

From Inception to Alternative: A Case of GDP

Received: 13.12.2022
Available online: 31.03.2024

Shashank Vikram Pratap Singh*,
V.K. Shrotrya**

Abstract

GDP became the yardstick for measuring the size of an economy and its level of development after its invention in the 1930s. It is the result of an intellectual battle that began with the Political Arithmetic in 1665 and continued through the Great Depression and World War II. Economic progress has determined the speed of development, according to Clark, Kuznets, Keynes, and Stone, through production, income, and output. It was the great invention of the time in terms of measuring and governing policies for economic progress. However, it is now being misused and even used to measure things for which it was never intended. Furthermore, this laid the groundwork for its place in the twenty-first century. Academics and practitioners, as well as governments around the world, are now attempting to look beyond GDP and focus on developing alternatives. This academic paper attempts to investigate the invention of GDP and various alternatives developed so far worldwide. The paper contributes to the literature on 'Beyond GDP'.

Keywords: Beyond GDP, GDP, History of GDP, Political Economy.

JEL: A12, B10, B31, E00, N00, P16.

1. Introduction

"While the GDP and the rest of the national income accounts may seem to be arcane concepts, they are truly among the great inventions of the twentieth century."

Paul A. Samuelson and William D.
Nordhaus (Nobel Laureate)

GDP (Gross Domestic Product) is the most popular and widely followed statistical indicator in matrix history. It is the world's most widely used statistical indicator. Long-standing intellectual battles of thought (which began in the seventeenth century) and standardisation in its calculation methodology allow it to be regarded as the most acceptable indicator for measuring economic activity. The larger communities (including influential international organisations such as ADB, IMF, and WB) were forced to accept it as gospel indicators for measuring policy success as a result of the great depression and world wars. It measures market production, which can only be valued in monetary terms (Kubiszewski et al., 2013; Banerjee & Duflo, 2019). Banerjee and Duflo (2019; p. 153) wrote: *"GDP values only those things priced and marketed."* Monetary valuation of goods and services aids in aggregating the quantities

* Dr. Shashank Vikram Pratap Singh, Assistant Professor, Shri Ram College of Commerce, University of Delhi, New Delhi, India

** Prof. V.K. Shrotrya, Senior Professor, Department of Commerce, Delhi School of Economics, University of Delhi, New Delhi, India.

of various goods with varying nature into a single number. Because of its evenness, it can play a more significant role in society. It allows us to aggregate quantities consumed by a society into a single number that reflects the overall standard of living of a society or country (Stiglitz, Sen, & Fitoussi, 2009, 2010).

GDP measures final purchases by households, businesses, and governments by adding consumption, investment, government spending, and net export. It is calculated by totalling the final value of all goods and services produced and traded for money within a given domestic territory and time period. Technically, it is calculated by adding a country's consumption expenditure (payments made by households for goods and services), government expenditure (public spending on infrastructure, debt repayment, and other things), capital formation, and net export (export-import, X-M), i.e., $Y = C + I + G + (X - M)$ (Keynes & Rothbarth, 1939).

With the invention of GDP, the larger communities get unprecedented benefits in every economic and non-economic aspect¹. As a result, we can answer specific critical questions such as whether a country has the fastest growing economy or not. Has China's economy surpassed that of the United States? Will India's economy overtake China's in the coming years? Is Ghana a poor country? What is the state of a country's economy? What is the distribution and composition of a country's economic system? How should income be used to combat poverty, illiteracy, and people's overall life satisfaction/happiness? Many

other questions can be answered using GDP. However, while the answers to these questions may appear straightforward and based on a single value, they do not accurately reflect the true state of social and national progress (which is referred to as Human wellbeing/happiness/ quality of life/ life satisfaction). We must ask whether it represents social welfare/wellbeing and the overall holistic progress of nations. In the current context, it is difficult to obtain a satisfactory answer as to whether GDP truly reflects social development or holistic development (Shrotryia & Singh, 2020). This is what prompts social scientists, environmentalists, and academic thinkers to question this indicator and seek a more convincing and viable indicator or set of indicators. This laid the groundwork for its place in the twenty-first century.

2. Method

To set the solid cornerstone for the theoretical perspective, we have extensively searched academic writings using the Scopus database. When searching by "income and happiness" with 'article title, abstract and keywords, the Scopus database shows 82 documents without any limits to time periods. Despite the fact that the Scopus database has had papers with this title since 1970s. When searching with only 'article title,' it shows 23 documents. When further searched with "economic growth and happiness" it shows six documents without any limits to time periods. While searching by "beyond GDP" with 'article title, abstract and keywords, it

¹ The 21st century has witnessed unprecedented improvement in living standards almost everywhere in the world. The economic wellbeing, measured by GDP per capita, doubled in the poor countries. Child mortality has halved relative to 1990s, and the proportion of children attending school has increased from 56 percent to 80 percent globally. People with low human development fell from 3 billion to 926 million or 60 percent of the world population to 12 percent of the population; people with high and very high human development rise from 1.3 billion to 3.8 billion or 24 percent of the global to 51 percent of the population. (Data taken from UNDP data source).

Articles

shows 139 documents, and when limited by title only, it is reduced to 48 documents. The Scopus database has had papers with this title since 1987. When limited by 'India', the database shows zero documents. Using 'article title, abstract and keywords' when searching "alternative to GDP", the database shows 22 documents.

Considering the nature of GDP, there is obviously less scope for progressive research papers on thematic understanding. Therefore, all the papers have been thoroughly scanned

with both micro and macro perspectives (see Table 1) The context of the theoretical perspective has been developed using the thematic principle of L&R.

3. Inception of GDP

The intellectual conversation for precisely measuring government policies' effectiveness through the prism of a statistical index started in the early part of the twentieth century (Carson, 1975; Mitra-kahn, 2011; Karabell, 2014; Coyle, 2014; Lapenies, 2016). However,

Table 1. Summary of Important Papers

Invention of GDP	Carson, 1975; Mitra-khan, 2011; Coyle, 2014; Lapenies, 2016; Karabell, 2014; Bos, 2006; Petty, 1676; Kendrick, 1970; Gilbert, 1942, 1943; Heckscher, 1994; McClusker, 2001; Smith, 1776; Marshal, 1890; Tily, 2009; Clark, 1932; Kuznets, 1934, 1941; Fogel et al., 2013; Keynes, 1936; Landefeld, 2000; Krueger, 2003; Marcuss and Kane, 2007;
Criticism of GDP	
Nobel Laureates	Kuznets, 1934, 1941; Hicks, 1940; Arrow, 1995; Nordhaus and Tobin, 1972; Kahneman and Deaton, 2010; Samuelson, 1961; Stiglitz, 2005, 2010; Sen, 1976, 1979; Banerjee and Duflo, 2019.
Political Leaders	Kennedy, 1968; Wangchuck, 1972; Thinley, 1999; Sarkozy, 2007; Kamron, Obama, Kalam, 2012; Mukherjee, 2019.
Social welfare and Human wellbeing/happiness/life satisfaction	Easterlin, 1974, 1995, 2001, 2005, 2010, 2013, 2015; Easterlin & Schaeffer, 1999; MaxNeef, 1995; Myners and Diener, 1995; Diener and Biswas-Diener, 2002; Layard, 2006; Talberth et al., 2007; Helliwell, 2003; Helliwell et al., 2003; Stutzer, 2004; Frey and Stutzer, 1990, 2000, 2001; Diener et al., 2013; Diener and Oishi, 2000; Diener & Seligman, 2004; Kahneman et al., 2006; Sacks et al., 2012; Blanchflower and Oswald, 2000, 2004; Andrew, 1991; Argyle, 1989; Diener, 1984; Jobbs et al., 2018, Helliwell, Layrad and Sachs, 2012, 2013, 2015, 2016, 2017, 2018, 2019.
Environmental concern	Jackson, 2009, 2006; Cobb et al., 1999; Ahmad et al., 1989; Arrow et al., 1996; Daly, 1977, 1990; Daly et al., 2014; Dasgupta, 2010; Lawn and Clarke, 2010; Hamilton and Clemens, 1999; Jeffrey, Wheatley and Abdallah, 2016; Neumayer, 2012; Pasner and Costanza, 2011; Costanza et al., 2017; Hayden & Wilson, 2018; Kenny et al., 2019.
Inequality and Social Health	Alvaredo et al., 2018; Oxfam, 2018; Ardelyanova and Obryvalina, 2018; Bernasek, 2006; Delhey and Dragolov, 2014; Pickett & Wilkinson, 2007, 2010, 2015; Pickett, 2017; Rashbrooke, 2014; Sen, 1976, 1979; Summerfield, 2011; Wade, 2006; Wilkinson, 2005; Wilkinson & Pickett, 2006, 2007, 2008, 2009; You and Sanjeev, 2005.
Others	Osberg and Sharpe, 2010; Landefeld et al., 2009; Bergh, 2009; Jones & Klenow, 2016; Costanza et al., 2009; Galbraith, 1958; Scitovsky, 1976; Cedric et al., 2008; Goossens et al., 2007; Antal & Bergh, 2014; The Economists, 2016; Fox, 2012; Cobb et al., 1995; Lawn & Clarke, 2010; Hirsch, 1976; Pilling, 2019.

