9,757	0,442	0,843	0,765	-51
75	Brazil	0,813	72,2	90	87,2	9,567	0,787	0,891	0,761	4
72	The former Yugoslav Republic of Macedo	0,817	74,1	97	70,1	9,096	0,819	0,88	0,753	8
77	Colombia	0,807	72,7	92,7	79	8,587	0,795	0,881	0,743	4
87	Thailand	0,783	68,7	94,1	78	8,135	0,728	0,888	0,734	-5
73	Dominica	0,814	76,9	88	78,5	7,893	0,865	0,848	0,729	10
86	Azerbaijan	0,787	70	99,5	66,2	7,851	0,751	0,881	0,728	-2
78	Peru	0,806	73	89,6	88,1	7,836	0,8	0,891	0,728	7
97	Suriname	0,769	68,8	90,4	74,3	7,813	0,729	0,85	0,727	-11
76	Bosnia and Herzegovina	0,812	75,1	96,7	69	7,764	0,834	0,874	0,726	11
104	Algeria	0,754	72,2	75,4	73,6	7,74	0,787	0,748	0,726	-16
91	Saint Vincent and the Grenadines	0,772	71,4	88,1	68,9	7,691	0,774	0,817	0,725	-2
98	Tunisia	0,769	73,8	77,7	76,2	7,52	0,813	0,772	0,721	-8
80	Ecuador	0,806	75	91	77,8	7,449	0,833	0,866	0,719	11
74	Grenada	0,813	75,3	96	73,1	7,344	0,838	0,884	0,717	18
70	Albania	0,818	76,5	99	67,8	7,041	0,858	0,886	0,71	23
85	Ukraine	0,796	68,2	99,7	90	6,914	0,72	0,96	0,707	9
51	Cuba	0,863	78,5	99,8	100,8	6,876	0,891	0,993	0,706	44
93	Belize	0,772	76	75,1	78,3	6,734	0,851	0,762	0,703	3
90	Dominican Republic	0,777	72,4	89,1	73,5	6,706	0,79	0,839	0,702	7
100	Jamaica	0,766	71,7	86	78,1	6,079	0,778	0,834	0,686	-2
106	El Salvador	0,747	71,3	82	74	5,804	0,771	0,794	0,678	-7
84	Armenia	0,798	73,6	99,5	74,6	5,693	0,81	0,909	0,675	16
143	Angola	0,564	46,5	67,4	65,3	5,385	0,359	0,667	0,665	-42
92	China	0,772	72,9	93,3	68,7	5,383	0,799	0,851	0,665	10
123	Egypt	0,703	69,9	66,4	76,4	5,349	0,749	0,697	0,664	-20
95	Maldives	0,771	71,1	97	71,3	5,196	0,768	0,885	0,659	9
128	Namibia	0,686	60,4	88	67,2	5,155	0,59	0,811	0,658	-23
109	Turkmenistan	0,739	64,6	99,5	73,9	4,953	0,661	0,906	0,651	-3
96	Jordan	0,77	72,4	91,1	78,7	4,901	0,79	0,87	0,65	11
132	Bhutan	0,619	65,7	52,8	54,1	4,837	0,678	0,533	0,647	-24
142	Swaziland	0,572	45,3	79,6	60,1	4,789	0,339	0,731	0,646	-33
89	Georgia	0,778	71,6	100	76,7	4,662	0,777	0,916	0,641	21
122	Guatemala	0,704	70,1	73,2	70,5	4,562	0,752	0,723	0,638	-11
107	Syrian Arab Republic	0,742	74,1	83,1	65,7	4,511	0,818	0,773	0,636	5
94	Samoa	0,771	71,4	98,7	74,1	4,467	0,773	0,905	0,634	19
101	Paraguay	0,761	71,7	94,6	72,1	4,433	0,778	0,871	0,633	13
108	Fiji	0,741	68,7	94,4	71,5	4,304	0,728	0,868	0,628	7
102	Sri Lanka	0,759	74	90,8	68,7	4,243	0,816	0,834	0,626	14
113	Bolivia	0,729	65,4	90,7	86	4,206	0,673	0,892	0,624	4
130	Morocco	0,654	71	55,6	61	4,108	0,767	0,574	0,62	-12
112	Honduras	0,732	72	83,6	74,8	3,796	0,783	0,806	0,607	7
99	Tonga	0,768	71,7	99,2	78	3,748	0,778	0,92	0,605	21
111	Indonesia	0,734	70,5	92	68,2	3,712	0,758	0,84	0,603	10
126	Vanuatu	0,693	69,9	78,1	62,3	3,666	0,748	0,728	0,601	-4
136	Congo	0,601	53,5	81,1	58,6	3,511	0,474	0,736	0,594	-13
105	Philippines	0,751	71,6	93,4	79,6	3,406	0,777	0,888	0,589	19
115	Mongolia	0,727	66,2	97,3	79,2	3,236	0,687	0,913	0,58	10
121	Cape Verde	0,708	71,1	83,8	68,1	3,041	0,769	0,786	0,57	5
114	Guyana	0,729	66,5	99	83,9	2,782	0,691	0,939	0,555	13
134	India	0,612	63,4	66	61	2,753	0,639	0,643	0,553	-6
116	Viet Nam	0,725	74,3	90,3	62,3	2,6	0,821	0,81	0,544	13
124	Nicaragua	0,699	72,7	78	72,1	2,57	0,795	0,76	0,542	6
117	Moldova	0,72	68,3	99,2	71,6	2,551	0,722	0,899	0,541	14
141	Pakistan	0,572	66,2	54,2	39,3	2,496	0,687	0,492	0,537	-9

