

Human Capital in Ethiopia, Indonesia, and Trinidad and Tobago

Trends and policy implications

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Key Messages

- Human capital increased significantly in Indonesia and Ethiopia between 1995 and 2020 but stalled toward the end of the period. In Trinidad and Tobago, human capital declined precipitously after the 2008 global recession, essentially cancelling any gains the country had made in accumulating it prior to that period.
- Human capital represents more than half the stock of comprehensive wealth in all three countries. Thus, if nothing is done to bring it back to its historical rates of increase, well-being will eventually be compromised. In Trinidad and Tobago, such well-being losses may be already occurring.
- Expanding human capital will require investments in improving workers' health and education and new technologies to boost productivity. Diversifying human capital away from overly concentrated sectors, like agriculture in Ethiopia or services in Indonesia, or from sectors where it is focused on a declining industry, like petroleum in Trinidad and Tobago, is essential to maintaining well-being in the long run.
- Investment in statistical capacity to generate disaggregated data in areas such as wages will improve the monitoring of human capital and better inform decision making.

For more than half a century, GDP has been accepted as the most relevant measure of a country's economic success. GDP is defined as the aggregate measure of income in an economy during a given time period. However, it is often used inappropriately, as a proxy measurement for well-being more broadly. A recent policy brief published by the UN Secretary-General invites member states to move beyond GDP by measuring what truly matters for sustainability and prosperity (United Nations, 2023). It demonstrates just how damaging it can be to rely on GDP as a broad measure of progress. This note outlines the shortcomings of GDP as an



indicator of progress. It suggests more meaningful measures that meet the UN Secretary-General's criteria for robust metrics that can move the world beyond GDP: concise, widely accepted, comparable, iterative and dynamic, country-owned, scientifically robust, statistically sound, and applicable to decision making (United Nations, 2023).

Box 1. Comprehensive/inclusive wealth measures five types of assets:

- **Produced capital** consists of roads, railways, ports, houses, machinery, and other manufactured assets.
- **Natural capital** includes market-oriented natural resources such as timber, minerals, oil, and gas. It also includes the non-market economic value of ecosystems, such as wetlands, and forests.
- **Human capital** comprises the collective knowledge, skills, and capabilities of the labour force—the result of lifelong learning in both formal and informal settings.
- **Financial capital** includes bank deposits, stocks, bonds, and other forms of financial assets.
- **Social capital** represents the norms and behaviours that structure and support productive interactions between members of society, including safety, inclusivity, and trust in institutions.

Sources: International Institute for Sustainable Development (IISD), 2018; World Bank, 2021.

While gains in GDP are, under certain conditions, linked to improved human well-being, there are well-documented negative impacts on well-being associated with GDP growth. These negative impacts can include the depletion of natural resources, increasing greenhouse gas emissions, and a growing divide between the rich and poor. In addition, GDP figures do not capture the value of important long-term investments in human well-being, such as education and health care, or the value of many measures to address climate change. There is a growing body of applied research to identify indicators intended to address the shortcomings of GDP as a measure of well-being. Such indicators are intended to better reflect our understanding of prosperity. Among the various indicators, comprehensive or inclusive wealth (C/IW) is seen as a methodologically sound measurement that complements GDP and meets the criteria of the new measures laid out by the UN Secretary-General (United Nations, 2023). C/IW is a valuable instrument for policy-makers to use to move beyond GDP and better reflect the foundations of prosperity and well-being in their decisions.

Partial findings of the project on Measuring Comprehensive Wealth to Promote Sustainable Development¹ carried out by IISD are summarized below. This project developed C/IW estimates for Ethiopia, Indonesia, and Trinidad and Tobago and identified their relevance to policy making. The findings reported here focus only on human capital (see Box 1 for a description of all five elements of the C/IW portfolio). Additional notes in this series focus on the results relating to other elements of the C/IW portfolio.

¹ See more on the project here: <https://www.iisd.org/projects/measuring-wealth-promote-sustainable-development>



What Is Human Capital?

