TÉCNICO LISBOA

Economics

GDP

Why this metric is becoming obsolete

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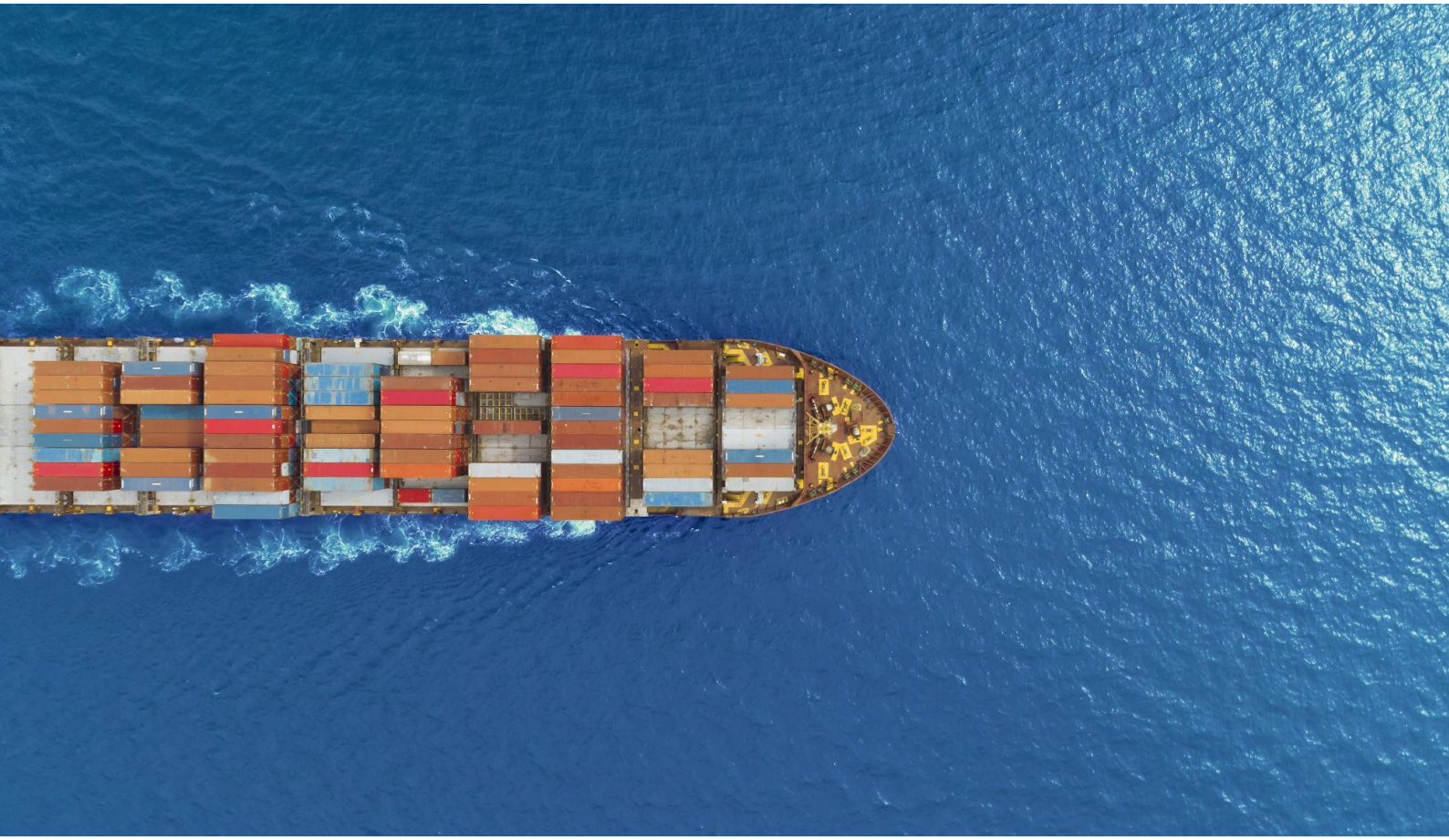

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1. Abstract

With the purpose of analysing GDP's role in today's society, as well as its limitations and why it may be an obsolete indicator to measure well-being, research was conducted regarding what exactly GDP stands for, what information it holds regarding a country's economic status and what dimensions it includes in its analysis. Moreover, GDP's limitations were inspected in detail, so GDP could be compared to five possible alternative indexes that were handpicked according to relevance and distinction of perspectives. The very trendy topic of economic degrowth was also deeply analysed, in order to explore how we may deconstruct this metric. As a result, it was concluded that, while GDP may not be intrinsically harmful or incorrect, it measures only partial economic activities and does not take externalities into account, with other well-being indicators being needed to assess the other significant dimensions of human development.

2. Introduction

The Gross Domestic Product (GDP) is one of the most widely used measures of an economy's output or production. It is defined as the total value of goods and services produced within a country's borders in a specific time period. It has been used worldwide by economists and politicians to evaluate a nation's wealth.

One of the reasons for our group to choose to write about the GDP is due to its importance in the modern economy and its relevance on today's world. However, what really got us interested is the growing distrust in GDP as a measure of well-being and development of a country, due to its obvious limitations in all dimensions except the economical one. Since a nation is multidimensional and much more than its produced income, and it can be argued that new generations do not identify with a purely economical-centered government, we thought it would be of interest to explore GDP's limitations and possible alternatives, as well as what the future may hold for this measure.

