

## *Extended Abstract*

# Tracing sustainability in the long run. Genuine Savings estimations 1850 - 2018\*

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This article introduces a new historic database of global Genuine Savings (GS)<sup>1</sup>, a widely used economic indicator of sustainable development. The database is the first attempt to collect and collate existing estimates by several scholars to create a consistent database with a wide range of geographic coverage. It builds on work by researchers that has been primarily published in environmental economics field journals (Rubio, 2004; Lindmark and Acar, 2013; Greasley et al., 2014; Hanley et al., 2015; Greasley et al., 2017). This work is complementary to existing collaborative research programmes in economic history, namely the Maddison Project (Bolt and van Zanden, 2014), by providing sustainability contextualisation to historic income growth. It also relates with recent work on historic measures of well-being (Prados de La Escosura, 2021). Through the creation of this new database we hope to give important historical context to sustainability debates in the present.

There is great interest from international organisations and policy makers in how the management of natural resources affects human wellbeing (e.g., (Atkinson, 2015)). For example, the 2021 *Dasgupta Review* argues that ‘in order to judge whether the path of economic development we choose to follow is sustainable, nations need to adopt a system of economic accounts that records an inclusive measure of their wealth’. The concept of *Inclusive* (or *Comprehensive*) measures the value of produced, natural, and human capital in a country. Wealth includes all assets from which people can obtain well-being, either directly or indirectly. Changes in wealth per capita, whether positive or negative, are indicators of sustainable or unsustainable development (Hanley et al.,

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<sup>1</sup>Interchangeably known as ‘Comprehensive Investment’ and ‘Adjusted Net Savings’.

2015). This conceptual approach has been adopted by both the UN Environmental Programme (UNU-IHDP, 2012, 2014, 2018) and the World Bank (World Bank, 2006, 2011, 2018, 2021).

The recent Covid-19 pandemic has highlighted how the global economy is vulnerable to ‘Global Catastrophic Risks’ (Bostrom and Ćirković, 2008). One of the most prominent of such risks is global climate change and its interaction with other risks, such as pandemics (Ord, 2020). The fact that widely used methods for measuring economic activity are 20<sup>th</sup> century constructs (Coyle, 2017; Masood, 2016) and focus on income (GDP) rather than a nation’s comprehensive wealth has partially blinded us to these risks. Moreover, there is now a growing recognition that maximizing year-on-year growth in GDP is unlikely to be a realistic target for the 21<sup>st</sup> century due to numerous negative environmental consequences (Rockström, 2009; Steffen et al., 2015). The recent IPCC (2021) report included dire warnings of the dangers of future climate change, which, in the main, has been a direct consequence of following a GDP maximization goal. There is now a growing call within the economics profession for changes to be made to how we measure economic activity, economic development, and well-being more generally (Stiglitz et al., 2009, 2018; Polasky et al., 2019). Covid-19 has brought home the importance of our natural capital as Dasgupta (2021) accentuates the link between pressures on biodiversity (part of wealth) and Covid-19, arguing that a greater focus on wealth would have given policymakers warnings about possible risks.

Despite such calls for change, GDP continues to be used, often in policy circles, as the main and often, only, measure of choice to guide decisions designed to increase welfare, in part because it is simple to calculate, but also because it allows country performance comparisons. Politicians can point to GDP growth as a measure of their ‘success’, both locally and globally.<sup>2</sup> Moreover, the economic history community has shown little engagement with recent developments in the measurement of wealth in its broadest sense. Instead focus has been on extending GDP estimates further back in time (Bolt and van Zanden, 2014; Broadberry et al., 2015). Therefore our estimates of the change in wealth will complement and nuance these research efforts.

Ongoing environmental and developmental challenges compel us to focus on more comprehensive welfare indicators than GDP. These new measures should address long-term sustainability. A recent article in *PNAS* calls for a greater integration of both economics and sustainable development (Polasky et al., 2019). This is the core concept informing the GS approach. Seeing wealth as the foundation of future income and hence welfare, means that changes in wealth (saving/investment) provide an indication of the feasibility of future, sustainable, development paths. This article is the first step to produce such comprehensive welfare indicators, focusing more on stocks (e.g., wealth), including natural capital, which provide forthcoming generations with the capabilities to increase their future well-being, rather than on flows (e.g., income), conventionally measured by GDP, which simply measure annual outcomes without recourse to their long term implications.

The historical focus is necessary to provide evidence as to whether past policies and choices, guided by GDP as a welfare enhancing measure, have maximized (or even increased) well-being, sustainably. Historical data and outcomes provide our only measures to test the GS approach.

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<sup>2</sup>Surprisingly, the Agenda 2030 has settled enormous goals such as reducing poverty and clean energy sources, but there is not mention to change our welfare indicators

Furthermore, historical data would enhance current metrics and provide a deeper understanding of natural capital, human capital, technological change, and environmental degradation in the long run, to guide policy for the future.<sup>3</sup> Much of the current work on environmental economics considers uncertain, unknown futures, (scenarios or predictions), which may simply never exist.<sup>4</sup> However, insights and data from the past can test alternative modelling approaches to inform policymaking in the present and the future. Fenichel et al. (2016) argue that a better understanding of how past changes influence present sustainability outcomes, can be used to forecast the impact of future changes in sustainability.

If GS methods are to inform sustainable social, economic, and environmental futures, they should, as a minimum, be able to explain the past. We will therefore analyse whether historical experiences can explain variations in past and current levels of comprehensive/inclusive wealth within and across countries and what future sustainable development prospects would look like. If the GS concept is to complement or replace other indicators, it requires evidence which includes long run estimates for a wide range of countries. However, there are a lack of standardized methodologies across and within country studies of GS (Hanley et al., 2015).

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<sup>3</sup>Recent studies are going in the same direction, such as the *Dasgupta Review* and the inclusion of Natural Capital in UN accounting

<sup>4</sup>climate change uncertainty has received increasing attention since the 2000s (Tol, 2003)

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