Source- Shrotryia & Singh (2020)

there was a system of economic measurement based on National Income Accounting. In the 20th century, GDP became a highly essential and indispensable part of national income. The historical texts of economics suggest that there was no precise definition of the economy in the world until the 17th century (Mitra-kahn, 2011) when Thomas Mun and William Petty attempted to define an economy through writings on ‘mercantilism’ and ‘political arithmetic’ respectively (Mitra-Kahn, 2011; Coyle, 2014; Lapenies, 2016). Mun and Petty made concerted efforts through the principle of maximising the balance of trade surplus and National Income Account (NIA), respectively, to assign an economic value to the size and nature of an economy in the entire period of the 17th century (Heckscher, 1994; McClusker, 2001). Both ideas to define the economy by these two great scholars set the tone for many epochal writings of the coming centuries. The journey from the National Income Account and trade surplus in the 17th century to a precise and operational definition of the economy through GDP in the twentieth century is quite exciting and insightful.

It was the year 1665 when a British, multitalented scientist, William Petty, estimated taxable income and considerable expenditure, population, land, and other assets of England and Wales with the principle objective to access the country’s necessary resources to finance the war expenditure through necessary taxes (Kendrick, 1970; Bos, 2008; Coyle, 2014; Karabell, 2014; Lapenies, 2016). It is not easy and convenient to have the estimation of a country’s entire resources without having a standard system of measurement. It is the same as the case with Petty, who introduced a unique and

noble double-entry bookkeeping² technique for maintaining the official records of a nation (Bos, 2008). It was concluded that to ensure the possible victory over potential enemies, there was no need for any more land or increased population size. If the existing resources could be used better, it would be more than enough (Coyle, 2014; Kendrick, 1970; Petty, 1676). It was an exhibition of compelling economic insight at that time. It was also argued that the population was not significant for the nation’s economic productivity and wealth. The intensity, deftness, and enormous size of national wealth typically depended on how land, animals, capital, and other resources were utilised. Precisely, “one man by art, may do as much work as many without it” (Petty, 1676).

Mun (1621) advocated for excellent balance of payment which used to be known as Mercantilism. It dominated economic thought for many decades. According to Heckscher (1994), the notion of mercantilism prevailed from the 1620s until Adam Smith’s *Wealth of Nations* in 1776. During this period, economists typically had the notion that the nation would grow by maximising the balance of trade surplus (Heckscher, 1994; McClusker, 2001), which was completely different from Petty’s political arithmetic. Petty’s economic agenda was exclusively based on domestic conditions and the distribution of income, which was quite evident from his comprehensive composition of the national account for England at that time (Petty, 1676; Mitra-kahn, 2011; Bos, 2008). He believed that a country’s population should be able to increase its consumption expenditure to boost national growth. That is why emphasis was made on understanding the social make-up of

² In Accounting double entry bookkeeping is used as given by Luca Pacioli in 1494. He was a mathematician.

a nation for national accounting relationships (Petty, 1676; Kendrick 1970; Mitra-kahn, 2011;).

Based on the above-stated principles, the economy was defined through National Income Accounts when it was alien for a mercantilist and any other traditional economist. This is how the cornerstone was set for defining the economy of the 20th century. However, Petty did not get as much recognition as he deserved because of the non-political bonhomie. Nevertheless, Mun's idea of mercantilism (which was different from Petty's idea of domestic consumption) dominated for many countless decades. Hence, these two exclusive economic thoughts dominated the whole world until the latter part of the 18th century (see Boss, 2008 for the historical aspect of national income account and its standardisation across the world).

It is Adam Smith's *The Wealth of Nations* (1776) which introduced a new idea of economic thought through the philosophical concept of the division of labour and unique distinction between productive and unproductive labour. He mentions - *there is one sort of labour which adds to the value of the subject upon which it is bestowed; another labour has no such effects. The former, as it produces a value, maybe called productive; the latter unproductive labour* (Smith, 1776, p16). Thus, the manufacturer's labour adds, generally, to the value of the materials that he works upon, that of his own maintenances and his master's profit. On the contrary, the labour of a menial servant adds to the value of nothing - A man grows rich by employing a multitude of manufactures; he grows poor by maintaining a multitude of menial servants (Krueger, 2003).³ Productive and

unproductive labour was distinguished for allocation and division of labour, considered one of the prominent factors of production. Manufacturing was found to be the dominating contributor to the wealth of a nation, whereas services were found to have no contribution at all. Hence, the value of services was excluded as it was believed that commodity production makes a nation richer, whereas services drain an economy. It intellectually challenged the notion of productive and unproductive labour introduced by equally influential economists like Robert Dudley Baxter, Karl Marx and Alfred Marshal through their influential writings (Mitra-Kahn, 2011; Karabell, 2014; Coyle, 2014; Reardon et al. 2018). Marshal (1890) voiced and defended consideration of material, personal or non-material wealth and inclusion of services in the national income. It re-ignited the intellectual debate on the definition of an economy in the early period of the 20th century. Therefore, it is quite evident that the purview of national income was flexible, based on the political and military needs of the time as well as on the intellectual advancements and academic arguments.

In the 20th century, economists tried to define the economy through the prism of GDP or GNP (Gross National Product). It (GDP) is precisely the product of intellectual debate (among Clark, Stone, Meade, Keynes, Kuznets and Gilbert) along with two historical events of modern history, the Great Depression in 1930 and the World War II between 1939-1945 (Carson, 1975; Tily, 2009; Bos, 2008; Coyle, 2014; Karabell, 2014; Lepenies, 2016). After Marshal's *The Principal of Economics*, many leading statisticians made their concrete effort to improve data collection and measurement techniques

³ Adam Smith wrote *The Wealth of Nations* in 1776, which was edited by Alan B. Krueger in 2003 with his introduction to the volume. See Krueger (2003).

(Coyle, 2014). As a result, Clark wrote *The National Income 1924-31* in 1932 and made a quarterly estimation of the national income of the UK for the first time providing details of production and expenditure (Clark, 1932). Kuznets (1934) performed a similar exercise in the United States. The crawling state of US economy due to the great depression of 1930, forced the Roosevelt Democratic government to set up a commission headed by Kuznets for effectively monitoring the government policies (Carson, 1975; Marcuss & Kane, 2007; Fogel et al., 2013). It was precisely the first survey in the history of national accounting, which was carefully prepared for the whole economy (Coyle, 2014). It made a case for policy improvement for the democratic-led US government at that time. Kuznets took this task as how to measure the national economic welfare rather than output, and thus he advocated the idea of non-inclusion of government expenditure from the National Income Account (Carson, 1975; Marcuss & Kane, 2007; Fogel et al., 2013).

However, this way of measuring the national income was not digestible to the ruling government at that time. Roosevelt wanted to measure the economy in such a way that indicates the total capacity of a nation to produce but does not show the additional government expenditure on armaments as reducing the national output (Carson, 1975; Marcuss & Kane, 2007; Karabell, 2014). This was one of the problems in the definition of national income during the pre-war period. So, it was an issue to bear war expenditure for the government; thus, they changed the definition of National Income to GDP (Coyle, 2014; Lapenies, 2016). Thus, whether to incorporate government expenditure or not became an issue of intellectual and political debate. There was a heated discussion between Kuznets and

other economists, especially Milton Gilbert in the US. It highlighted one of the key issues - what was the meaning of economic growth and why did statisticians measure it?

Gilbert (1942a, 1942b, 1943) was very clear when he mentioned that the aim was to have a measurement that was useful to the government in running its fiscal deficit. The arguments were put forth for the inclusion of defence expenditure in fiscal spending, and it was argued that it would reflect positively for economic growth, regardless of whether it benefited the individual's economic welfare or not. In this tussle, Kuznets lost, and real wartime politics won. It is considered to be the turning point in the history of the measurement of national income. This led to the initial development of the concept of GDP, which was dominated by wartime economists.

In the UK too, two established economists, Clark and Keynes had different opinions on the inclusion of government expenditure in national income. Keynes (1940) acknowledged the contribution of Colin Clark for measuring national income in *How to Pay for the war* in 1940. Before that, Keynes (1936) had already published one of the classical texts – *The General Theory of Employment, Interest and Money*, which provided for an impact on GDP and its measurement methodology. It had an elaborate discussion on the variables like national income, personal consumption, investment and employment, interest rate and level of government spending (Tilly, 2009). Austin Robinson, a British Treasury official, was very much impressed with the arguments given by Keynes. He commissioned two young economists, Richard Stone and James Meade, to develop an economic model typically based on the arguments of Keynes, which later became the first modern set of national accounts and GDP (Tilly, 2009). This work was

published in the UK's 1941 budget. Hence, from the 1941 onwards, the government adopted the interventionist approach (Fiscal and Monetary) for the growth of the economy.

This methodology became more sophisticated and scientific when Jan Tinbergen, the first Nobel prize winner in economic science, introduced the concept of econometrics in the economic model of growth. This was a big boost for the government and institutions to predict growth rate. Hence the development of GDP and inclusion of government expenditure (as advocated by Keynes) was the moment of winning out over Kuznets' and Clark's welfare-based approach of economic growth. This led to the foundation for the domination of GDP-led metrics across government policies. Over the period, the purpose of economic growth changed from financing the war expenditure to ensuring stability and eradicating poverty from the world. In 1947, the UN issued a technical report prepared by Richard Stone in which a method for calculating GDP was given. The first official system of national accounts was published in 1953 by the UN. The communist countries agreed in 1969 to follow their own national accounting standard, which is called the Material Product System (MPS 69). As time passed by, more and more countries started following these practices resulting in organising data and producing national accounts statistics with a greater degree of sophistication and advancement.