3. Understanding the concept

3.1 Origin and history over the years

GDP is most commonly used to measure economic activity. The first basic concept of GDP was invented at the end of the 18th century. The modern concept was developed by the American economist Simon Kuznets in 1934 and adopted as the main measure of a country's economy at the Bretton Woods conference in 1944.

Out of the destruction of the Great Depression and World War II rose the idea of gross domestic product, or GDP: the ultimate measure of a country's overall welfare, a window into an economy's soul, the statistic to end all statistics. Its use spread very quickly, becoming the defining indicator of the last century. But in today's globalized world, it is increasingly apparent that this Nobel-winning metric is too narrow for these troubled economic times. [1]

3.2 Formula and Components

The four components of gross domestic product are personal consumption, business investment, government spending, and net exports. That tells you what a country is good at producing. GDP is the country's total economic output for each year. It is equivalent to what is being spent in that economy. The only exception is the shadow or black economy.

GDP Formula

The formula to calculate the components of GDP is Y = C + I + G + NX. That stands for: GDP = Consumption + Investment + Government + Net Exports
C – Personal Consumption Expenditures
Personal consumption expenditures include:
Durable goods – cars, furniture, large appliances.
Non-durable goods – clothing, food, fuel.
Services – banking, health care, education

I – Business Investment

The business investment includes purchases that companies make to produce consumer goods. But not every purchase is counted. If a purchase only replaces an existing item, then it does not add to GDP and is not counted. Purchases must go toward creating new consumer goods to be counted.

G – Government Spending

Government spending covers a range of services provided by the government. When the government spends more money than it receives in taxes each year, it runs a budget deficit. On the other hand, when the government receives more money in taxes than it spends in a year, it runs a budget surplus. If government spending and taxes are equal, it is said to have a balanced budget.

NX – Net Exports of Goods and Services

Net exports are a measure of a nation's total trade. The formula for net exports is a simple one: The value of a nation's total export goods and services minus the value of all the goods and services it imports equals its net exports. A nation that has positive net exports enjoys a trade excess, while negative net exports mean the nation has a trade deficit. A nation's net exports are thus a component of its overall balance of trade. [1]

3.3 Nominal and Real GDP

Nominal GDP

The nominal GDP is the value of all the final goods and services that an economy produced during a given year. It is calculated by using the prices that are current in the year in which the output is produced. In economics, a nominal value is expressed in monetary terms. For example, a nominal value can change due to changes in quantity and price. The nominal GDP takes into account all of the changes that occurred for all goods and services produced during a given year. If prices change from one period to the next and the output does not change, the nominal GDP will change even though the output remains constant.

Real GDP

The real GDP is the total value of all the final goods and services that an economy produces during a given year, accounting for inflation. It is calculated using the prices of a selected base year. To calculate Real GDP, we must determine how much GDP has been changed by inflation since the base year and divide out the inflation each year. Real GDP, therefore, accounts for the fact that if prices change but output doesn't, nominal GDP will change.

In economics, real value is not influenced by changes in price, it is only impacted by changes in quantity. Real values measure the purchasing power net of any price changes over time. The real GDP determines the purchasing power net of price changes for a given year. Real GDP accounts for inflation and deflation. It transforms the money-value measure, nominal GDP, into an index for quantity of total output.

GDP Deflator

The GDP deflator is a price index that measures inflation or deflation in an economy by calculating a ratio of nominal GDP to real GDP. The GDP deflator (implicit price deflator for GDP) is a measure of the level of prices of all new, domestically produced, final goods and services in an economy. It is a price index that measures price inflation or deflation and is calculated using nominal GDP and real GDP.

$$GDP\ deflator = \frac{Nominal\ GDP}{Real\ GDP} \times 100$$

Nominal GDP, or unadjusted GDP, is the market value of all final goods produced in a geographical region, usually a country. That market value depends on the quantities of goods and services produced and their respective prices.

3.4 Growth Rate

The economic growth rate is used to measure the growth of an economy, usually in terms of its output or gross domestic product (GDP). GDP measures the value of all goods and services produced by an economy over a certain period of time. By measuring GDP over time, the growth rate of GDP can be determined.
For a developed economy, an annual GDP growth rate of 2%-3% is considered normal. Therefore, any GDP growth above the said rate is a strong sign that an economy is expanding and prospering.
A prospering economy creates more wealth, which leads to increased spending. Businesses generate more revenues, resulting in the hiring of more workers who end up spending more in a virtuous cycle. In contrast, if GDP growth is below 2% or is negative, it can indicate that an economy is entering into a recession.
A recession is when GDP declines for consecutive periods. A recession is usually bad for market economies since it is a sign that there is less wealth, which leads to less spending as people are more conscious of saving money. The decline in spending, in turn, leads to reduced business earnings, and such businesses may lay off workers, who spend even less in a vicious cycle. [2]

$$Economic\ Growth = \frac{GDP_2 - GDP_1}{GDP_1}$$

3.5 Relation between CPI and GDP deflator

Like the GDP deflator, the Consumer Price Index (CPI), is a measure of price inflation/deflation with regard to a specific base year. Similar to the CPI, the GDP deflator of the base year itself is equal to 100. Unlike the CPI, the GDP deflator is not based on a fixed basket of goods and services; the "basket" for the GDP deflator is allowed to change from year to year with people's consumption and investment patterns. However, trends in the GDP deflator will be similar to trends in the CPI. [3]

