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**Comparative Analysis of Different Methods  
to Measure Welfare Beyond GDP for Romania**

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**Abstract**

*GPD is a benchmark for measuring macroeconomic activity since 1930s (Kuznets, 1930) and policy makers use it around the world. The main benefit of using GDP is that it ensures comparability in time and space having a good and transparent definition framework, but the pain point is that is not reflecting the changes that have taken place over time. For instance, although developed countries are richer, they are facing unprecedented social and ideological situations, which is why the result of GDP has begun to be questioned. The idea that GDP was created to facilitate fiscal policies, and not the real measurement of well-being, has begun to take shape since. Beyond GDP (Stiglitz et al., 2010; OECD, 2011) initiative taken at European level is the proof that researchers are analysing the development of new indicators to reflect social and environmental aspects as well.*

*The COVID-19 pandemic came as a tsunami to prove that the most important decision for a society is to put at the heart basic human needs when public policies are created. Not just economic growth reflects the progress, but the social implications, environment and happiness of the people.*

*The aim of this research is to present alternative indicators of well-being measurement and to compare them with GDP.*

**Keywords:** Beyond GDP, Well-being, Sustainability, Indicators, Social sciences.

**JEL Classification:** I31, I32, O11, O49, Q56.

**1. Introduction**

GDP is an exhaustive indicator that shows the total market monetary value of all services and goods produced within a country's territory during a certain period. It can be considered a proxy for measurable well-being. The indicator is widely used and lies on top of the System of National Accounts and its definition framework

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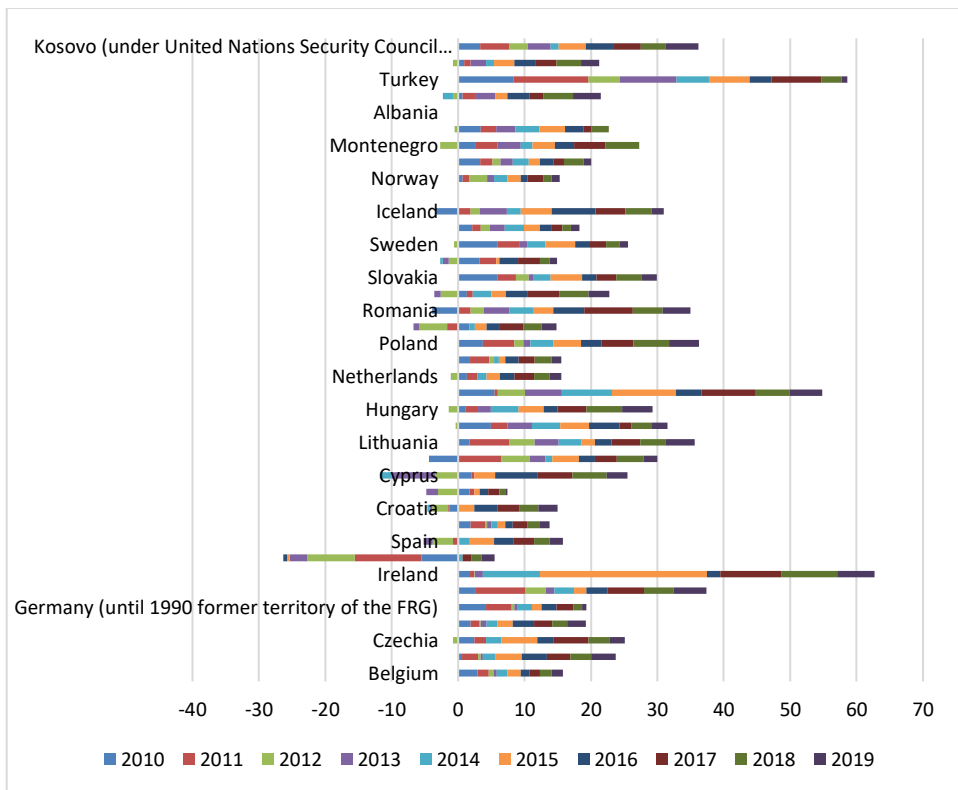
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is rigorously standardized, being used for international comparison (Wesselink et al., 2007).

