Beyond GDP: Reassessing Living Standards and Societal Progress Pre-Industrial Revolution

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Abstract. From the perspective of GDP, there is a huge difference in the growth rate of people's living standards before and after the Industrial Revolution. However, this does not mean that people's living standards before the Industrial Revolution were stagnant for a long time. This article sets aside GDP and analyzes the development of people's living standards before the Industrial Revolution from other aspects. It is believed that there were many changes before the Industrial Revolution that could not be reflected by GDP, which also promoted the improvement of living standards. And this period of slow growth is an accumulation of rapid future development.

Keywords: GDP; Living Standard; Industrial Revolution.

1. Introduction

The world before the Industrial Revolution is often seen as a period of slow and unremarkable progress, as changes in living standards were less noticeable compared to those during and after the revolution. This perspective is mainly rooted in the use of modern metrics like GDP to gauge living standards, overshadowing meaningful variations in pre-Industrial life (Pope, 1993).

To avoid the impact of GDP data on machinery, this article re-evaluates the living standards of humans before the Industrial Revolution through the Amartya Sen's Approach, resulting in an assessment that more accurately reflects the complex nature of human living standards. This result allows us to better understand the essence of the slow growth in living standards before the Industrial Revolution, so that we can better face future life.

2. Amartya Sen's Approach

GDP encapsulates the total value of goods and services produced within a nation but overlooks the distribution of wealth and the disparities in individual well-being. Spillover from overall economic growth is still far from benefiting every individual equally, and using GDP alone will hide nuanced quality of life differences across society. Amartya Sen's Approach provides a nuanced alternative to traditional measures like GDP, introducing a complex evaluation of individual welfare by considering a vector of achieved functionings (Kuklys, 2004).

The vector $b$ is measuring the state of being and activities of individuals, represented by $i$, market and non-marketable goods, $q_i$, and societal environmental situations, $z_i$ are the major factors taken into account, $Q_i$ is the research constraint. They are transformed synthetically into space of characteristic by function $c$, and eventually mapped by personal conversion function $f$ into an individualized index. The inclusion of non-marketable goods is a great leap forward to amend the underestimation to living standards before the industrial revolution, from the previous viewpoint of money metric, they have always been off-the-stage.

By incorporating socio-environmental factors and resource availability, Sen's approach sheds light on individual living standard amidst social disparities. The emphasis on individual autonomy and capabilities to lead a life one has reason to value, rather than mere collective resources, bridges the gap between macroeconomic metrics and micro-level living standards (Kuklys, 2004), resulting to evaluations that more accurately reflect the complex nature of human living standards. Drawing upon Sen's approach, this paper examines the nuanced yet significant shifts in living standards during the
Song Dynasty and the "Big Divergence" era. These historical insights are not meant to equate early advancements with the Industrial Revolution's massive strides but to recognize that the latter was not a sudden emergence; it was the culmination of progressive developments.

3. The Improvement of Living Standards in the East and West

Let's start with the Song Dynasty (960-1279) in the East. Before the Song Dynasty, there were obstacles to the dissemination of knowledge, and nobles consciously hindered the dissemination of knowledge. The right to be an official was monopolized by the great nobles, and land was concentrated in the hands of the great landlords and nobles. There is a huge unfairness between ordinary people and aristocrats in various aspects such as economy and politics. Social inequality has consistently jeopardized the well-being of vulnerable groups, hindering overall human advancement. During the Song Dynasty in China, proactive measures were taken to address social inequality, significantly improving people's quality of life, closely aligned with Amartya Sen's principles.

After hundreds of years of war, the influence of the nobility and landlords on politics was greatly weakened, and the invention of printing made the dissemination of knowledge difficult to quickly reduce. The Song Dynasty was able to alleviate social inequality through reforms in various aspects such as politics and economy. A combination of policy measures transformed the socio-economic landscape. Flexible land policies led to a substantial increase in arable land, yielding significant boosts in agricultural productivity and widespread income growth. These measures were coupled with policies favoring agriculture over commerce (Xidong, 2023), safeguarding the rights of vulnerable farmers. The meritocratic civil service examination system, or keju (Sun & Wei, 2015), enabled merit-based appointments, allowing those marginalized in power to join officialdom (Kung, 2022). A growing commodity economy, alongside relaxed commerce policies, empowered merchants—who were once at the lowest societal rung—to amass wealth and attain social mobility (Chan, 2002).

Notably, female rights saw groundbreaking improvements. In divorces, women gained nearly equal rights to men (Wu, 2019), with the ability to initiate cases and retain premarital assets. Such arrangements liberated women from patriarchal constraints, fostering greater social and economic freedom. These multifaceted strategies alleviated social inequality while enabling the realization of individual capabilities and autonomy—core tenets of Sen's philosophy.