3.6 Okun's Law

Okun's law describes one of the most famous empirical relationships in macroeconomics, it measures the correlation between the deviation of the unemployment rate from its natural rate and the deviation of output growth from its potential. Proposed by economist Arthur Okun in 1962, it basically states that if GDP grows rapidly the unemployment rate declines, if growth is very low or negative the unemployment rate rises, and if growth equals potential the unemployment rate remains unchanged. Considerable debate and disagreement take place about how close and stable a relationship these factors have under Okun's law. However, over the past two years, Okun's law has held up reasonably well—growth has been close to many estimates of potential and the unemployment rate, on balance, has not declined much since the end of the last recession. [1]

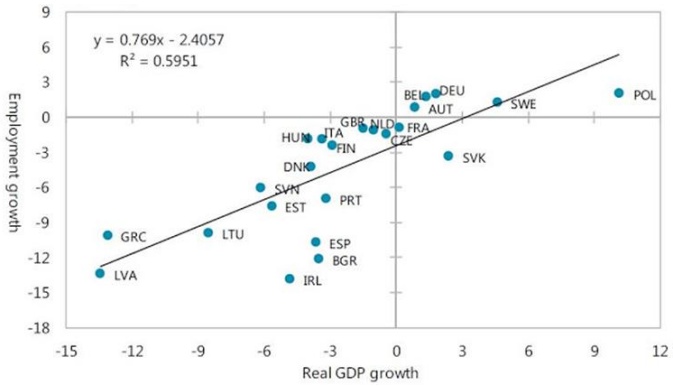

Figure 1 - Okun's Law during the Great Recession through 2008-2011

3.7 Pros of GDP

The GDP is a wide indicator of a country's overall development, making it easy to measure growth. Since the data is easy to collect and simple to formulate, the GDP can serve as an instant indicator of whether economic policies are working or hurting. It is comparable to a glimpse of everything that has happened in the last three months.

Economists and the business media like to depend on the GDP because it can be split into several sub-
assets. It is calculated by dividing a company's operating profit by its total assets. [8]

In the years when R*eturn On Assets* increased, it may indicate that the companies were doing a good job in increasing their profits. On the other hand, the decline means that the companies had invested excessively in assets that did not generate revenue growth in this year.

Simplicity

"GDP was not intended to be a measure of well-being" (Dimas, 2009). It is an aggregate measure of output, measuring the consumption of goods and services sold on established markets. Comparing cross-country data can indicate human welfare distribution. In addition, it is often used to rank countries in order to issue aid payments. This helps policy makers and analysts to guide, adjust and implement economic policies which are critical for the development of any nation. More importantly, GDP serves as a barometer of the current business environment sending a clear message to the government and business leaders to adjust different contingency plans which may help the growth of a nation.

Universal

You can use GDP to examine all economies of the world, from the United States to Somalia. No matter if a country is churning out fishing equipment or cars, all of its products have a certain monetary value, which added up gives a universally recognized measure. This measure is especially helpful if you consider how different economies around the world are in terms of the goods and services they produce, and the way they reinvest their income - pay back debts or invest in industry sectors.

GDP per Capita

If you divide GDP by the country's population, then you get GDP per capita - the approximate portion of a country's total output for every resident - which is a way to compare different economies, while considering the size of their work force and available resources. These variables can be misleading; for example, Norway's economy seems tiny compared to the United States, but Norway's 2011 GDP per capita is $96,810, nearly double that of the U.S., according to the International Monetary Fund.

Dynamic

GDP is dynamic: it changes constantly based on new figures on productivity, consumption, and investments. Therefore, economists and decision makers can use GDP to measure an economy's growth or decline. However, they can only do that provided they have an established and accurate mechanism to measure GDP value regularly; without that, they do not have any data to compare whether present activity is worth more or less than in the past. [5]

One may understand liquidity as the ability to quickly convert assets into cash, with little to no loss of value.

4. Limitations of GDP

Before going into detail on the limitations of Gross Domestic Product, it is proposed to reflect on the following sentence – being the GDP an indicator created to assess the production of a nation in times of war, won't it bring disadvantages in times of peace?

Despite the importance and the intensity of its use as a reference for international comparisons and as a benchmark for economic policy measures throughout the world, it has been the object of some criticism by

academics and politicians. Actually, out of curiosity, one of the most well-known articles, and one of the sources used in this paper, is from the French ex-President Nicolas Sarkozy, who created the Commission to Measure Economic Performance and Social Progress.

The misuse of GDP as a measure of public prosperity results from the idea that economic growth is always synonymous with enhanced quality of life. Quality of life is "*the degree to which an individual is healthy, comfortable, and able to participate in or enjoy life events, encompassing emotional, physical, material, and social well-being*" (Britannica). Moreover, conflating these two ideas (economic growth and quality of life) can lead to misleading indications about how well-off people are and entail wrong policy decisions.

There is the prospect that despite not directly measuring those things that make life worthwhile, it measures the ability to obtain the inputs into a worthwhile life. This perspective is easily refuted with countless examples and, throughout this chapter, it is intended to clarify the main limitation of GDP as an instrument to assess economic results and social progress and show why it disregards important levels of society.