Starting from the fact that a rich economy also involves a high value for GDP, recent weak productivity growth explores measurement issues (Dynam, Sheiner, 2018). The GDP receives many critiques and the main limitations of GDP such as environment quality, individual well-being, black market, health and life expectancy or political freedom were analysed by economists such as Nobel Prize laureates (Freimann, 2016; Giannetti et al., 2014).

In Europe, by analysing the evolution of GDP/capita, we notice that there is a decrease in recent years in countries such as Romania, Switzerland, UK, Finland, Sweden, Austria, and Germany. At the other end of the spectrum, with slight increases in 2019 compared to 2018, are Bulgaria, Estonia, and Lithuania.



**Figure 1. Evolution of Gross Domestic Product in European Union countries over the last 10 years**

*Source: Eurostat.*

Are those figures correctly reflecting welfare and progress? In this paper, the focus is to present existing frameworks for measuring progress by capturing also other dimensions like social and environmental health. Based on existing

enriched indicators they are analysed in a comparative way with GDP and results are discussed.

## **2. Problem Statement**

Part of GDP limitations is well known and part is also being discovered. The best way to mitigate them is to build an inclusive welfare framework. Research on this type of framework is extensive including approaches such as sustainable development (United Nations, 1987), capabilities (Arrow et al., 2004) and happiness (Layard, 2005). The common point for all those approaches is extending the financial overview provided by GDP with social and environmental indicators.

Talberth and Bohara (2006) develop models of GDP increase by checking the gaps between traditional and enhanced green GDP.

Van den Bergh (2007) points out to the fact that currently GDP is focused more on current economic activity and not on long term factors like social and environmental assets.

Di Tella and MacCulloch (2008) find that happiness is correlated with the level of income.

Michaelson et al. (2009) describe that the progress for a modern society is reflected in well-being, higher living standards and not just economic development and for Dasgupta (2009) GDP is the most common used macro-indicator to quantify the value of production.

Stiglitz et al. (2010) reinforce the fact that GDP is not completely wrong, but it is wrongly used because it measures only partial economic activity.

In 2009, the European Commission released the policy paper “GDP and beyond: measuring progress in a changing world”<sup>3</sup>, with a focus on five key actions: completing GDP and extending National Accounts with environmental and social indicators, accurate reporting regarding inequalities, real-time data and developing a scoreboard for sustainable development.

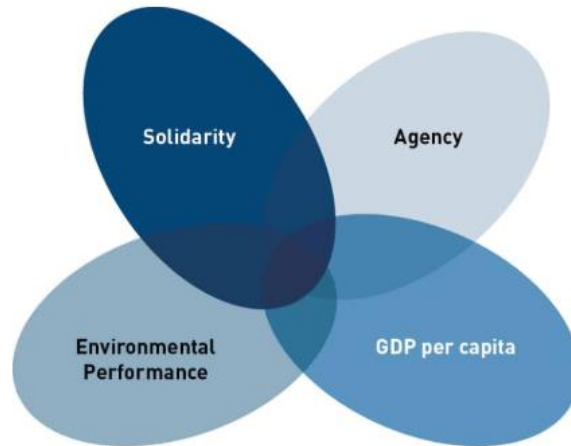
Maxton (2011) challenges the concept of progress pointing out that the economic progress is not a real one as it is expressed more using quantitative indicators whereas their basis cannot be fully measured because there is also a subjective component.

Beyond GDP, there is a belief in specialized analysis that governments through their authority must provide the preconditions for people to be happy (Bormans., 2019).

Snower and Miranda (2020) find that decoupling financial prosperity from social welfare and environmental health is the main cause of the renaissance of nationalism accompanied by politicians' attacks on globalization and multilateralism. The Recoupling Dashboard is a new model for measuring people's well-being, which goes beyond a country's GDP. The purpose of the model is to solve what its researchers claim is a misunderstanding of the factors that influence the well-being of people as a whole.

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<sup>3</sup> EU Commission (2009), GDP and beyond: measuring progress in a changing world, COM (2009) 433 (2009).