Human capital is defined as the set of skills, knowledge, health, and experiences that individuals accumulate over their lifetimes. According to the Organization for Economic Co-operation and Development (OECD, 2001), human capital constitutes the “knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being” (p. 18). One of the challenges in measuring human capital is its intangible nature, resting as it does on inherent attributes of individuals, such as interpersonal skills. The quantification of human capital, therefore, generally focuses either on measuring the returns on these attributes in activities (usually economic activities but sometimes also household activities) or on the costs of shaping and expanding them through education and health care (Task Force on Measuring Human Capital, 2016). A common method, and the one used in a highly simplified form in this project, is the lifetime income approach, which views human capital as the present value of income flows workers of different age, gender, and education groups are expected to earn over their lifetimes (Jorgenson & Fraumeni, 1989). Due to the lack of disaggregated data on earnings based on these characteristics, the approach here focused on total worker earnings. This approach allowed a breakdown of human capital by industry but not by age, gender, or level of education. Our results are presented for the period 1995 to 2020² in real (inflation-adjusted) per capita terms in both local currency and United States dollars (USD)³ for comparison.

Trends for Human Capital

Human capital is the major component of wealth in most countries, accounting for 54% of national comprehensive wealth on average in 2018, according to the World Bank (2021). Overall, average human capital per capita increased worldwide by about 36% over the period 1995 to 2018. In general, the share of human capital in total wealth tends to increase as countries develop economically. This growing share is explained by a number of factors, including higher worker productivity—and, therefore, wages—boosted by technical innovation, greater levels of education, and improved health care.

Our results show that all countries in the study experienced growth in human capital, though this growth was not continuous and, especially in Trinidad and Tobago, was not sustained. In Indonesia, real per capita human capital grew, on average, by 4.4% annually, from IDR 316 million (USD 67,200) in 1995 to nearly IDR 900 million (USD 190,700) in 2020 (Figure 1). Most of Indonesia’s growth occurred from 2005 to 2019. The value in 2020 represented a 6% decline from the 2019 peak, possibly due to the impact of the COVID-19 pandemic.

In Ethiopia, real human capital per capita was estimated at ETB 51,745 (USD 6,073) in 1994/1995 (Figure 2). The value grew, somewhat unevenly, to reach ETB 135,659 (USD

² Ethiopian results are presented for fiscal rather than calendar years, so run from 1994/1995 to 2019/2020.

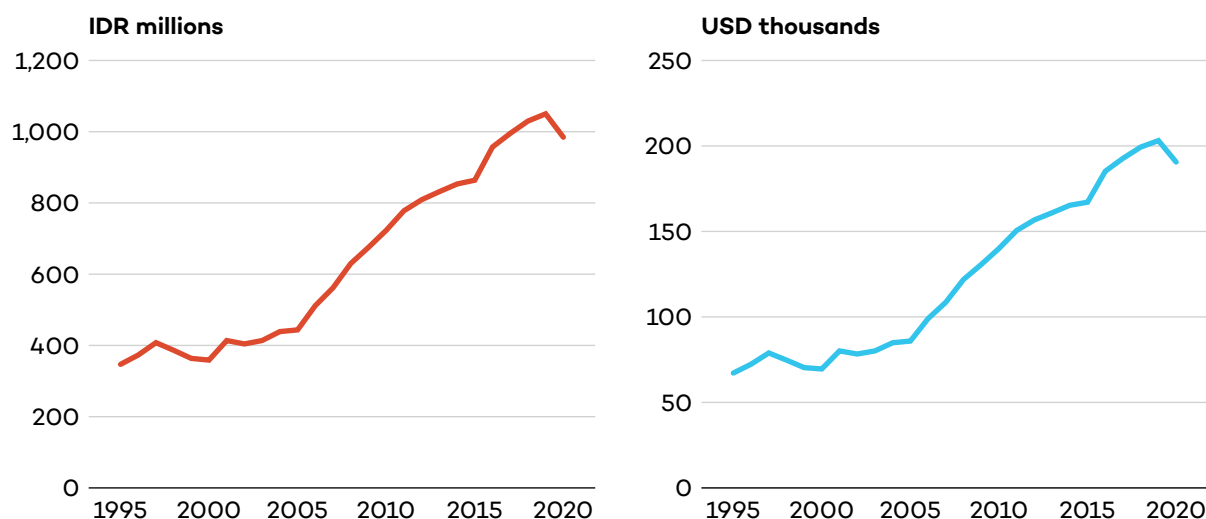
³ All values in constant local currency use 2017 as the base year (and 2016/2017 as the base for Ethiopia). All values in constant USD also use 2017 as the base year and the 2017 purchasing power parity (PPP) conversion rate from local currency to USD as reported by the World Bank (n.d.-b). The application of the 2017 PPP conversion rate to the entire time series results in identical growth trends over time, regardless of whether the results are presented in constant local currency or constant USD.