1- The first major criticism made is the fact that it considers all expenditures. There is no scope for the positive or negative effect created in the process of production and development, this is, does not discriminate between activities that increase well-being from activities that reduce well-being. For instance, it takes a positive count of the cars produced but does not account for the emissions generated, it includes the creation of large industries but does not discount the vital forests they replace, it adds the value of alcoholic beverages but does not subtract the health problems they cause.
   Even more, expenses incurred with the objective of minimizing the negative impacts caused by crime, pollution and natural disasters are considered positive for growth, which is an error, since they are only preventable or repairable.

2- Secondly, it only includes production that is traded on the market, this is, it ignores a set of activities that do not involve monetary transactions (non-monetary production), such as domestic work, childcare, or voluntary work.
   Every time someone performs household chores, such as washing dishes or taking care of their children, they are contributing to a huge slice of an invisible production that escapes official statistics since there are no transactions in activities for self-consumption, but which, in practice, represent a household income and contribute to their well-being.
   A study published by the German institute IZA tried to measure national production in several European countries and in the Portuguese case, the indications are, respectively, between 14.9% and 19% of the GDP [6].

3- Another topic, related to the same problem in (2), is the fact that GDP does not account for illegal and hidden or under-declared production that is part of the informal economy.
   A study carried out in 2015, stated that, in Portugal, black economy was worth 27.29% of the official GDP, corresponding to 49 billion euros [7].
   Also, relating this to the moment in which we live, it is predictable that due to the pandemic, this type of activities increase, since there is a drop in income for families, companies, and economic agents in general so people will seek for alternative incomes.

4- Additionally, GDP does not represent the level of economic inequality in society, this is, when a disproportionate share of a nation's income is earned by a small minority of households. Actually, many times it camouflages it and, therefore, it does not give an accurate impression of economic and social well-being.
   Saying that the GDP increased by 10% may either indicate that it has increased 10% for all or that it has increased more for some groups and increased less for others (in an extreme situation, may have even decreased).
   In many countries, the trend right now is GDP increasing coupled with increasing inequality levels. Furthermore, most individuals in these countries see little or no increase in their wealth.

To go into more detail, it is possible to see in the tables below the 7 countries with the highest GDP and the highest GDP per capita in 2021, according to International Monetary Fund's estimates. Using the example of India, which is in 6th place in the ranking, this point is reinforced. India, despite having a large GDP, continues to suffer from a low GDP per capita and still has, approximately, 25% of the population living below the poverty line, according to Santander. Also, inequalities are extraordinarily strong (1% of the richest population owns 53% of the country's wealth).
In addition, GDP can lead to other misleading assumptions represented in the following examples – some countries (eg. Luxembourg) have an extremely high GDP per capita, but not a high GDP. This usually happens because they have a small population but have managed to build a self-sufficient economy. However, not forgetting that this does not mean that wealth is divided equally either. Conversely, the United States has the first position when referring to GDP but falls seven places when looking for GDP per capita.
To sum up, these inequalities are clearly impossible to classify using GDP or GDP per capita.

Rank	Country Territory	GDP (US$million)
1	United States	22675271
2	China	16642318
3	Japan	5378136
4	Germany	4319286
5	United Kingdom	3124650
6	India	3049704
7	France	2938271

Rank	Country Territory	GDP (US$million)
1	Luxembourg	122740
2	Singapore	102742
3	Ireland	99239
4	Qatar	97262
5	Switzerland	75880
6	Norway	69171
7	United States	68309

Figure 2- Top 7 countries in the ranking of GDP and GDP per capita

5- At this point, it is reflected in the fact that GDP ignores the environment dimension, not considering whether the country's growth is sustainable or not. It ignores environmental costs, the consequences of exploiting ecosystems and the destruction of environmental wealth. Contradictorily, it includes the costs of environmental remediation as valuable production, as previously stated in (1). Water quality, air pollution, marine biodiversity, ecological footprint, among others are all horizontal determining

factors that directly affect and influence many other basic areas, such as health. From the graph below, it is possible to observe that generally the higher the GDP per capita, the higher the rate of CO2 emissions per capita (Our World In Data - CO_2 emissions per capita vs GDP per capita, 2018).