We have reached a time when most of the international and local agencies are using GDP as one of the most important indicators for guiding and assisting policies. See, for example, ADB, (1999, 2000); IMP & WB, (2004, 2005), and this is how GDP becomes a gospel indicator and policymakers across

the world see everything immensely with the lens of GDP.

4. The Place of GDP In the 21st Century.

4.1. Alternatives Beyond GDP

Across the globe, there have been initiatives to develop alternatives or to substitute GDP with a more accurate and appropriate measure. From the 1960s onwards, leading social scientists were inspired by the idea that monetary indicators cannot fully capture well-being. Hence, they proposed several alternative measures. It was in the early 1970s when some social scientists started discussing the historical achievement of GDP and proposed several alternative measures. Some of the key developments taken place during the period are briefly discussed below.

Nordhaus and Tobin introduced the Measure of Economic Welfare (MEW) and Sustainable Measure of Economic Welfare (SMEW) in 1973 with a major objective of measuring welfare by developing an index which reflected consumption rather than production. MEW reclassified GDP to reflect consumption and make adjustment of some of the 'beds' and 'regrettable' as well as added some non-market activities in order to calculate true GDP or MEW (Nordhaus & Tobin, 1973).

The Index of Social Health (ISH) was developed in 1987 to make the assessment of social progress, followed by the Index of Sustainable Well-being (ISEW) in 1989, which was later renamed as Genuine Progress Indicator (GPI) in 1995 by Daly and Cobb. It (GPI) takes into consideration the relations between environment, economy, and society. It is the measure that uses GDP as a foundation. Through this, an attempt was

made to measure the economy that would give better guidelines than GNP in promoting economic welfare. Its primary goal was to create an index that took into account both current environmental issues and long-term sustainable consumption of resources and natural ecosystems (Daly & Cobb, 1990).

One of the most influential indicators, the Human Development Index (HDI) was introduced in 1990. The first report of UNDP (1990) broadly defined human development as “human development is the process of enlarging people’s choices. The most critical of these wide range- ranging choices are to live a long and healthy life, to be educated, and to have access to resources needed for a decent standard of living. Additional choices include political freedom, guaranteed human rights and personal self-respect”. HDI provides a credible alternative to the income-based parameter for measuring human growth and development (Kelly 1991; Anand & Sen 1994). The very propose for having HDI was to search for an index that focuses directly on the lives that people lead and what they succeed in being and doing. HDI followed six main principles as guidelines that is to: (i) “measure the basic purpose of human development- to enlarge people’s choice; (ii) include a limited number of variables to keep it simple and manageable; (iii) be composite rather than a plethora of separate indices; (iv) cover both social and economic choices; (v) be flexible enough in methodology to incorporate, once better alternatives available; and (vi) not be to inhibited by the lack of reliable and up-to-date data series” (Ul Haq 1995). Over the time UNDP (United Nation Development Programme) made numerous revisions to incorporate larger dimensions of human development. Such revisions include the Multidimensional Poverty Index (MPI);

Inequality Adjusted Human Development Index (IHDI); Gender Inequality Index (GII); and Gender Development Index (GDI).

The development of HDI sets the academic debate in this domain for many years. Many indices are designed considering the limited scope of HDI. In this respect, the Index of Economic Well-being (IEWB) was created with the objective to encompass immediate prosperity (as measured by consumption), long-term accumulation, social issues (reduction of inequities and protection from “social risks”) and environmental challenges (Osberg & Sharpe, 1998). The Center for the Study of Living Standards has published the IEWB for Canada and other OECD nations. Green GDP has been designed to measure economic growth that takes into account the effects of environmental deterioration. It encompasses the increasing depletion of natural resources and environmental damage. This indicator is based on the idea that the effects of industrial pollution on the environment and human health can take years to manifest. Green GDP is intended to account for nature’s non-market advantages, but its applicability and validity are highly debatable, particularly when it comes to natural resource pricing (Boyd 2006).

Genuine Savings (GS) as an indicator was designed to access an economy’s sustainability. It defines wealth more broadly by measuring “how much the country is investing in future consumption” than the orthodox national account. Its main goal is to depict the value of the net change in a variety of development-related variables, such as productive assets, natural resources, environmental quality, human resources, and foreign assets (Everett & Wilks 1999). It is comprehensive in that it contains data on the economic, social, and environmental progress of a country (Everett &

Wilks 1999). “GS draws attention to investment in human capital and good governance that have emerged as important factors as part of a nation’s capital and consequently income” (World Bank 2006, p.87).

Bhutan has been known for spearheading the movement to bring the happiness of people in the development agenda of the world. It has been voicing out its concern through the concept of GNH in different forums all across the globe. In 2010, it started measuring the happiness of its citizens based on the variables related to the quality of life, well-being and happiness. The Planning Commission in Bhutan stated “The pursuit of GNH calls for a multi-dimensional approach to development that seeks to maintain harmony and balance between economic forces, environmental preservation, cultural and spiritual values and good governance” (Planning Commission 2000, p.20). It uses two kinds of thresholds: Sufficiency thresholds and a Happiness threshold, and measures all the 9 domains through 33 indicators (having different weights), and 102 sub-indicators (questions).

The New Economic Foundation (NEF) in the UK designed the Happy Planet Index (HPI) to measure happiness and environmental impact. HPI does not determine which country is the happiest in the world; rather, it assesses a country’s environmental efficiency in promoting happiness. It measures the number of years of happy life created per unit of planetary resource utilised by a certain society, and nation at large. The matrix depicts the proficiency with which well-being is given in terms of the environment, NEF (2004); Goossens et al (2007). It is comprised of two objective indicators: life expectancy and per capita environmental footprint as well as one subjective measure (life satisfaction).

The Social Progress Index (SPI) is an initiative of India for Competitiveness which has a major objective of making an economic and social assessment of India through various indicators. It provides a methodical and scientific foundation for government, civic society, and communities to address social and environmental challenges that are important to them. Kapoor, Kapoor M. and Krylove (2017) wrote that “*social progress is defined as a society’s ability to meet its people’s basic human needs, to construct the building blocks that allow citizens and communities to improve and preserve the quality of their lives, and to create an environment that allows all individuals to reach their full potential*”. Table 2. provides details of the indicators that are considered for SPI.

The development of these measures took momentum when the European Commission organised *Beyond GDP* conference in November 2007 (Bleys, 2011). Further in June 2008, the French government constituted the Commission on the Measurement of Economic Performance and Social Progress under the chairmanship of Joseph Stiglitz. After that, OECD launched its ‘Measuring the Progress of Societies’ website in October 2009, with the objectives of allowing ‘Beyond GDP’ practitioners to share and discuss their experience with alternative measures. Therefore, there is an ongoing debate among economists, social scientists, policymakers and practitioners on whether effort should be made towards improving GDP as a measure, or supplementing it with other measures or altogether replacing it with the more holistic measure of well-being.

Those who are in favour of improving or supplementing GDP, argue that it is a well-established and widely used statistical indicator. Whereas those who advocate

Table 2. Social Progress Framework

Basic Human Needs	Foundations Of Well-being	Opportunity
Nutrition and Basic Medical Care	Access to Basic Knowledge	Personal Rights
Infant mortality rate	Net primary enrolment	Property rights
Underweight children	Gross secondary enrolment	Human trafficking
Maternal mortality rate	Literacy	Judiciary
Anaemic children	Gender parity	Personal Freedom and choice
Water and Sanitation	Dropout rates	Family planning
Prevalence of typhoid	Access to Info and Communications	Child labour
Prevalence of diarrhoea	Access to TV	Corruption
Improved water source	Internet subscribers	Early marriage
Drinking water covered habitation	Phone subscribers	Inclusion
Rural sanitation	Newspaper circulation	Child sex ratio
Shelter	Health and Wellness	Financial inclusion-bank branches
Power deficit	Obesity male	Financial inclusion-women
Access to electricity	Obesity female	Women in Panchayati Raj Institutions
Pucca houses	Suicides	Insurance coverage
Housing shortage	Respiratory infections	Scheduled tribe enrolment, higher education
Personal Safety	HIV prevalence	Access to Advanced Education
Road deaths	Life expectancy at 60	Higher education enrolment
Murder crimes	Leprosy prevalence	Female graduates
Rape crimes	Environmental Quality	Technical institute
Violent crimes	Renewable energy	Colleges (UGC)
	Change in forest cover	
	Water withdrawals	
	Land degradation.	

for replacing GDP argue that it is a poor measure, and over obsession with it would lead to a policymaking process that is away from the assurance of the general well-being of people (Goossens et al. 2007; Afsa et al., 2008). All the proposed, alternative measures discussed above, can be classified into three groups— monetary measures of economic resources; measures reflecting selected social conditions; and subjective measures

of happiness (or life Satisfaction). For paucity of consistency and policy direction, we have categorised all the alternatives into three broader groups (Table 3).

i) Indicators adjusting GDP which includes traditional economic performance indicators like GDP or the national savings rate, which are adjusted by including monetized environmental and social factors;

Articles

- ii) Indicators replacing GDP which incorporate indicators that directly assess well-being than GDP; and
- iii) Indicators supplementing GDP which include indicators that complement GDP with additional information on the environment and social conditions.