15,921) in 2020. Overall, the increase was 4.3% on average over the 25 years. The growth ended abruptly in 2017/2018 (too early to be the result of the pandemic or the conflict in Tigray). This stagnation in human capital raises concerns about the future direction of Ethiopian well-being.

Unlike Indonesia and Ethiopia, Trinidad and Tobago experienced near stagnation in human capital over the period. Between 1995 and 2020, real human capital per capita grew on average by only 0.5% annually (Figure 3). This stagnation was the net result of two opposing paths taken by human capital. The value initially increased strongly from TTD 580,600 (USD 139,477) in 1995 to a peak of around TTD 906,500 (USD 217,779) in 2008. This corresponded to a 56% increase in less than 15 years. However, after the global financial crisis in 2008, the value began to decline, falling to TTD 646,509 (USD 155,319) in 2020—a 29% decrease from its peak. The decline of human capital after 2008 essentially cancelled out the growth prior to 2008, leaving the average Trinidadian and Tobagonian with little more human capital at the end of the period than at the beginning.

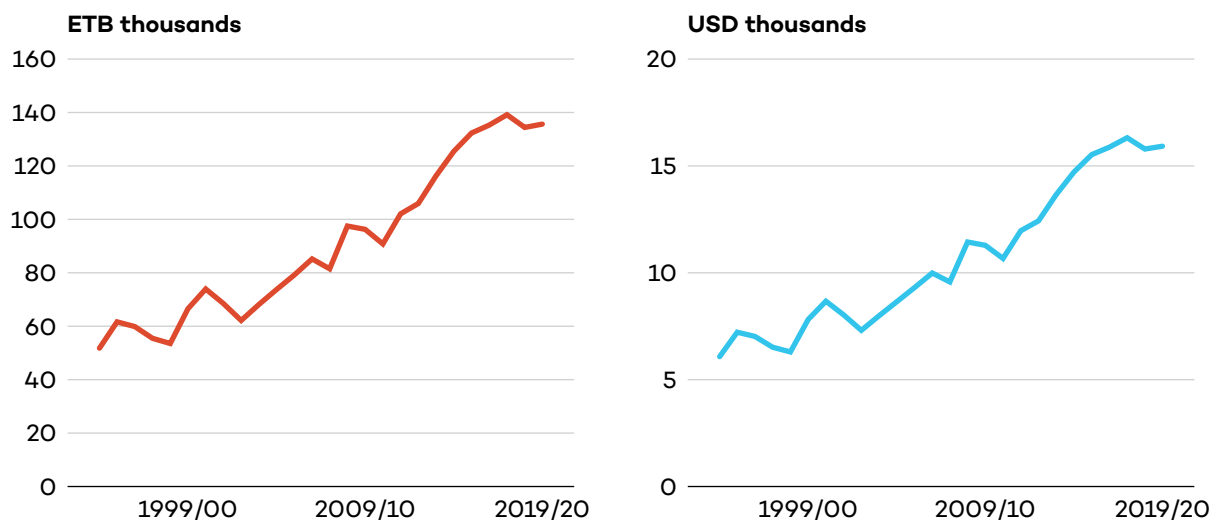
Figure 1. Indonesia: Human capital per capita at 2017 prices



Source: Authors' calculations based on data provided by BPS-Statistics Indonesia and the World Bank.