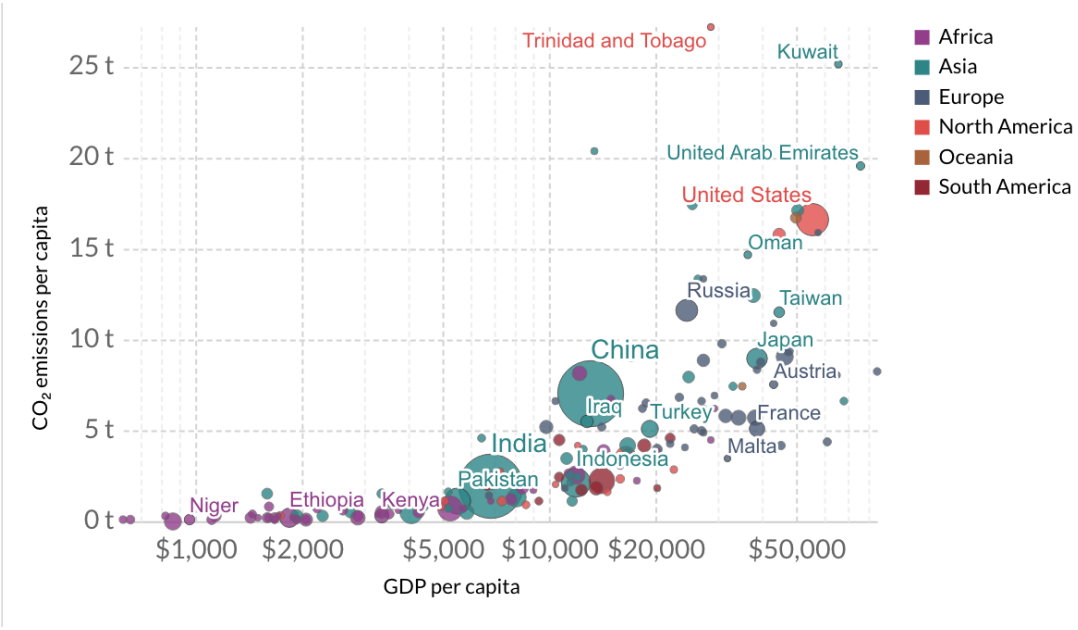

Figure 3 - CO2 emissions per capita vs. GDP per capita [8]

6- Another criticism falls on social factors. Factors such as life expectancy at birth, level of education, health, empowerment of vulnerable groups, quality of employment, amount of free time, crime rates, level of corruption, among others, provide a panoramic view of the personal development of each citizen and allow an assessment of the environment in which they live.

7- Finally, GDP does not reflect specifically on which products are available on the market. A country may not have the variety of products needed by the population for their well-being but produce large quantities of some specific product. With that said, as GDP looks only at the total amount spent and not at the product itself, it is unable to capture important development factors of a country, such as if it is technologically developed and the social well-being enabled by digitization (a crucial area in prosperity and progress of a country).

To conclude, it is vital to understand that GDP is not intrinsically harmful or incorrect, but it measures only partial economic activities and does not take externalities into account.

5. Alternatives to GDP

Upon identifying and analysing GDP's main limitations, a single question remains – are there any other welfare indicators that fill in on what GDP lacks? Are there any other alternatives that can substitute GDP's role as a standard economic indicator?

An adequate alternative to GDP must represent and include certain aspects of economic output that allow for a better estimation of well-being. It must not only consider income, but also equality. Not only growth, but also destruction. It must include environmental damage and its changes [9]. Of course, these are simply some of the elements to look for when analysing other indicators – one indicator alone might not capture all of these

aspects. In an attempt to find an appropriate substitute to GDP, we must analyse a few relevant indexes and work out their advantages and disadvantages.

First off, we have chosen to analyse the **Human Development Index (HDI).** In short, HDI is a non-monetary index that accounts for three different dimensions: **knowledge**, using the literacy rate and school time, since education has been one of the most integral drivers and outcomes of global development; **decent living standards**, using Gross National Income (GNI) per capita adjusted for the price level of the country, and **longevity**, measured by life expectancy at birth, that represents a long and healthy life. This latter one also represents other features, such as health and nutrition habits [10].

On that account, HDI considers both economic and social aspects to measure human development, which is a clear improvement in comparison to GDP, which focuses more on the economic side of things. With HDI, economic power is just as important as education and health, which means that two countries can have similar GDPs and completely different HDIs. This makes it possible for them to understand what are the non-economic issues to be addressed, something that cannot be done using GDP [11].

In most cases, there is an extraordinarily strong correlation between GDP and HDI, following a similar trend, as can be seen in the graph below. In this analysis, GDP per capita is adjusted for price differences between countries and adjusted for inflation to allow comparisons between countries.

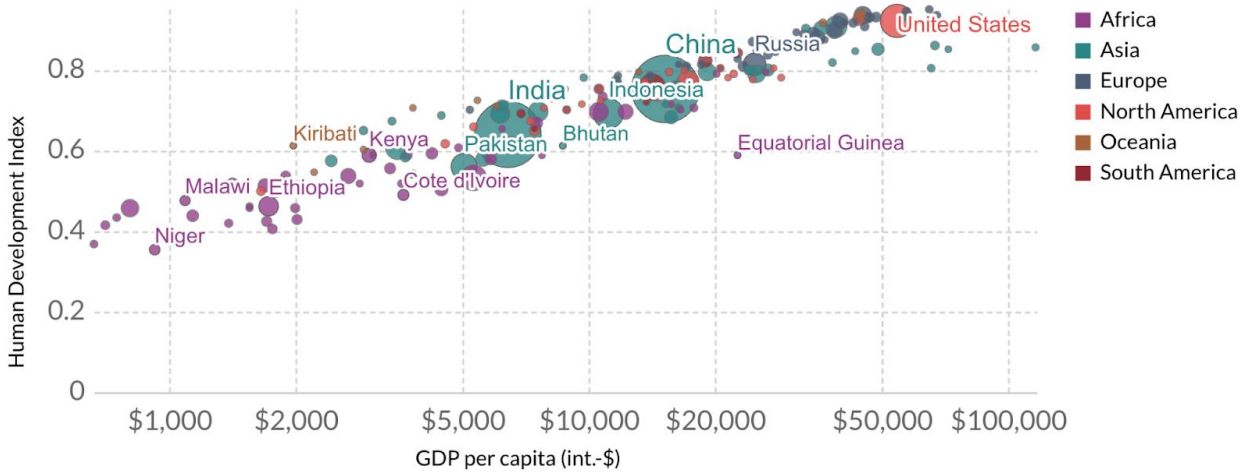

Figure 4 - Human Development Index vs. GDP per capita [12]

This shows that economic growth is somehow connected to a longer lifespan for the people and access to education, and this connection goes in both directions – in countries with higher economic growth, people have more education opportunities and can have the means to take care of themselves, improving health. But the opposite is also true – healthier and educated people have a higher capacity for improving economic growth.