Table 3. List of Indicators⁴

Indicators Adjusting GDP	Indicators Replacing GDP	Indicators Supplementing GDP
MEW Nordhaus and Tobin, 1973	HDI, UNDP 1990	Sustainable Development Indicators UN, 1996
SMEW Nordhaus and Tobin, 1973	HPI, New Economic Foundation 2006	Millennium Development Goals, UN, 2000
Index of Social Health, 1987	IAH, Veenhoven and Kalmijn 2005	OECD Social Indicator, OECD, 2000
ISEW Daly and Cobb, 1989	Quality Of Life Index, Morris David	Key Environmental Indicators OECD, 2001
GPI Daly and Cobb, 1995	GNH Bhutan, 2008	Global Project on Measuring Progress Of Societies, 2004
IEWB, Lars Osbergand and Andrew Sharpe, 1998	Environmental Sustainable Index, Yale university, 1999	Economic Environment and Social Statistics, Fact Book, 2005
GS World Bank, 1998	Ecological Footprint Global Footprint Network, 1996	Sustainable Development Statistics, OECD – EUROSTAT, 2008
Green GDP		

Source: Compiled from different sources.

It is difficult to find any indicator that can fully replace GDP. Similarly it is also equally challenging to conclude on any single index that can capture all aspects of people's well-being in a single measure. Globally, four different approaches of the matrix are used. These approaches are:

- i) Synthetic indicators using a synthetic approach (aggregate variables that have the same units of account as Green GDP).
- ii) Composite indicators using a composite approach (single number indicators constructed by giving weight to different variables that do not necessarily have common units of account as HDI);

- iii) Indicators built from subjective data (based on survey and what respondents feel about a given set of questions).
- iv) Dashboard (it is a set of indicators covering major societal issues and many more, it may also include composite, synthetic or subjective).

5. Conclusion.

In response to the questions raised in the introduction section of the paper, GDP was developed, keeping in mind the highest priority of the government's self-interest. It is the outcome of dynamic intellectual battles and pressure of World War II. The purpose of creating such an index was to measure and guide economic progress and policies, as stated explicitly by Gilbert, who stated

⁴ The details (Who, when, where and why) of each indicator are there in Annexure 1

categorically that the purpose was to guide the government in running its fiscal deficits. The ability to represent the entire health of the economy in a single value using a universally accepted standardised methodology has made it the most widely used statistical index in the world. At the same time, economists including Nobel laureates in economic science such as Kuznets, Hicks, Arrow, Nordhaus, Tobin, Kahneman, Deaton, Samuelson, Solow, Sen, and Stiglitz have expressed concern about using GDP as an indicator for the care of human life and happiness.

Since its inception, it has served as a tool for politicians to persuade their electorate. Being followed at the top by governments all over the world has bound intellectuals to see everything through the lens of GDP without considering its good and bad uses, which has later become the subject of massive beyond GDP debates across the discipline. Several alternative measures have been proposed across academic forums, including the Physical Quality of Life Index, Human Development Index, Index of Social Progress, GPI, and Psychological Indicators such as Happiness Indicators, Gallup-Health Ways Well-being Index, Happy Life Year Index, Personal Well-being Index, and many more. All of the alternatives that have been developed so far for policy direction focus on three approaches: one that makes various adjustments within GDP called GDP adjusted metrics; second, metrics, which replace GDP and include indicators that directly assess well-being; and third, GDP-supplementing indicators, which include indicators that provide additional information on the environment and social situations in addition to GDP.

It is an insufficient and inappropriate indicator for gauging the care of human life

and happiness, but it does not mean that GDP is a wrong and redundant indicator. As for as the measure of economic progress is a concern, GDP is the ever-best invention happened in the history of economics. The representation of the complete health of the economy through a single index having statistically sophisticated and universally accepted standardised methodology makes it the most followed statistical indicator across the world. It is (GDP) an important means to achieve a good 'state of being and state of lives.' Even empirical pieces of evidence of thinkers like Easterlin, MaxNeef, Helliwell and many others advocate for the same.

Therefore, considering the academic writings and broader acceptance, we cannot ignore the contribution of income to people's wellbeing. It is a very pertinent means but obviously not an end for human wellbeing. Fulmination of this index with respect to HWB is essential but at the same time, completely ignoring it is not advisable. Therefore, positively acknowledging its role is equally vital for academic justification as negatively criticising it. Hence, anyone working on alternatives of GDP vis-à-vis wellbeing should not ignore the role of income, (GDP) especially in developing countries.

6. Limitations of Existing Indicators and Scope for Future Work

There have been efforts all across the world to develop alternatives or to replace GDP with a more accurate and acceptable metric so that the assessment of human well-being (HWB) could be made in a more comprehensive manner. As a result, economists, social scientists, practitioners, and policymakers' debate whether efforts should be made to improve GDP as a metric or whether it should be supplemented or entirely replaced with a

more comprehensive measure of well-being. The indicators developed so far have not been able to address issues concerning to well-being whereby making citizens happy. It does not mean that income or GDP is not important but, primarily it is the well-being of people which is important.

A debate is going on among researchers about whether GDP should be replaced or improved, or supplemented by the prevailing indicators or there should be a new indicator considering various facets of HWB. Some of these alternative indicators use GDP as the base and then add or subtract in order to address some of the above issues. Some indicators are directly related to people's life satisfaction and the quality of life and some indicators are composite in nature and up to some extent seem to be a good measure of human development.

Indicators like MEW; SMEW; ISEW, and GS use very limited variables like environmental degradation, natural ecosystems, cost of crime, services from consumer durables, investment in human capital etc. These indicators also suffered from the following limitations:

- Lack of consensus on how to value items that are not regularly reported in monetary terms (e.g. voluntary work, or illegal activities).
- How to quantify the cost of depleting natural resources?

Hence these indicators cannot be universally used to measure and define HWB. Indicators like SWB and GNH are highly 'subjective' in nature so there is serious concern related to its validity. Not only this, because of cultural differences it becomes difficult to compare results across different

gender, age, religion, and other cultural boundaries.

Indices like HDI and HPI work on very few variables. HDI uses three variables (longevity, knowledge, and standard of living) to generate the human development index. Hence HDI is not the holistic measure of well-being, as it focusses on only three variables. Apart from the three variables, there are other dimensions of economic, social, political and environmental issues that affects human life and thus HWB.

Empirical results show that there are significant and positive correlations among HDI's components, so while accessing the result of one variable, yield the same result on other variables. HPI also works on only four variables (well-being; life satisfaction; inequality; and ecological footprint) and does not consider the larger dimensions of social and political factors. Therefore, it is also not a holistic approach to measure human well-being as an alternative to GDP.

Thus, comparing the aforementioned alternative indicators of well-being in light of the main points of criticism of GDP as proxy of HWB. It turns out that, at present there is no perfect alternative available. All available approaches do not succeed in systematically repairing the list of shortcomings of GDP. Hence there should be an appropriate holistic model which together includes the key aspects of economic, social, political and environmental domains of HWB.

Conflict of Interest Statement

On behalf of all authors, the corresponding author states that there is no conflict of interest.

Annexure 1. Alternative Measures for Policy Focus

Organisation/ Author/s	Measure	Year of publication	Objectives	Scope/ Dimensions	Geographical coverage
Indicators 'Adjusting' GDP					
Nordhaus and Tobin	Measure of economic well-fare (MEW)	One shot estimation for the 1929-1965 period.	Proposing a measure of economic welfare complementing GDP.	Private household consumption, net of expenditures that are considered as not directly contributing to welfare, share of public expenditure that contribute to welfare.	US Only
Nordhaus and Tobin	Sustainable measure of economic welfare (SMEW)	One shot estimation for the 1929-1965 period.	Proposing a measure of economic welfare complementing GDP.	MEW corrected, for changes in reproducible capital, some elements of non-reproducible capital (land and foreign assets), health and educational capital.	US only
M&M (Miringoff, institute for innovation in social policy)	Index of Social Health (ISH)	1987	Assessment of social progress	Per age; children, youth, adults, elderly, all ages	US, Applicable to Canada
Daly, Cobb, redefining progress for GPI	ISEW (Index for sustainable well-being) and GPI (Genuine Progress Index)	ISEW 1989 GPI 1995	Does not take into account the valuation of leisure but takes into account inequality and the depletion of natural resources.	Consumption inequality, value of house work and parenting, higher education and volunteer work, services of consumer durables, loss of leisure time, co2 damage, resource depletion.	Many countries including Canada, Austria, Chile, Germany, the UK, Belgium, Netherlands, Sweden, Italy etc.
Lars Osbergand Andrew Sharpe, Centre for study of living standards	Index of economic well- being (IEWB)	1998. Covering 1971-2002 for Canada and USA, 1980-2001 for others.	Global assessment of country achievements in terms of economic well-being	Consumption flows, stock of wealth, equality, social risks,	Selected OECD countries, like France, Italy, Australia, the USA, the UK, Canada, Germany, Norway, and Sweden.