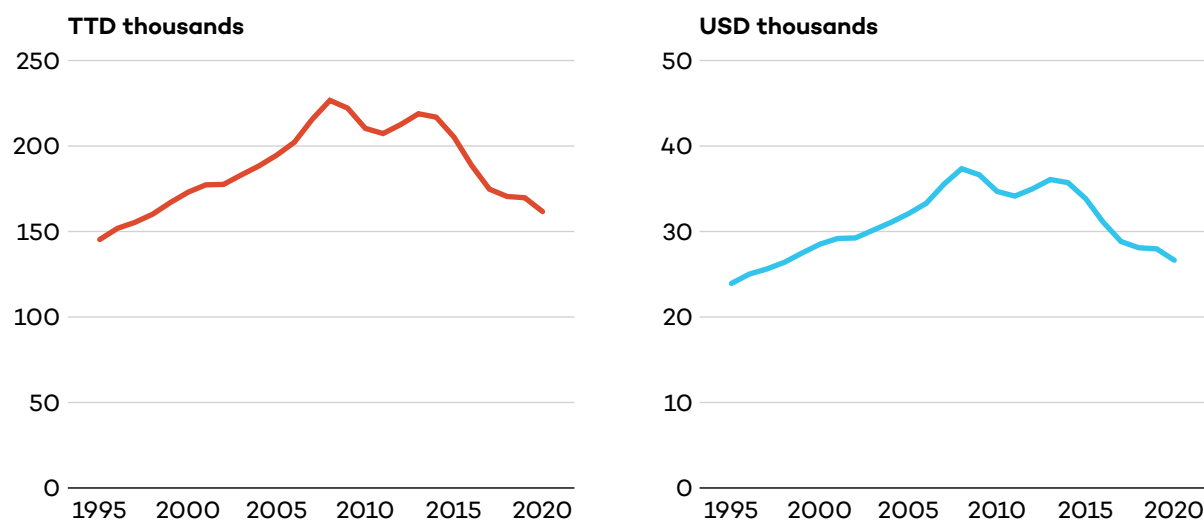


Figure 2. Ethiopia: Human capital per capita at 2017 prices



Source: Authors' calculations based on data provided by Ethiopia's Ministry of Finance, the National Bank of Ethiopia, the Central Statistical Agency, and the World Bank.

Figure 3. Trinidad and Tobago: Human capital per capita at 2017 prices



Source: Authors' calculations based on data provided by the Central Statistical Office and the World Bank.

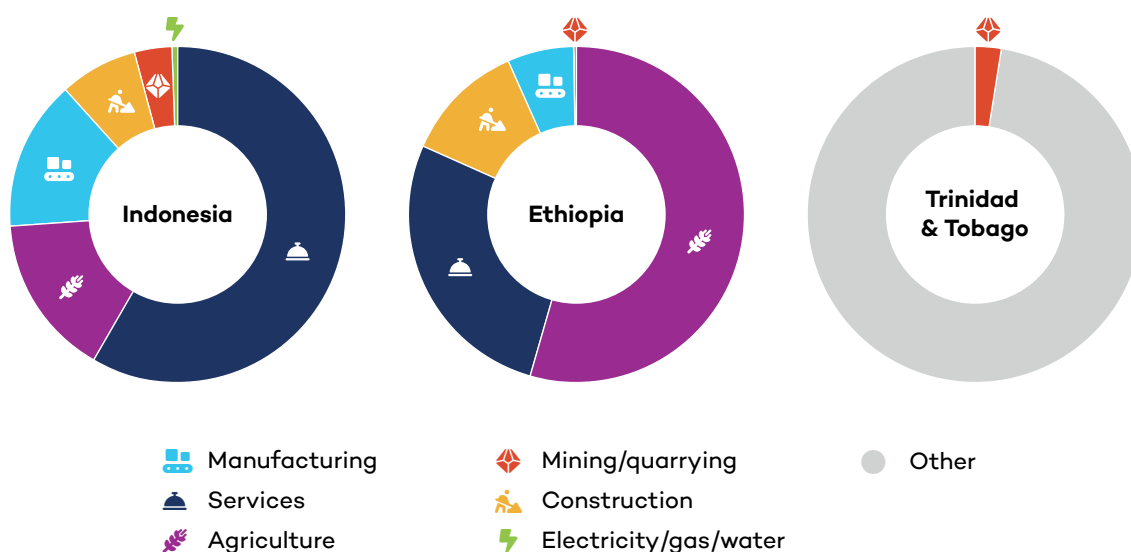
The sectoral distribution of human capital in 2020, as reported in Figure 4, shows that Ethiopian human capital was concentrated in the agriculture sector, which contributed nearly 55% of human capital. It was followed by the service sector, with a contribution of 27%. Education, notably, contributed to only 2% of human capital. In Indonesia, the service sector contributed the most to human capital, with a nearly 60% share. Agriculture and manufacturing are the second- and third-largest contributors, with a total share of 15.3% and 14.5%, respectively.