The historical understanding of the East-West developmental divide frequently highlights the Industrial Revolution as the defining moment (Nardinelli, n.d.). Indeed it marked the era that scientific, technological, and capitalist enterprise sprung. Yet, evidence of Europe's advantage in marketable products and real wages, even before the Industrial Revolution, underscores its early economic strength (Lin, 1995). Substantial evidence suggests that the 'Great Divergence,' or marked developmental split, began before the Industrial Revolution.

The social foundation of the East is built on land, and all social changes revolve around land. Unlike the East, the changes in the West revolve around exploring the ocean. Central to this era was the growth of maritime expeditions and trade routes. This surge in maritime activities opened new avenues for trade and resources, introducing exotic goods to Western societies and elevating material quality of life (Matthew, 2022). Crucially, the benefits weren't exclusive to aristocrats; wages of Western commoners had experienced substantial growth (Maddison, 2007).
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Figure 1 Evidence for changes in Great Divergence

Through trade, people's living standards have been greatly improved. The improved living standards spurred wealth pursuit, driving innovations in shipbuilding, navigation, and cartography. The treasures and resources gained from global trade fueled investments in research and development. This laid the groundwork for the transition from artisanal and agrarian economies to industrialized ones. In the meantime, the schooling system sprawled, educating on average 20% circa of male and 5% circa of female population to literacy (Grendler, 1990), and thus render them more versatile to occupations other than physical labor; serfdom were outlawed and labors were emancipated to fully exercise their free will; small to middle size urban settlements increased to emerge, the proximity of urban space and convention of ‘city air makes people free’ invited peasants especially those previously as serfs, to engage in commodity trading and handicraft industry. These transformations are important prerequisites for the Industrial Revolution to occur.

Asia empirically overshadows contemporary Europe with its momentum from growing size of population and cropland. It is only a product of inertia from an old growth model emphasizing quantity, that brought profound backlash in improving unit productivity. According to the CobbDouglas function (Korinek & Stiglitz, 2021), in a situation with sufficient supply of labor, return of capital input is exponentially outnumbered by that of labor input. Therefore in Asia, it seems the natural choice to overemphasize labor, and the reluctance in social changes came to be explained (Lin, 1995). Comparatively, in Europe, the lack of labor force made marginal output less desirable, pushing economic agents to seek growth through science, societal change, technology, and expeditions. The scientific revolution, and revival of trial-based experiments empowered the technological innovation; Catholic christianity used to restrain people from fulfilling themselves but to serve the god solely, the humanist movement drew people to focus on being and potential of man instead of servant of the god, additionally, Lutheran reform empowered individuals with doctrine to strive for self-fulfillment, and there the birth of proto-capitalism is given (Weber et al., 2002). Industrial revolution is a synthesis of humanism, capitalism and colonialism, if missing any piece of puzzle as Asia did, the revolution wouldn’t have occurred.

3. Conclusion

From the data of GDP, there is a huge difference in the growth rate of GDP before and after the Industrial Revolution, but this does not mean that the development of human civilization before the
Industrial Revolution is not important. There are many changes that cannot be characterized by GDP that can effectively improve people's living standards. Although this change may be different between the East and the West. In the East, the Song Dynasty's commitment to equality, demonstrated by policies and reforms, emphasizes the need to protect minority interests and enhance individual abilities. Similarly, in the current era, although the development of GDP is important, many things that cannot be reflected by GDP and other figures are also important. The modern world should incorporate socio-environmental metrics, health, education, and well-being into economic evaluations, aligning with social justice and freedom, to foster a resilient economy prepared for significant transformations like the Industrial Revolution.

In the West, trade stimulated people's exploration of the world, which improved people's living standards at that time, but more importantly, this exploration ultimately provided a good prerequisite for the industrial revolution. The "Great Divergence" analysis shows that slow growth may signal transformation, not a dead end. It demands a reevaluation of economic structures, a renewed focus on innovation, and the abandonment of hindering old paradigms. Additionally, by understanding productivity issues as seen in Europe and Asia during this era, we can craft strategies to overcome stagnation, emphasizing quality and making wise investments to lay the groundwork for the next major development phase.

As we stand at the threshold of a new era, seeking solutions to the pressing dilemmas of slow growth and inequality, the lessons from these epochs invite us to reimagine our economic structures and societal norms. It is within our grasp to shape a future that values both material progress and human flourishing, embracing innovation and inclusivity. In doing so, we may not only navigate the challenges of the present but set the stage for a new revolution in living standards, one that resonates with the aspirations and needs of our time.

References