Articles

Organisation/ Author/s	Measure	Year of publication	Objectives	Scope/ Dimensions	Geographical coverage
World Bank, Genuine Saving	Where is the wealth of the nation? Measuring capital for xxi century	1998	To measure savings in the economy after taking into account investment in human capital, depletion of natural resources and damage caused by pollution.	Natural resources, pollutants, and human capital.	
Green GDP, or Green National Accounting					
Indicators 'Replacing' GDP					
UNDP, Human Development Index	HDI	1990	Global assessment of country achievement in different areas of human development.	Longevity, Knowledge and standard of living	175 Countries
Canadian Council on social development (CCSD)	Personal security index (objective), perception index (subjective)	1998, annual.	Overview of factors impacting security in a broad sense and assessment of evolution.	Economic security, health security, physical safety,	Canada
New Economic Foundation	Happy Planet Index (HPI)	2006	Assessing a country's ability for supporting good and long lives,	Satisfaction, life expectancy, environmental sustainability	178 countries.
R. Veenhoven and W. Kalmijn, Erasmus University Rotterdam	Inequality adjusted happiness (IAH)	2005 covering 1973-2004.	International comparison of societal performance	Reflect a combination of utilitarian (average happiness) and egalitarian (equality in happiness).	95 countries.
M. Fleurbaey & G. Gaulier	Index of living standards	One-off research published in 2006,	International comparison of living standards without usual shortcomings of GDP	NNI adjusted for elements of well- being i.e. leisure and healthy life	24 OECD Countries
Florence Jany- Catrice, Stephen Kampelmann (CLERSE-CNRS)	Index of economic well-being (France)		Assessment of France's achievement in terms of economic well-being	Consumption flows, stock of wealth, equality social risk.	
G. Ponthiere, University de Liege		One shot, experimental work, not intended for regular publication	International comparison of living standards	House hold final consumption per capita, adjusted for elements of well-being; leisure, healthy life, and economic exclusion	

Organisation/ Author/s	Measure	Year of publication	Objectives	Scope/ Dimensions	Geographical coverage
OECD- Alternatives measure of well- being	One of the working papers released in 2006, plus special chapter in OECD report 'going for growth and society at a glance and statistical brief"		To assess whether GDP per capita is an adequate proxy as a measure of well-being or whether another indicator is more suitable for that purpose.	Measure of economic resources; National account aggregate that includes dimensions of well- being; Measure of social outcome; and Happiness and Life satisfaction.	OECD Countries
Morris David Morris	Quality Of Life Index		To measure the quality of life or well-being of a country.	Literate population, Infant mortality rate, life expectancy, physical quality of life.	
GNH	Gross National Happiness	2008	To measure collective happiness	Psychological well-being, income, education, culture, community, health, ecological diversity.	Bhutan
Yale University's Center for environmental law and policy with Columbia University and World Economic Forum	Environmental Sustainable Index	Between 1999- 2005	To evaluate environmental sustainability relative to the path of other countries.		
Yale University's Center for environmental law and policy with Columbia University and World Economic Forum	Environmental Performance Index	Published in 2006, 2008, 2010.	To simplify the index for policy makers.		
	Regional Quality Of Development Index (QUARS)				
Global Footprint Network	Ecological Footprint	2006	To measure human demand on nature.		200 nations
Indicators 'Supplementing' GDP					

Articles

Organisation/ Author/s	Measure	Year of publication	Objectives	Scope/ Dimensions	Geographical coverage
UN, division for sustainable development	CSD, Sustainable Development Indicators	1996	Increase focus on sustainable development	Poverty; Governance; Health; Education; Demographic; Natural Hazards; Atmosphere; Land; Oceans Seas; Economic Development; Consumption and production pattern	53 CSD Member state
UN Millennium Development Goals	A universal framework for development	2000	Eight main goals - Eradicate poverty and hunger 2. Universal primary education 3. Gender equality 4. Reduce child mortality 5. Improve maternal health 6. Combat HIV/AIDS 7. Environmental sustainable 8. Develop global partnership for development	Poverty, Hunger, education, gender, equality, health, environment development	189 countries
OECD, Directorate For Employment, Labour and Social Affairs- Social Indicators	Society at a glance—OECD social Indicators	2000, Bi-annual	Provide quantitative evidences on whether our societies are getting more or less equal, healthier and cohesive	1. General Context 2. Self-Sufficiency 3. Equity 4. Health 5. Social Cohesion	OECD Countries
OECD, Environment Directorate— Environmental Indicators	Key Environmental Indicators	2001	Tracking environmental progress, support of policy evaluation, information of the public.	Pollution Issues, and natural resources and assets	OECD Countries
Global project on measuring the progress of societies.		2004	To raise citizen awareness of what constitutes progress for their society.	1. Advocacy 2. Develop best practices. 3. Develop new ICT tools	

Organisation/ Author/s	Measure	Year of publication	Objectives	Scope/ Dimensions	Geographical coverage
OECD – Economic Environmental and Social Statistics	Fact book	2005	To provide a global overview of economic, social, and environmental trends on OECD statistics.	1. Population 2. Macroeconomic trends 3. Economic Globalisation 4. Prices 5. Energy. 6. Labour 7. Science and Technology 8. Environment 9. Education 10. Public Finance 11. Quality of Life	
UNECE-OECD- EUROSTAT, working group on sustainable development statistics.	Report to the CES with recommendation	2008	To provide a theoretical and conceptual framework on sustainable development indicators.	Produced capita, Human capital, Natural capital, Social Capital	
System of Economic Environmental Accounts (SEEA)	Satellite system of SNA		To provide statistical information about environment and economic data.	Pollutants and Materials, environmental protection and resource management, Natural Resources, environmentally adjusted macroeconomic aggregates.	
Statistics Netherland	National Accounting Matrix Including Environmental Accounts	1990	To present a framework for showing the contribution of industrial and household contribution to environmental concern.	Environmental pressure and economic aspect	
DESTATIS, Federal Statistical Office of Germany	GEEA, German Environmental Economic Accounting		Focus relationship between environment and economy.	Environmental pressure, environment state, and response.	
System of Economic and social Accounting matrices and Extensions	SESAME		To integrate economic, social and environment data.	Environmental performance,	

References

- Afsa, C., Blanchet, D., Marcus, V., Pionnier, P.-A., Rioux, L., Mira d'Ercole, M., Ranuzzi, G., & Schreyer, P. (2008). *Survey of existing approaches to measuring socio-economic progress*. Paris, France: Commission on the Measurement of Economics Performance and Social Progress.
- Ahmad, Y.J., Serafy, S.E., & Lutz, E. (1989). *Environmental accounting for sustainable development*. World Bank.
- Alvaredo, F., Chancel, L., Piketty, T., Saez, E., & Zucman, G. (2018). *World Inequality Report 2018*. World Inequality Lab.
- Andrews, F.W. (1991). Stability and Change in Levels and Structure of Subjective Wellbeing; USA1972 and 1998. *Social Indicators Research*, 25, 1-30.
- Ardelyanova, Y., and Obryvalina, O. (2018). Comparative Analysis of Inequality, Corruption, and Trust Studies in Modern Societies. *Mediterranean Journal of Social Sciences*, 9(1), 65–69. <https://doi.org/10.2478/mjss-2018-0006>
- Antal, M., and Bergh, J. (2014). Evaluating Alternatives to GDP as Measures of Social Welfare/Progress. *WWWforEurope Working Papers Series*, (56). Retrieved from <http://ideas.repec.org/p/feu/wfewop/y2014m3d0i56.html>
- Argyle, M. (1989). *The Psychology of Happiness*. Routledge, London.
- Arrow, K., Bolin, B., Costanza, R., Dasgupta, P., Folke, C., and Holling, C. S. (1996). Economic growth, carrying capacity, and the environment. *Environment and Development Economics*, 1(1), 104–110. <https://doi.org/10.1017/S1355770X00000413>
- Asia Development Bank. (1999). *Fighting Poverty in Asia and the Pacific; the poverty reduction strategy*. ADB, Manila.
- Asia Development Bank. (2000). *A Pacific Strategy for the New Millennium*. ADB, Manila.
- Banerjee, A.V. and Duflo, E. (2019). *Good Economics for Hard Times*. Juggernaut Books, New Delhi, India.
- Beckerman, W., (1991). *In Defence of Growth*. London.
- Begg et al. (2003). *Economics*, 7th Edition. Cambridge.
- Bergh, J. C. J. M. van den. (2009). The GDP paradox. *Journal of Economic Psychology*, 30(2), 117–135. <https://doi.org/10.1016/j.joep.2008.12.001>
- Berik, G. (2020). Measuring what matters and guiding policy: An evaluation of the Genuine Progress Indicator. *International Labour Review*, 159(1).
- Bernasek, A. (2006). Income inequality and its cost. *The New York Times*. <http://www.nytimes.com/2006/06/25/business/yourmoney/25view.html> retrieved on August, 2017.
- Blanchflower, D. G., and Oswald, A. J. (2004). Well-being over time in Britain and the USA. *Journal of Public Economics*, 88(7–8), 1359–1386. [https://doi.org/10.1016/S0047-2727\(02\)00168-8](https://doi.org/10.1016/S0047-2727(02)00168-8)
- Blanchflower, D.G. and Oswald, A.J. (2000). The rising wellbeing of the young. In; Blanchflower, D.G., Freeman, R.B. (Eds.), *Young Employment and Joblessness in Advanced Countries*. University of Chicago Press.
- Bleys, B., and Whitby, A. (2015). Barriers and opportunities for alternative measures of economic welfare. *Ecological Economics*, 117, 162-172.
- Bleys, B. (2011). *Beyond GDP, Classifying Alternative Measures For Progress*. Springer Publication.
- Bos, F. (2006). *The National Accounts As a Tool for Analysis and Policy; Past, Present and Future*. MRPA Papers.
- Campbell, A. (1981). *The Sense of Wellbeing in America*. McGraw Hill, New York.