Due to data challenges, human capital across sectors for Trinidad and Tobago was computed for the petroleum industry only (represented by the mining/quarrying industry in Figure 4),



although the value includes both petroleum extraction and refining. The petroleum industry contributed only 2.7% of human capital in 2020. This low share is explained by a number of factors. The industry is more capital intensive than labour intensive due to its reliance on buildings, infrastructure, machinery, and equipment to extract and process fossil fuels. Another reason is the decline of the industry. At its peak in 2005, the industry accounted for 7% of human capital. Since then, the industry has been in decline. Since 2007, the labour force employed in the petroleum industry has declined by about 41% to 12,800 workers in 2020, or about 2.2% of the total employed labour force (Central Bank, 2024). In 2007, the industry accounted for 3.7% of employment.

Figure 4. Distribution of human capital in Indonesia, Ethiopia, and Trinidad and Tobago



Source: authors’ calculations based on data provided by BPS-Statistics Indonesia; Central Statistical Office (CSO) – Trinidad and Tobago; Ethiopia’s Ministry of Finance; National Bank of Ethiopia; Central Statistical Agency – Ethiopia; and the World Bank.

Note: Mining/quarrying for Trinidad and Tobago is represented by the petroleum industry, which includes both extraction and refining. Data on other mining/quarrying is not available. Petroleum production dominates this industry in Trinidad and Tobago, so the total share of the mining and quarrying industry would not be much greater than this.

Policy Implications

Human capital is a major component of comprehensive wealth in all countries, accounting for over half of wealth on average (World Bank, 2021). Thus, changes in human capital play an oversized role in driving total wealth and well-being. Given this fact, it is crucial that decision-makers ensure human capital grows or, in the worst-case scenario, does not decline over time. The analysis of the three countries in this study reveals uneven progress on this front. In particular, the following observations can be noted:

- **Recent years have seen declining human capital.** Despite the remarkable progress made by the countries to expand their human capital, recent trends suggest that earlier



gains are not being sustained, especially not in Trinidad and Tobago. There, human capital fell by 29% between 2008 and 2020 in an alarming and unsustainable trend. The 6% decline in Indonesia after 2019 was also dramatic, though it is likely explained by the COVID-19 pandemic. Still, it will be worrisome if business continues as usual, something that additional analysis would be required to reveal. In Ethiopia, human capital stagnated after 2017/2018 for no obvious reason. Again, further analysis is required to see if this trend has continued. Given the internal conflicts in that country between 2020 and 2022, it is likely that it has.

- **There is a lack of diversification in human capital.** Human capital is concentrated in services in Indonesia and agriculture in Ethiopia. In Trinidad and Tobago, data did not permit a detailed analysis of the concentration of human capital, but the country has a diversification problem of another sort: on average, a third of its GDP comes from the petroleum industry. To avoid the stagnation that a concentration of income and wealth can lead to, it is important for these countries to invest in creating human capital across diverse sectors, especially those with high growth potential. This strategy will foster resilience against external shocks such as commodity price swings, conflicts, or disasters. For Trinidad and Tobago, this means creating human capital in sectors not related to the declining petroleum industry. The country has identified seven such areas in its diversification roadmap: manufacturing for export, nearshore financial services, creative industries, tourism, energy services, digital platforms and business process outsourcing, and trans-shipment, ship repair, and maritime-related services (Ministry of Planning and Development, 2024).
- **Investment is required to increase productivity in key sectors.** In agriculture, which is especially important for Ethiopia, increasing productivity requires policies to increase mechanization, as well as improved seeds, chemical inputs, and practices to reduce land degradation, pollution, and biodiversity loss. In the service sector, digital transformation (including digitization and digitalization) should play a key role. A prerequisite for this transformation is internet access for countries like Ethiopia. World Bank (n.d.-a) data shows that in Ethiopia, only 17% of people had access to the Internet in 2021, compared to 62% in Indonesia and 79% in Trinidad and Tobago.
- **Investment in education and health is critical.** Human capital is more valuable when workers are healthy and well educated; only then will their productivity be maximized, no matter what investments are made in produced capital to help boost productivity. It is therefore essential to invest in educational institutions and hospitals and recruit qualified teachers and health practitioners. The pandemic illustrated the importance and fragility of the health sector. The entire world economy slowed due to the rapid spread of COVID-19, which the medical system could not contain.
- **Investment must be made in data capacity.** One of the caveats of this research is the lack of disaggregated data. This constraint forced us to rely on a simplified method to measure human capital using aggregated labour income data. A more sophisticated approach that would permit distinguishing human capital by age, gender, and level of education would require investments in additional data collection. Data on wages disaggregated by age, gender, and level of education were not fully available from national sources.



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