However, there are exceptions to every rule, and examples of this are countries whose oil or diamonds account for most of their revenue such as Qatar, Kuwait and the UAE. These are all top 10 countries in the GDP per capita ranking, which contrasts heavily when looking at the HDI ranking, falling down up to 40 places. This is because even though these countries have exceptional economic growth, they are lacking in other human development components.

The opposite also happens – as can be seen in the graph below, Barbados has a remarkably similar HDI index as Kuwait, even though it ranks 73rd on the GDP index. Moreover, Chile has an even higher HDI index than Kuwait but ranks 56th on the GDP index.

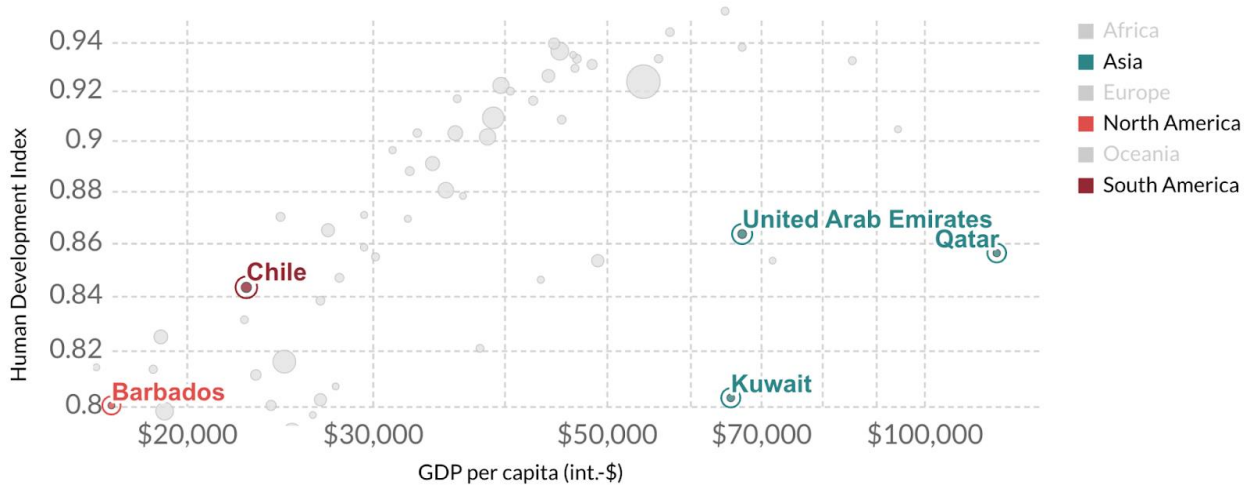

Figure 5 - Human Development Index vs. GDP per capita in selected countries [12]

HDI is especially useful for evaluating changes in developing countries. It does a much better job of capturing what progress is being achieved than GDP, simply because it covers more aspects of life.

However, HDI is still not considered an ideal measure by many. It is missing a few key metrics, such as environmental damage, inequality, and safety, to name a few that are, in our opinion, crucial to evaluate human wellbeing. Moreover, it is not clear whether HDI's formula solves the problem of rich countries ranking extremely high simply because of their wealth, since GNI may still hold a bit too much importance on the overall weighting of the index.

The next relevant index to be analysed is the **Genuine Progress Indicator (GPI),** intended to assess the prosperity of a country, by joining ecological and social variables to the country's economy. It can be regarded as an evolution of the Index of Sustainable Economic Welfare and it nets the positive and negative effects of economic growth of a country to assess the overall benefit for its population [9].

One of GDP's limitations is that it treats crime, divorce, and natural disasters as economic gain, simply because there are money transactions involved. GPI, however, includes negative economic factors and is affected by certain environmental indicators, such as pollution. In a nutshell, GPI looks at the impact economic activity has on the individual and society, and not the impact it has on a bank balance [13]. For instance, if someone's house is robbed, GDP counts this situation as a boost to the economy, since it gives rise to property repairs and legal fees. GPI, though, considers it a cost, since people's lives are damaged and under stress, decreasing their overall quality. Anyone can clearly see that it makes much more sense to consider a disaster such as this as a negative event, when looking from the point-of-view of people's well-being.

Another example is that volunteer work, childcare, and any other type of labour that does not involve money being exchanged accounts for zero in the GDP, even though it can have great importance in society. GPI fixes this by valuing it as a benefit for a growing economy. GPI also accounts for income distribution, rising when the poor receive a larger percentage of national income, and falling when this percentage decreases, as well as for factors such as leisure time and environmental damage.