- Campbell, A., Converse, P.E., and Rodgers, W.L., (1976). *The Quality of American Life*. Russell Sage, New York.
- Carson, C. S. (1975). the History of the United States National Income and Product Accounts: the Development of an Analytical Tool. *Review of Income and Wealth*, 21(2), 153–181. <https://doi.org/10.1111/j.1475-4991.1975.tb00687.x>
- Cassiers, I., & Thiry, G. (2014). A high- stakes shift: Turning the tide from GDP to new prosperity indicators. *Redefining Prosperity*, 22–40. <https://doi.org/10.4324/9781315777955>
- Chancel, L., & Piketty, T. (2017). Indian Income Inequality, 1922-2015: From British raj to billionaire raj. *WID.world Working Paper Series N. 2017/11*. World Inequality Lab, Paris School of Economics.
- Clark, C. (1932). *The National Income 1924-1931*. Macmillan & Co.
- Cobb, C., Goodman, G., & Wackernagel, M. (1999). Why Bigger is not better: The GenuineProgress Indicator. *Redefining Progress*. <https://web.archive.org/web/20120402150106/http://www.nber.org/~rosenbla/econ302/lecture/GPI-GDP/gpi1999.pdf>
- Cobb, C., Halstead, T. & Rowe, J. (1995). If GDP is Up, Why is America Down? *The Atlantic Monthly* 276, 59-78.
- Commission, S. D., & Earth, T. (2008). *Herman Daly Towards A Steady-State Economy*. Sustainable Development Commission UK.
- Costanza, R., Hart, M., Posner, S., & Talberth, J. (2009). Beyond GDP : The need for new measures of progress. *Boston University*, (4), 1–47.
- Costanza, R., Groot, R.D., Braat, L., Kubiszewski, I., Fioramonti, L., Sutton, P., Farber, S., & Grasso, M. (2017). Twenty years of ecosystem services: How far have we come and how far do we still need to go? *Ecosystem Service*, 28, 1-16.
- Coyle, D. (2014). *GDP – A brief But Affectionate History*. Princeton University Press.
- Cummins, R. A. (1996). Domains of life satisfaction: An attempt to order chaos. *Social Indicators Research*, 38(3), 303-328.
- Daly, H. E. (1990). Toward some operational principles of sustainable development. *Ecological Economics*, 2(1), 1–6. [https://doi.org/10.1016/0921-8009\(90\)90010-R](https://doi.org/10.1016/0921-8009(90)90010-R)
- Dasgupta, P. (2010). Nature's role in sustaining economic development. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 365(1537), 5–11. <https://doi.org/10.1098/rstb.2009.0231>
- Delhey, J., & Dragolov, G. (2014). Why inequality makes europeans less happy: The Role of Distrust, Status Anxiety, and perceived conflict. *European Sociological Review*. <https://doi.org/10.1093/esr/jct033>
- Development, S. (2005). Wellbeing Concepts and Challenges Discussion paper prepared by Fiona McAllister for the Sustainable Development Research Network. *Sustainable Development*, 1–22.
- Diener, E. (1984). Subjective Well-being. *Psychological Bulletin*, 95, 542-575.
- Diener, E., Suh, E.M., Lucas, R.E., & Smith, H.L. (1999). Subjective Well-being; three decades of progress. *Psychological Bulletin*, 125, 276-303.
- Diener, E., and Biswas-Diener, R. (2002). Will Money Increase Subjective Well-Being? *Social Indicators Research*, 57(September 2001), 119–169. <https://doi.org/10.1023/A:1014411319119>
- Diener, E., & Seligman, M. E. P. (2004). Beyond Money: Toward an Economy of Well-Being. *Psychological Science in the Public Interest*, 5(1), 1–31. <https://doi.org/10.1111/j.0963-7214.2004.00501001.x>
- Diener E. & Oishi, S. (2000). Money and happiness: Income and subjective well-being across nations. In: Diener E, & Suh E,

Articles

- (eds.), *Subjective well-being across cultures*. Cambridge University Press.
- Diener, E., Tay, L., & Oishi, S. (2013). Rising income and the subjective well-being of nations. *Journal of Personality and Social Psychology*, 104(2), 267–276. <https://doi.org/10.1037/a0030487>
- Di Tella, R., MacCulloch, R., & Oswald, A.J. (1998). *The Macroeconomics of Happiness*. Harvard Business School, Mimeo.
- Douthitt, R.A., MacDonald, M., & Mullis, R. (1992). The relationship between measures of subjective and economic wellbeing; A new look. *Social Indicators Research*, 26, 407-422.
- Doyal, L. & Gough, I. (1991). *A theory of human need*. Macmillan.
- Doyal, L. & Gough, I. (1993). Need satisfaction as a measure of human welfare. In W. Blass & J. Foster (Eds.), *Mixed economies in Europe*. Edward Elgar.
- Duesenberry, J.S. (1949). *Income, Saving and Theory of Consumer Behaviour*. Harvard University Press
- Easterlin, R. A., McVey, L. A., Switek, M., Sawangfa, O., & Zweig, J.S. (2010). The happiness income paradox revisited. *Proceedings of the National Academy of Sciences*, 107(52), 22463-68.
- Easterlin, R.A. & Schaeffer, C.M. (1999). Income and subjective wellbeing over the life cycle. In; Ryff, C., & Marshall, V. (eds.) *The Self and Society in Aging Processes*. Springer.
- Easterlin, R. A. (1995). Will raising the incomes of all increase the happiness of all? *Journal of Economic Behavior and Organization*, 27(1), 35-47.
- Easterlin, R. A. (2001). Income and happiness: Towards a unified theory. *The Economic Journal*, 111(473), 465-484. <https://doi.org/10.1111/1468-0297.00646>
- Easterlin, R. A. (2003). Explaining happiness. *Proceedings of the National Academy of Sciences of the United States of America*. <https://doi.org/10.1073/pnas.1633144100>
- Easterlin, R. A. (2005). Feeding the illusion of growth and happiness: A reply to Hagerty and Veenhoven. *Social Indicators Research*, 74, 429-443. <https://doi.org/10.1007/s11205-004-6170-z>
- Easterlin, R. A. (2006). Building a Better Theory of Well-Being. In; Bruni, L., & Porta, P.L.(eds) *Economics and Happiness: Framing the Analysis*. Oxford Scholarship Online. <https://doi.org/10.1093/0199286280.003.0002>
- Easterlin, R. A. (2013). Happiness, growth, and public policy. *Economic Inquiry*, 51(1), 1-15. <https://doi.org/10.1111/j.1465-7295.2012.00505.x>
- Easterlin, R. A. (2015). Happiness and economic growth – the evidence. In: Glatzer W., Camfield C., Moller V., Rojas M. (eds) *Global Handbook of Quality of Life: Exploration of Well-Being of Nations and Continents*. Springer. https://doi.org/10.1007/978-94-017-9178-6_12
- Easterlin, R. A. (1974). Does Economic Growth Improve the Human Lot? Some Empirical Evidence. In: Paul A. D. and Melvin W. (eds.) *Nations and Households in Economic Growth: Essays in Honour of Moses Abramowitz*. Academic Press. <https://doi.org/10.1016/b978-0-12-205050-3.50008-7>
- Everett, G., and Wilks, A. (1999). The World Bank genuine savings indicator: A useful measure of sustainability? *Bretton Woods Project*
- Ferrer-i-Carbonell, A. (2002). *Income and Wellbeing; An Empirical Analysis of the Comparison Income Effect*. University of Amsterdam, Mimeo.
- Fleurbaey, M. (2009). Beyond GDP: The Quest for a Measure of Social Welfare. *Journal of Economic Literature*. 47(4), 1029-1075.

- Fiedman, B., (2005). *The moral consequences of economic growth*. New York, Alfred A. Knopf.
- Fogel, R.W., Enid, M.F., Mark, G. & Nathaniel, G. (2013). *Political Arithmetic. Simon Kuznets and Empirical Tradition in Economics*. Chicago; The University of Chicago Press.
- Fox, C.R., and Kahneman, D., (1992). Correlations, Cause and Heuristics in Survey of Life Satisfaction. *Social Indicators Research, 27*, 221-234.
- Fox, J. (2012). The Economics of Wellbeing. *Harvard Business Review*, Jan -Feb Issue.
- Frey, B. S., & Stutzer, A. (2002). What can economists learn from happiness research? *Journal of Economic Literature, 40*, 402–435.
- Frey, B.S. & Stutzer, A., (2000). Happiness, economy and Institutions. *Economic Journal, 110*, 918-938.
- Frey, B.S. & Stutzer, A., (2001). *Happiness and Economics*. Princeton University Press.
- Frey, B.S., & Stutzer, A., (1999). Measuring Preferences by Subjective Wellbeing. *Journal of Institutional and Theoretical Economics, 155*, 755-788.
- Galbraith, JK, (1957). *The Affluent Society*. London; Penguin Book.
- Giannetti, B. F., Agostinho, F., Almeida, C. M. V. B., & Huisingh, D. (2015). A review of limitations of GDP and alternative indices to monitor human wellbeing and to manage eco-system functionality. *Journal of Cleaner Production, 87*, 11–25. <https://doi.org/10.1016/j.jclepro.2014.10.051>
- Gilbert, M. (1942). War Expenditures and National Production. *Survey of Current Business, 22*(3), 9-16.
- Gilbert, M. (1942a). Measuring National Income as Affected by the War. *Journal of the American Statistical Association, 37*(218), 186-198.
- Gilbert, M. (1943). U.S. National income statistics. *The Economic Journal, 53*(209), 76-82.
- Glaeser, E. L., & Resseger, M. G. (2008). *Urban Inequality*. NBER Working Paper 14419, https://www.nber.org/system/files/working_papers/w14419/w14419.pdf.
- Goossens, Y., Makipaa, A., Philipp, S., and Isabel, V. S. (2007). *Alternative Progress Indicators to Gross Domestic Product (GDP) as a Means towards Sustainable Development*. Policy Department, Economic and Scientific Policy.
- Grisez, G., Boyle, J., & Finnis, J. (1987). Practical principles, moral truth, and ultimate ends. *American Journal of Jurisprudence, 32*(1), 99-151.
- Hamilton, K., & Clemens, M. (1999). Genuine savings rates in developing countries. *World Bank Economic Review, 13*(2), 333–356.
- Hayden, A., & Wilson, J. (2018). Taking the first step beyond GDP: Maryland's Experience in Measuring Genuine Progress. *Sustainability, 10*.
- Heckscher, Eli F. (1994). *Mercantilism*. 3rd Edition, Volume 2. Routledge.
- Helliwell, J. F. (2001). Social Capital, the Economy and Well-Being. In: Helliwell, J. (eds) *The Review of Economic Performance and Social Progress Vol.1*. Centre for the study of living standard.
- Helliwell, J. F. (2003). How's life? Combining individual and national variables to explain subjective well-being. *Economic Modelling, 20*(2), 331-360.
- Helliwell, J. F. (2006). Well-being, social capital and public policy: What's new? *The Economic Journal, 116*(510), 34-45.
- Helliwell, J., Layard, R. & Sachs, J. (2012). *World Happiness Report 2012*. Sustainable Development Solution Network.