HDI Rank	Country	HDI index value	Life expectancy at birth (years)	Adult literacy rate (% aged 15 and above)	Combined gross enrolment ration in education (%)	GDP per capita (PPP USD)	Life expectancy index	Education index	GDP index	GDP per capita (PPP USD) rank minus HDI rank
119	Uzbekistan	0,71	67,6	96,9	72,7	2,425	0,711	0,888	0,532	14
140	Yemen	0,575	62,5	58,9	54,4	2,335	0,624	0,574	0,526	-6
133	Lao People's Democratic Republic	0,619	64,6	72,7	59,6	2,165	0,659	0,683	0,513	2
153	Cameroon	0,523	50,9	67,9	52,3	2,128	0,431	0,627	0,51	-17
150	Sudan	0,531	57,9	60,9	39,9	2,086	0,548	0,539	0,507	-13
148	Papua New Guinea	0,541	60,7	57,8	40,7	2,084	0,594	0,521	0,507	-10
155	Djibouti	0,52	55,1	70,3	25,5	2,061	0,501	0,554	0,505	-16
120	Kyrgyzstan	0,71	67,6	99,3	77,3	2,006	0,71	0,918	0,5	20
158	Nigeria	0,511	47,7	72	53	1,969	0,378	0,657	0,497	-17
154	Mauritania	0,52	56,6	55,8	50,6	1,927	0,526	0,541	0,494	-12
137	Cambodia	0,593	60,6	76,3	58,5	1,802	0,593	0,704	0,483	6
127	Tajikistan	0,688	66,4	99,6	70,9	1,753	0,691	0,896	0,478	17
135	Solomon Islands	0,61	65,8	76,6	49,7	1,725	0,68	0,676	0,475	10
163	Côte d'Ivoire	0,484	56,8	48,7	37,5	1,69	0,531	0,45	0,472	-17
166	Senegal	0,464	55,4	41,9	41,2	1,666	0,506	0,417	0,469	-19
131	Sao Tome and Principe	0,651	65,4	87,9	68,1	1,638	0,673	0,813	0,467	17
147	Kenya	0,541	53,6	73,6	59,6	1,542	0,477	0,69	0,457	2
156	Lesotho	0,514	44,9	82,2	61,5	1,541	0,332	0,753	0,457	-6
175	Chad	0,392	48,6	31,8	36,5	1,477	0,393	0,334	0,449	-24
164	Zambia	0,481	44,5	70,6	63,3	1,358	0,326	0,682	0,435	-12
152	Ghana	0,526	56,5	65	56,5	1,334	0,525	0,622	0,432	1
161	Benin	0,492	61	40,5	52,4	1,312	0,601	0,445	0,43	-7
146	Bangladesh	0,543	65,7	53,5	52,1	1,241	0,678	0,53	0,42	9
168	Gambia	0,456	55,7	42,5	46,8	1,225	0,511	0,439	0,418	-12
151	Tanzania (United Republic of)	0,53	55	72,3	57,3	1,208	0,5	0,673	0,416	6
149	Haiti	0,532	61	62,1	52,1	1,155	0,6	0,588	0,408	9
139	Comoros	0,576	64,9	75,1	46,4	1,143	0,666	0,655	0,407	20
170	Guinea	0,435	57,3	29,5	49,3	1,14	0,538	0,361	0,406	-10
177	Burkina Faso	0,389	52,7	28,7	32,8	1,124	0,462	0,301	0,404	-16
178	Mali	0,371	48,1	26,2	46,9	1,083	0,385	0,331	0,398	-16
157	Uganda	0,514	51,9	73,6	62,3	1,059	0,449	0,698	0,394	6
181	Afghanistan	0,352	43,6	28	50,1	1,054	0,31	0,354	0,393	-17
144	Nepal	0,553	66,3	56,5	60,8	1,049	0,688	0,579	0,392	21