**Figure 2. SAGE model dimensions**

Source: Miranda K., Dennis Snower, Recoupling Economic and Social Prosperity.

### 3. Aims of the Research

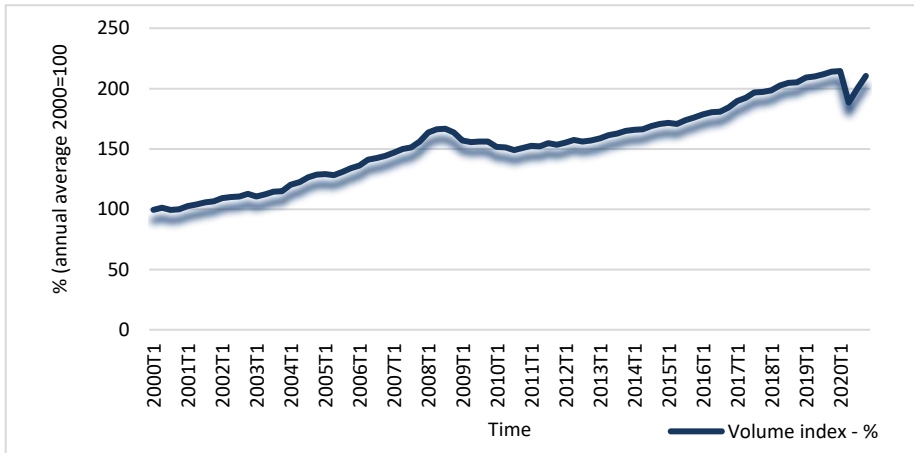
Now, the question is: how can other macro-indicators cover GDP limitation and how big are the differences between those indicators? For researchers, in order to be able to develop new frameworks for welfare measurement it is essential to understand how the existing ones are defined. The analysis focused on the following points:

1. What is progress or welfare?
2. What indicators should be added in the framework to capture progress? Or what are the dimensions included in the indicator composition?
3. Are the indicators reflecting objective or subjective aspects of welfare?

How was the evolution for Romania in last decade regarding GDP comparing with other indicators that also reflect other dimensions than the financial one?

### 4. Research Methods

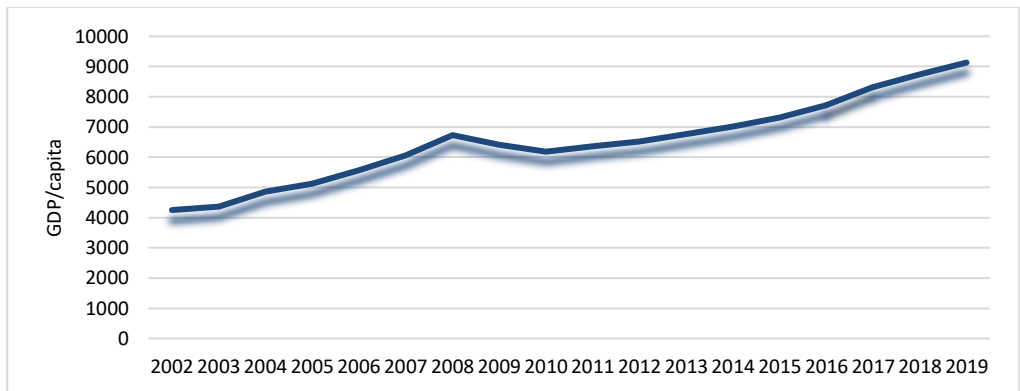
Based on INSSE data, in Romania the pandemic of 2020 brought a decrease in GDP by 3.9% compared to 2019. According to the seasonally adjusted series, in the last quarter of 2020 compared to the same quarter of 2019, GDP decreased by 1.7%. According to seasonal adjustments, in the third quarter of 2019, compared to the previous quarter, GDP increased by 0.6%. Compared to the same quarter of 2018, GDP increased by 3.2%. As a general conclusion analysing the GDP values, starting with 2017 there were slight decreases in values, the most visible being in 2020, most likely due to the global health crisis.



**Figure 3. GDP evolution in Romania 2000-2020**

Source: INSSE.