Articles

- Helliwell, J., Layard, R. & Sachs, J. (2013). *World Happiness Report 2013*. Sustainable Development Solution Network.
- Helliwell, J., Layard, R. & Sachs, J. (2015). *World Happiness Report 2015*. Sustainable Development Solution Network.
- Helliwell, J., Layard, R. & Sachs, J. (2016). *World Happiness Report 2016*. Sustainable Development Solution Network.
- Helliwell, J., Layard, R. & Sachs, J. (2017). *World Happiness Report 2017*. Sustainable Development Solution Network.
- Helliwell, J., Layard, R. & Sachs, J. (2018). *World Happiness Report 2018*. Sustainable Development Solution Network.
- Helliwell, J., Layard, R. & Sachs, J. (2019). *World Happiness Report 2018*. Sustainable Development Solution Network.
- Helliwell, J., Layard, R. & Sachs, J. (2020). *World Happiness Report 2018*. Sustainable Development Solution Network.
- Hicks, J. (1939). *Value and Capital*. Oxford University Press.
- Hirsch, F. (1976). *The Social Limits of Growth*. Harvard University Press.
- International Monetary Fund and World Bank. (2004). *Report on the Evaluation of Poverty Reduction Strategy papers and the Poverty Reduction and Growth Facility*. IMF, Washington DC.
- International Monetary Fund and World Bank. (2005). *Review of Poverty Reduction Strategy Approach; Balancing Accountabilities and Scaling Up Results*. IMF, Washington, DC.
- Jackson, Tim. (2006). *Beyond the well-being paradox: well-being, consumption growth, and sustainability*. CES working paper 06/06, Centre for environmental strategy, University of Surrey. Guildford (Surrey) UK
- Jackson, T. (2009). *Prosperity Without Growth, Economics for a Finite Planet*. Earthscan Publisher, London.
- James, O. (1998). *Britain on the Couch; why we are unhappier compared to 1950 despite being richer*. Arrow Book; London.
- Jebb, A. T., Tay, L., Diener, E., & Oishi, S. (2018). Happiness, income satiation and turning points around the world. *Nature Human Behaviour*, 2(1), 33–38. <https://doi.org/10.1038/s41562-017-0277-0>
- Jeffrey, K., Wheatley, H., & Abdallah, S. (2016). *The Happy Planet Index 2016: A global index of sustainable wellbeing*. 1–5. <https://doi.org/10.1017/CBO9781107415324.004>
- Jones, C. I., & Klenow, P. J. (2016). Beyond GDP? Welfare across countries and time. *American Economic Review*, 106(9), 2426–2457. <https://doi.org/10.1257/aer.20110236>
- Kahneman, D., & Deaton, A. (2010). High income improves evaluation of life but not emotional well-being. *Proceedings of the National Academy of Sciences of the United States of America*, 107(38), 16489–16493. <https://doi.org/10.1073/pnas.1011492107>
- Kahneman, D., Krueger, A. B., Schkade, D., Schwarz, N., & Stone, A. A. (2006). Would you be happier if you were richer? A focusing illusion. *Science*, 312(5782), 1908–1910. <https://doi.org/10.1126/science.1129688>
- Kalam, A. P. J. Abdul. (2012). *Turning Points – a journey through challenges*. New Delhi: Harper Collins Publishers India.
- Karabell, Z. (2014). *The Leading Indicators; A Short History of the Number That Rule Our World*. Simon & Schuster.
- Kenny, D.C., Costanza, R., Dowsley, T., Jackson, N., Josol, J., Kubiszewski, I., Harkiran, N., Sese, S., Sutanto, A., & Thompson, J. (2019). Australia's Genuine Progress Indicator Revisited (1962-2013). *Ecological Economics*, 158, 1-10.
- Kendrick, J.W. (1970). The historical development of national-income accounts. *History of Political Economy*, 2(2), 284-315

- Keynes, J. M. (1936). *The General Theory of Employment, Interest and Money*. Macmillan & Co.
- Keynes, J.M. (1940). *How to Pay for the War. A Radical Plan for the Chancellor of the Exchequer*. Macmillan & Co.
- Keynes, J. M. & Rothbarth, E. (1939). The Income and Fiscal Potential of Great Britain. *Economic Journal*, 49(196), 626–639.
- Krueger, Alan B. (2003). (ed.) *The Wealth of Nations – Adam Smith*. New York: Bentham Classics.
- Kuznets, S. (1934). National Income, 1929-32, 1934. National Bureau of Economic Research, New York. <http://www.nber.org/chapters/c2258.pdf>
- Kuznets, S. (1937). National Income and Its Compositions; Discussion Between Simon Kuznets, Clark, Warburton and M.A. Copeland. *In Studies in Income and Wealth Series Vol.1*. New York; National Bureau of Economic Research.
- Kuznets, S. (1941). National income and its composition 1919–1938. National Bureau of Economic Research, New York.
- Kubiszewski, I., Costanza, R., Franco, C., Lawn, P., Talberth, J., Jackson, T., & Aylmer, C. (2013). Beyond GDP: Measuring and achieving global genuine progress. *Ecological Economics*, 93, 57–68. <https://doi.org/10.1016/j.ecolecon.2013.04.019>
- Landefeld, J. S., Moulton, B. R., Platt, J. D., & Villones, S. M. (2009). GDP and Beyond: Measuring Economic Progress and Sustainability. *Bureau of Economic Analysis*.
- Landefeld, J.S., Eugene, P.S., & Barbara, M.F. (2008). Taking the Pulse of the Economy; Measuring GDP. *Journal of Economic Perspectives*, 22(2), 193-216.
- Larsen, R.J., Diener, E., & Emmons, R.A. (1984). An Evaluation of Subjective well-being measures. *Social Indicators Research*, 17, 1-18.
- Lasswell, H. D. (1992). *Jurisprudence for a free society; studies in law, science and policy*. New Haven Press.
- Lawn, P., & Clarke, M. (2010). The end of economic growth? A contracting threshold hypothesis. *Ecological Economics*, 69(11), 2213–2223.
- Layard, R. (2003). Happiness: has social science a clue? Lecture 2: Income and happiness : *Rethinking economic policy*. In: Lionel Robbins Memorial Lecture Series. 2003-03-03-2003-03-05.
- Layard, R. (2006). Happiness and public policy: A challenge to the profession. *The Economic Journal*, 116(510), 24-33.
- Layard, R. (2005). *Happiness: Lessons from A New Science*. Penguin, London.
- Lepenies, P. (2016). *The power of a single number, a political history of GDP*. Columbia University Press.
- Marcuss, R. D., & Kane, R. E. (2007). U.S. National Income and Product Statistics: Born of the Great Depression and World War II. *Bureau of Economic Analysis: Survey of Current Business*.
- Marone, H. (2012). Measuring Economic Progress and Well-Being: How to move beyond GDP. *Oxfam America*. <https://doi.org/10.13140/RG.2.1.4103.2089>
- Marshall, A. (1890). *Principles of Economics*. Macmillan and Co.
- Max-Neef, M. (1995). Economic growth and quality of life: a threshold hypothesis. *Ecological Economics*, 15(2), 115-118. [https://doi.org/10.1016/0921-8009\(95\)00064-X](https://doi.org/10.1016/0921-8009(95)00064-X)
- McAllister, F. (2005). Well- being concepts and challenges. Discussion paper prepared for Sustainable Development Research Network.
- McClusker, John J. (2001). *Mercantilism and the Economic History of the Early Modern Atlantic World*. Cambridge University Press.