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TEZE BAKALÁŘSKÉ PRÁCE

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Předpokládaný název BP:

The gross domestic product as a welfare index

Charakteristika tématu, současný stav poznání, případné zvláštní metody zpracování tématu:

Abstract:

This bachelor thesis is aimed to describe the impact of gross domestic product (GDP) to a human live and its possible improvements as a welfare index.

The beginning of the thesis is devoted to a brief description of the GDP, methodologies used to its computation and comparison of these methodologies throughout the word. The second part deals with problems of multiple methodologies used for computing GDP index and a question of its unification. The core of this thesis is in discloser of an incidence of GDP on human life in comparison to standards of living. In the end of the work the author is trying to collect and provide possible correction and improvement of the index as a welfare indicator.

Struktura BP:

Outline:

- Brief definition of the GDP
    - In Czech Republic
    - In other countries
- Comparison of methodologies for computing the GDP throughout the world
- Is it desirable to unite the methodologies?
    - Pros
    - Cons
    - How to unite
- Real meaning of the GDP for a human being
    - Drive for a progression
    - "Obsession" of growth
    - Desirability and sustainability of growth
    - Growth of the economy vs. improvement of living standards
        - Does change in the GDP imply change in a standard of living?
    - The importance of the GDP in periods of crisis
        - Implication of drop in the GDP for the real life
- Possible corrections and improvements of GDP as a "welfare index"
    - Existing critique of current GDP
    - GDP alternatives
    - Corrections and proposals for improvements of the index

Seznam základních pramenů a odborné literatury:

- Mankiw, N. Gregory. *Brief principles of macroeconomics*. 3rd ed. Mason (OH): South-Western, 2004.
- Vít J. *Tvorba HDP*. aktualizace 5.12.2005, URL: <http://www.blisty.cz/art/25997.html>.
The Genuine Progress Indicator: Summary of Data and Methodology, Redefining Progress C1995.
- Edvinsson, R. *Growth, Accumulation, Crisis: With New Macroeconomic Data for Sweden 1800-2000.* Stockholm: Acta Universitatis Stockholmiensis, 2005.
- United Nations Statistical Commission, Economic Commission for Europe (Geneva). *International comparison of gross domestic product in Europe 1990: results of the European comparison programme / United Nations Statistical Commission and Economic Commission for Europe.* London, GB : Routledge, 1996.

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