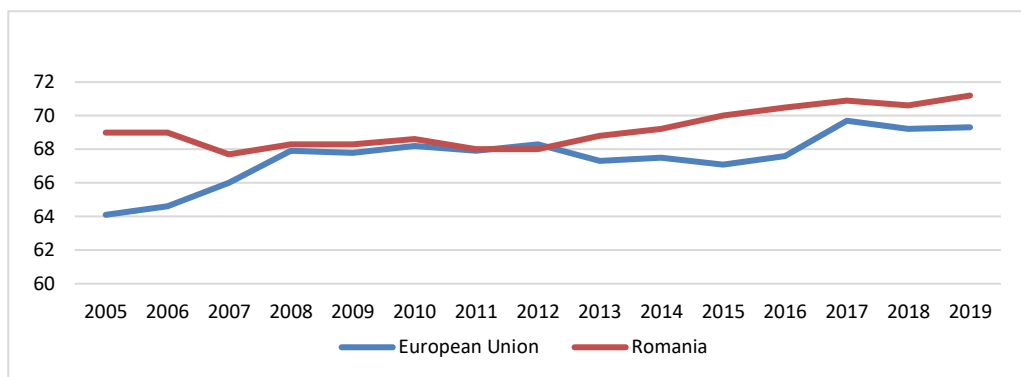
In practice, GDP per capita is one of the most widely used measures of well-being in a country. Comparisons between states with different currencies are made using an exchange rate calculated according to the prices of consumer baskets in the two countries (exchange rate at purchasing power parity), thus avoiding differences in comparison, caused by exchange rate fluctuations.



**Figure 4. GDP/capita evolution in Romania 2002-2019**

Source: INSSE.

In terms of evolution, based on the data for Romania, there has been a positive trend towards growth. Comparing with other indicators that are part of the Sustainable development framework, for instance, with the share of people with good and very good perceived health by sex, we have notice that the trend is as well positive, and compared with the average of European Union countries, Romania's growth is slightly better.



**Figure 5. Share of people with good or very good perceived health by sex (%)**

Source: Eurostat.

In 2016, according to the Happy Planet Index, Romania scored 28.8 and ranked 55th in the profiled countries.

$$HPI = \frac{Well-being \times Life\ expectancy \times Inequality}{Ecological\ footprint}, \tag{1}$$

where:

*Well-being*: represents the satisfaction level about life overall at individual level.

*Life expectancy*: is the average number of years an individual is expected to live.

*Inequality*: shows the percentage for the discrepancies between individuals within a specific country in terms of well-being and life expectancy.

*Ecological footprint*: represents the impact for each individual on the environment, measured in global hectares (gha)/ person.

The component dimensions taken into account for the analysis are (see equation 1): life expectancy (74.3), wellbeing (5.2/10), ecological footprint (2.7 gha/person) and inequality (19%). Over the time, all the components for this indicator have gone through significant improvement. At European level, top positions are occupied by Switzerland (7.8), Norway (7.7) and Iceland (7.6), all of them with HPI values higher than the global average for this indicator, which is 5.4.

**Table 1. Happy Planet Index Evolution for Romania**

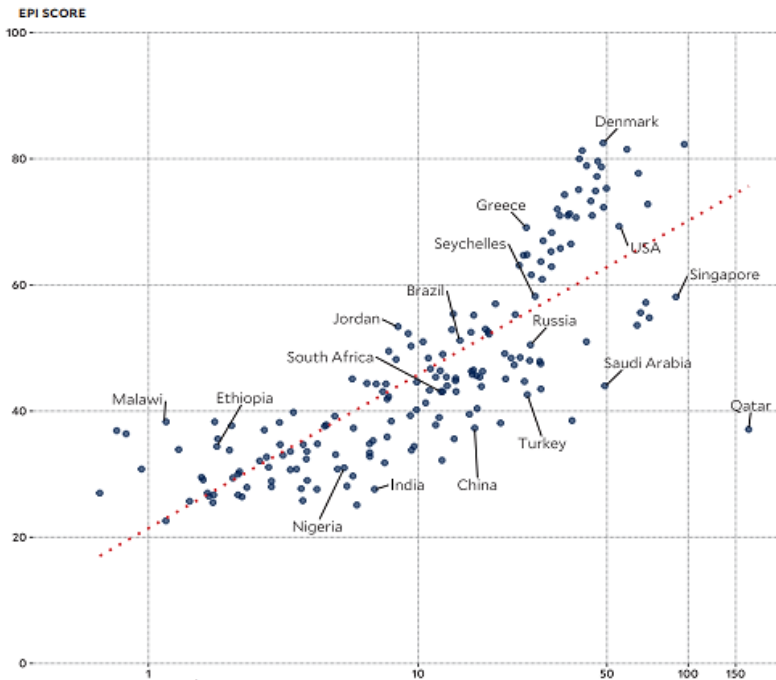
HPI			Life Expectancy			Life Satisfaction			Ecological Footprint		
1990	2000	2005	1990	2000	2005	1990	2000	2005	1990	2000	2005
36.0	42.9	43.9	69.9	71.3	71.9	6.1	5.3	5.9	4.2	2.3	2.9