Articles

- McCulla, S., H., & S. Smith. (2007). *Measuring the Economy: A Primer on GDP and the National Income and Product Accounts*. Washington, DC: Bureau of Economic Analysis: US Department of commerce.
- McGillivray, M. (2007). Human well-being: Issue, concepts and measures. In: M. McGillivray (Eds) *Human well-being: Concept and measurement*. Studies in Department Economics and Policy. Landon: Palgrave Macmillan.
- Michaelson, J., Abdallah, S., & Steuer, N. (2009). *National Accounts of Well-being: bringing real wealth onto the balance sheet*. New Economics Foundation. <https://doi.org/10.1007/s11892-012-0330-3>
- Michaelson, J., Mahoney, S., & Schifferes, J. (2012). *Measuring Well-being: A guide for practitioners*. New Economic Foundation.
- Mitra-Kahn, Benjamin H. (2011). *Redefining the Economy: how the economy was invented 1620*. (Unpublished Doctoral thesis, City University London).
- Mullis, R.J. (1992). Measures of Economic Wellbeing as Predictors of Psychological well-being. *Social Indicators Research*, 26, 119-135.
- Mun, T. (1621). *A discourse of trade, from England unto the East Indies; Answering to diverse objections which are usually made against the same*. Landon UK; Nicholas Okes for Iohn Pyper.
- Myers, D. G. & Diener E. (1995). Who is Happy? *Psychological Science*, 6(1), 10-20.
- Narayan, D., Chambers, R., Shah, M.K., & Patesch, P. (2000). *Voices of poor; crying out for change*. The World Bank.
- NEF (2004). *Chasing Progress beyond Measuring Economic Growth; the power of well-being*. The New Economics Foundation.
- NEF. (2013). *Beyond GDP: Valuing what matters and measuring natural capital*. The New Economics Foundation.
- Neumayer, E. (2012). *Sustainability and well-being indicators*. WIDER research paper, 2004/23.
- Nordhaus, W. D., & Tobin, J. (1972). Is Growth Obsolete? NBER Chapter, In: *Economic Research: Retrospect and Prospect Volume 5*. National Bureau of Economic Research, Inc.
- Nussbaum, M. C. (2000). *Women and human development: The capabilities approach*. Cambridge University Press.
- OECD. (2018). *Beyond GDO: Measuring What Counts for Economic and Social Performance*. OECD Publishing, Paris.
- Osberg, L., & Sharpe, A. (2010). The Index of Economic Well-Being. *Challenge*, 53(4), 25–42. <https://doi.org/10.2753/0577-5132530402>
- Oxfam. (2018). *Reward work, not wealth*. 1–76. <https://doi.org/10.21201/2017.1350>
- Petty, S. W. (1676). *Essays on Mankind and Political Arithmetic*. <https://www.gutenberg.org/files/5619/5619-h/5619-h.htm>.
- Pickett, K. E., & Wilkinson, R. G. (2007). Child wellbeing and income inequality in rich societies: Ecological cross sectional study. *British Medical Journal*, 335(7629). <https://doi.org/10.1136/bmj.39377.580162.55>
- Pickett, K. E., & Wilkinson, R. G. (2010). Inequality: An underacknowledged source of mental illness and distress. *The British Journal of Psychiatry*, 197(6), 426-428. <https://doi.org/10.1192/bjp.bp.109.072066>
- Pickett, K. E., & Wilkinson, R. G. (2015). Income inequality and health: A causal review. *Social Science and Medicine*, 128, 316-326..
- Pilling, D. (2019). *The Growth Delusion; Wealth, Poverty and the Wellbeing of Nations*. Bloombury Publishing.
- Posner, S. M., and Costanza, R. (2011). A summary of ISEW and GPI studies at multiple scales and new estimates for Baltimore City, Baltimore County, and the State of Maryland.

- Ecological Economics*, 70(11), 1972–1980. <https://doi.org/10.1016/j.ecolecon.2011.05.004>
- Ramsey, M. (1992). *Human needs and market*. Aldershot: Avebury.
- Rashbrooke, M. (2014). *The Inequality Debate: An Introduction*. BWB Texts.
- Ryan, R. M., & Deci, E. L. (2001). On Happiness and Human Potentials: A Review of Research on Hedonic and Eudaimonic Well-Being. *Annual Review of Psychology*, 52(1), 141–166. <https://doi.org/10.1146/annurev.psych.52.1.141>
- Sacks, D. W., Stevenson, B., & Wolfers, J. (2012). The new stylized facts about income and subjective wellbeing. *Emotion*, 12(6).
- Samuelson, P. (1938). A note on the pure theory of consumer's behaviour. *Economica* 5, 61-71.
- Samuelson, P. (1961). *The evaluation of social income: capital formation and wealth*. In: F. Lutz and D. Hague (eds). *The Theory of Capital*. St. Martin's Press, New York.
- Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human value? *Journal of Social Issues*, 50, 19-54.
- Scitovsky, T. (1976). *The Joyless Economy*. Oxford University Press, New York.
- Sen, A. (1976). Real National Income. *Review of Economic Studies* 43(1): 19-39.
- Sen, A. (1979). The welfare basis of real income comparisons. *Journal of Economic Literature* 17(1), 1-45.
- Sen, A., (1984). The living standard. *Oxford Economic Papers*, 36, 70-90.
- Sen, A. (1993). Capability and well-being. In: Nussbaum, M. & Sen, A. (Eds) *The quality of life*. Oxford: Clarendon Press.
- Shin, D.C. (1980). Does Rapid Economic Growth Improve the Human Lot? Some Empirical Evidences. *Social Indicators Research*, 8, 199-221.
- Shrotryia, V. K. & Mazumdar, K. (2017). The History of Well-Being in South Asia, In Estes R., Sirgy, M. (eds). *The pursuit of Human well-being – The Untold Global History. International Handbook of Quality of Life*. Switzerland: Springer International Publishing.
- Smith, A. (1776). *Inquiry into the nature and causes of the wealth of nations*. W. Strahan and T. Candell, London.
- Stiglitz, J. E., Fitoussi, J.-P., & Durand, M. (2018). The continued importance of the “Beyond GDP” Agenda. In *Beyond GDP*. <https://doi.org/10.1787/9789264307292-4-en>
- Stiglitz, J. E., Fitoussi, J.-P., & Durand, M. (2018a). The need to follow up on the Stiglitz-Sen-Fitoussi Commission. In *Beyond GDP*. <https://doi.org/10.1787/9789264307292-6-en>
- Stiglitz, J. E., Sen, A., & Fitoussi, J.-P. (2009). *Report by the Commission on the Measurement of Economic Performance and Social Progress*.
- Stiglitz, J. E., Sen, A., & Fitoussi, J. (2010). *Mismeasuring our lives, why GDP does not add up*, New Delhi: Book well Publications.
- Stutzer, A. (2004). The role of income aspirations in individual happiness. *Journal of Economic Behavior and Organization*, 54(1), 89-109.
- Summerfield, D. (2011). Income inequality and mental health problems. *British Journal of Psychiatry*, 198(3).
- Talberth, J., Cobb, C., & Slattery, N. (2007). *The Genuine Progress Indicator 2006: A Tool for Sustainable Development*. Redefining Progress.
- Talberth, L., & Weisdorf, M. (2017). Genuine Progress Indicator 2.0: Pilot Accounts for the US, Maryland, and City of Baltimore 2012-2014. *Ecological Economics* 142, 1-11.
- The Economist. (2016). The trouble with GDP. *The Economist*.

Articles

- Thinley, J. Y. (1999). Values and Development: Gross National Happiness. In Gross National Happiness – Discussion papers (edited by The Centre for Bhutan Studies. Thimphu: Bhutan.
- Tily, G. (2009). John Maynard Keynes and the development of national accounts in Britain 1895-1941. *Review of Income and Wealth*, 55(2), 331–359.
- UN (2020). *World Social Report 2020, Inequality in a Rapidly Changing World*. Department of Economic and Social Affairs. UN Publication.
- Van Praag, B., Bernard, M.S., & Kapteyn, A. (1973). Further Evidence on the Individual Welfare Function of Income; an Empirical Investigation in the Netherlands. *European Economic Review*, 4, 33-62.
- Veenhoven, R. (1991). Is happiness relative? *Social Indicators Research*, 24, 1-34.
- Veenhoven, R. (1993). *Happiness in Nations; Subjective Appreciation of Life in 56 Nations, 1946-1992*. Erasmus University Press, Rotterdam.
- Veenhoven, R. (1995). World Database of Happiness. *Social Indicators Research*, 34(3), 299–313.
- Veenhoven, R., & Hagerty, M. (2006). Rising happiness in nations 1946-2004: A reply to Easterlin. *Social Indicators Research*, 79, 421-436.
- Veenhoven, R. (2018). Happiness in Nations: Pursuit of greater happiness for a greater number of citizen. In; Snyder, C.R., Lopez, S.J., Edwards, L.M., & Marques. S.C. (eds) *The Oxford Handbook of Positive Psychology, 3rd Edition*. Oxford Handbook Online, Scholarly Research Reviews.
- Wade, R.H. (2006). Should we worry about income inequality? *International Journal of Health Service*, 36 (2), 271-294.
- Wilkinson, R.G. (2005). *The impact of inequality; How to make sick societies healthier*. NY; New Press.
- Wilkinson, R. G., and Pickett, K. E. (2006). Income inequality and population health: A review and explanation of the evidence. *Social Science and Medicine*, 62(7), 1768–1784. <https://doi.org/10.1016/j.socscimed.2005.08.036>
- Wilkinson, R.G. & Pickett, E. K. (2007). Problems of relative deprivation; why some society doo better than other. *Social Science Medicine*, 62. 1768-1784.
- Wilkinson, R. G., & Pickett, K. E. (2008). Income inequality and socioeconomic gradients in mortality. *American Journal of Public Health*, 98(4), 699-704.
- Wilkinson, R. G., & Pickett, K. E. (2009). Income Inequality and Social Dysfunction. *Annual Review of Sociology*, 35(1), 493–511.
- You, J., S., and Sanjeev K. (2005). A comparative study of inequality and corruption. *American Sociological Review*, 70(1), 136-157.