By considering environmental, social, and economic indicators together, GPI can analyse a country's welfare from more perspectives than GDP. It encourages long-term planning – for instance, while GDP can be increased at the expense of environmental damage, GPI favours a more sustainable growth.

However, it is far from being a perfect indicator. Many of the non-economic variables can be extremely subjective and, since this is a monetary indicator, the monetary value associated with these variables can vary depending on the interpretation. It is, therefore, much harder to calculate than GDP [14]. Moreover, GPI is not widely used and has not been adopted by many countries, making data very inaccessible. This means, for sure, that many advantages and disadvantages of this indicator have not even been discovered yet, for there is not much comparison that can be done in-between countries.

Apart from these two alternatives to GDP, there are many more than can be seen as well-being indicators that assess different factors, to see things from other points of view. For example, if one wants to focus on the environmental consequences, the **Green GDP (or GGDP)** can be used. It monetizes the effects of the loss of biodiversity and the costs of climate change. Putting a price on loss of biodiversity, however, is extremely difficult, which is one of the reasons why this indicator is not used anymore.

There is also the **Gini Coefficient,** a measure of the income distribution of a population, something that is not at all accounted for in the GDP. This index can help countries track poverty levels, while GDP could actually be misleading, especially when increasing.

Yet another alternative is the **Happy Planet Index (HPI),** which factors in inequality, wellbeing, life expectancy and the ecological footprint of a country. It uses a fairly simple formula and tackles various dimensions of wellness. It also dramatically shifts ranking results, for no association between the countries' classification on GDP and HPI was found, proof that this indicator does not reflect the same reality as GDP. For example, while the USA is currently 1st on the GDP ranking, and Costa Rica is 76th, in the HPI index Costa Rica ranks 1st place, while the USA goes down 107 places, ranking at 108th.

HPI is flexible and easily measurable, but it is undoubtedly limited, much like the HDI, for the lack of factors it assesses.

So, are any of these true substitutes to GDP? The truth is, they are all different and focus on widely distinct perspectives on welfare. They can all be useful, but never for the exact same purpose. The five alternatives here presented all go a step forward in comparison to GPD, considering dimensions that GDP lacks in. However, none of them accounts perfectly for measuring quality of life. Most countries still use GDP to assess standards of living and development, since it is of easy access and measurements are so objective. In our opinion, however, rather than seeing this issue as being GDP vs other indexes, we consider that it is useful to assess a country's welfare using more than just one indicator, in order to get a more well-rounded view. Using GDP coupled with one or more additional measures helps to give a better understanding of real economic development.

6. Sustained Degrowth

Deconstructing GDP

As we have seen thus far, GDP has lost most of its popularity as an effective metric to represent the general well-being of a certain population.

Looking at this metric in a new perspective, something as bold as repurposing the very thing it represents - that economic growth must be a synonym of wellbeing - completely shatters all preconceived notions we have used thus far to evaluate a county's development. And it deconstructs the idea that maybe a stagnant or even plummeting GDP is, simply put a good sign. This is exactly what sustained degrowth stands for.

The authors of the article published "Crisis or opportunity? Economic degrowth for social equity and ecological sustainability. Introduction to this special issue" described it best: "The paradigmatic propositions of degrowth are that economic growth is not sustainable and that human progress without economic growth is possible." [19]

Beware, this degrowth is characterized as sustained for good reason, it is not meant to be confused with the unsustained degrowth we witness during economic recessions or depressions, as it happens during unemployment or poverty levels risings. It should also not go on indefinitely, of course, it is rather a transformational cleansing of sorts, in the sense of being environmentally and socially beneficial.

Furthermore, we must not try and apply this methodology to all countries' economies. To imagine economic degrowth in places like Mozambique or Afghanistan, which belong amongst the countries with the lowest GDP per capita in 2020 [20], is unfathomable. But, when we apply this in a European, American, or Japanese context the story is quite different, for economic degrowth would not, in any way, mean an economic or social catastrophe. When we take a developed country that can withstand a crisis without risking the loss of basic human needs, and has an income of over 20.000 euros per capita, even in a period of economic degrowth there is still plenty of room to ensure a smooth transition.

This disruptive approach believes in the downscaling of production and overall consumption, as a way to mend the environmental crisis we are experiencing, thus increasing human welfare at the local and global level, in the short and long term. It is also only meant to be applied in certain economic activities, rather than a general slowing down of production as a whole. It is, not only expected but encouraged, that sustainable activities like shared transport services or the production of renewable energy grow in this period. Thus, it should be accounted only for certain levels of the general production of goods and services, not all.

In fact, even though it is natural for the GDP to drop considering a reduction of the large-scale, resource-exploitation production (that constitutes a large portion of the GDP), truly what happens to the GDP is of secondary importance. It means nothing for the GDP to fall, if not backed up with an increase of initiatives towards the pursuit of well-being, ecological sustainability, and social equity. These sorts of qualitative differences ought to become the priority, for they will not be reflected on the GDP, but rather on other indicators that measure the true quality of life. Hence why this movement disregards the dominant position GDP now has in politics, to the detriment of environmental and social consideration. Straightforwardly, the GDP may decrease, and all other aspects of life improve, so why should this metric continue to have the same imperative importance it holds today?