Source: <http://happyplanetindex.org/>.

Observing that the ecological footprint had a significant decrease, there is another indicator that might explain the impact on the environment.

Environmental Performance Index offers an overview about sustainability. Methodologically, this indicator uses 32 performance indicators from more than 10 categories of issues, covering 180 countries, for which is calculated. For the

Environmental Performance Index, Romania ranked 32 with a score of 64.7 and a 10-year change of 8.1.



**Figure 6. GDP/capita 2020**

Source: <https://epi.yale.edu/>.

There is a positive correlation between GDP/capita and Environmental Performance Index and our country, just like the majority of European countries, is positioned on top. In Europe the first place is occupied by Denmark.

## 5. Findings

To conclude, GDP is no longer a relevant indicator in terms of capturing the high-level aspect of progress. Definition for progress is different for each country, including particularities as religion, values, quality of life. GDP should be enriched with social and environment indicators in order to ensure the sustainable development.

Also, in order to be able to properly answer to current challenges like COVID-19 pandemic, it is important to have flexible indicators and to easily measure the impact. Also, those challenges can be seen as opportunities to develop new indicators by promoting actions to protect the environment, digitalization and consolidate system weaknesses.

In our experiment, the results for Romania are good, and by comparing them with the results of other countries we can notice a positive trend towards sustainability.

## 6. Conclusions

Well-being or progress can be expressed with statistical indicators so we can see the evolution over time. This evolution is easily observed with objective or quantitative statistical indicators. Actual calculation of GDP has multiple critics because this widely used indicator does not capture black market activities or life elements that matter, such as well-being and sustainable development. In this context, multiple research projects were developed and it is on the public agenda of politicians from multiple countries, to develop additional indicators that might better capture progress than GDP. Methodologies for computing them and frameworks to ensure comparability over different countries and time are under development and enrichment.

In this paper, different indicators were analysed in comparison to GDP. For instance, Happy Planet Index captures better than GDP the personal well-being of individuals, whereas the Environmental Performance Index shows the health of the environment in terms of sustainable development. At European level, Romania is well positioned regarding GDP, and has an ascendant trend in terms of progress from economic, social and environmental angle.

Taking into account the results obtained, it might be useful to extend the analysis by including a subjective approach for well-being. This research should have a totally different methodology, and represents a limitation of the paper.

As a future research, one topic might be to evaluate the implications of COVID-19 in the GDP calculation and to see which industry was most impacted. Based on the complexity of the macroeconomic systems it will be interesting to extend both the analysis method with multidimensional statistical analysis techniques with multiple indicators from different social and environment areas, but also to include empirical research about people's happiness. The main goal would be to compare the analysis results based on different indicators, both subjective and objective.

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## Appendix

### Annex 1. Happy Planet Index – Well-being component

Rank	HPI Well-being	
1	Switzerland	7.8
2	Norway	7.7
3	Iceland	7.6
4	Sweden	7.6
5	Netherlands	7.5
6	Denmark	7.5
7	Finland	7.4
<b>Global average</b>		<b>5.4</b>
138	Syria	3.2
139	Benin	3.2
140	Togo	2.9