The opposition of this theory suggests that to go forward with sustainable degrowth means to almost turn back the clock, back in time to a pre-industrialized era, but this is completely false. What proponents of sustainable degrowth advocate, is for us to rewrite the future that most scientists predict will be ours in a near future, should we choose to go on as we have been. Thinks like technological advancements or knowledge progress, are not meant to go backward, they are meant to simply switch direction. They are meant to lead us towards an alternative, brighter, more sustainable future, one we have only been able to witness through the lenses of science fiction movies. The ultimate goal is to channel the technological innovations we are capable of, to envision how to consume less and impose consented limits, rather than use innovation solely to spur reckless consumption.

The remaining question is how to turn sustained degrowth into a democratic and collective decision, rather than representing degrowth imposed on the population during a time of crisis. It would require voluntary ambition and a collective effort in pursuit of ecological sustainability and socio-environmental justice across the globe. Hence why, to strip this movement from its political context is quite a dangerous move, for it can be misinterpreted and misused in the wrong context, it may also be confused for an outrageous, fictional, and

abstract idea, with great motivators but poor planning and execution. Moreover, it may fall under a radical or even religious category. In order to succeed it must be open for public debate, suffer changes through democratic means and ultimately, it must be an endeavour the majority is willing and devoted to take on.

There has already been quite the debate concerning sustained degrowth, and how the general public might approve or disapprove of the idea, bellow we can see some of the contributions shared on the subject:

Jeroen van den Bergh

ICREA Research Professor of Social & Behavioural Sciences, van den Bergh has quite the pessimistic view on the feasibility of voluntary degrowth by the general population. He blames the human's own biology from an evolutionary perspective. In his view, to believe a voluntary altruistic position from the masses is quite an overstatement, as the human is inherently greedy, selfish, and tends to demonstrate competitive tendencies.

Astrid Matthey

Senior Economist Astrid Matthey, questions whether society could ever voluntarily endorse consumption degrowth, using experimental psychological research. She studied the conditions in which this might be acceptable or unacceptable by the general public voluntarily and concluded that to achieve degrowth individuals and industrialized countries alike must accept a reduction of consumption levels. In democratic societies, this must be done under the approval of the majority.

However, she admits that when consumption levels are already remarkably high this may leave the general population in a feeling of loss. As such, to avoid this outcome we must first change the perception that personal fulfilment is measured by material achievements, a belief that was the product of centuries of evolution to reach personal status. Therefore, it will not be so easily torn down.

Clive Hamilton

Professor of Public Ethics at Charles Sturt University in Canberra, Clive Hamilton approaches this matter from a sociological point of view. Somewhat like Astrid Matthey, Clive Hamilton believes overconsumption has escalated from a place of merely satisfying material needs (excluding superfluous needs) to a means of creating and expressing a personal identity, and he mostly blames advertising for that. Marketing creativity has become essential to a product's success, and how to cater to your audience is an art form that has been perfected over time.

The usefulness of a product has been replaced by what it represents, and "growth fetishism" as he called it, goes hand in hand with this logic of market expansion. He then concludes that, to make environmental appeals to change consumption is more complex than what it may seem, for you are not asking a person to change their consumer habits, you are in fact asking them to change their sense of self.

Paris Degrowth Declaration

In April 2008, a conference entitled "Economic De-Growth For Ecological Sustainability And Social Equity" regarding economic degrowth was held in Paris, which represented one of the first major steps to introduce this topic to a broader audience. Ironically, the conference took place right before the economic crisis of 2008/2009 began, and later critics pointed this crisis to be the result of unsustained growth – irresponsible borrowing, a system struggling to keep up with growth rates, the refusal to accept material reality beyond speculation of investors and consumers, the list goes on.

Regardless, the Paris conference was a successful event. For the first time, there was a gathering of relevant and influential people towards the discussion of economic degrowth as a means to a better environment, more equality, and well-being. The result of this conference was the Paris Degrowth Declaration, where it is expressed a general acceptance and understanding of this topic and the weight it holds. [19]

Generally speaking, it was agreed how GDP represents the increase in production, consumption, and investment in the pursuit of economic surplus, which inevitably has resulted in the increased extraction of natural resources and increased waste and emissions. Moreover, global economic growth has not reflected a substantial poverty reduction, in fact, more times than not it contributes to an increase in inequality between counties.

Consequently, it was agreed that a paradigm shift was necessary, from the unlimited pursuit of economic growth to the rightsizing of the global and national economies. This paradigm shift must involve economic degrowth in the wealthiest parts of the world. And progress towards that degrowth must first come from efforts to mainstream this concept into parliamentary, public debate, and economic institutions. [21]

7. Conclusion

After deeply analysing what GDP truly stands for and what information it provides, it can be clearly concluded that this indicator has profound limitations and is not at all an accurate measure of how developed a country is, at least from any point of view apart from the economical one.

However, it can also be seen that no other current alternative truly substitutes GDP's role perfectly as a measure of well-being, always lacking in a way or another. For this reason, our suggestion is that GDP should still be used, as it has its definite advantages, particularly its ease of access, but never alone. GDP should not be perceived as the only measure of a country's development, but simply one of many. Combining GDP with other indexes with different purposes is the better way to truly consider all the multiple dimensions that today's world is made of.

Finally, the concept of degrowth is meant to be larger than a mere scientific project, but rather taken into a broader social movement which feeds on the hope that we may someday be able to downscale in an equitable and democratizing manner.

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