Office for National Statistics

Article

UK inclusive income: 2005 to 2021

Estimates of sustainable economic progress encompassing a broad range of economic activities, such as unpaid household services, ecosystem services, and more.

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1 . Main points

- Gross inclusive income (GII) per person increased by 4.2% in 2021, following a decrease of 7.5% in 2020.
- Net inclusive income (NII) per person increased by 11.1% in 2021, following a decrease of 15.3% in 2020.
- These data represent a methodological step forward, incorporating a wide range of components in these experimental “beyond gross domestic product (GDP)” measures of economic progress, which capture a broader range of activities than GDP; these data reveal new features of this wider perspective of the economy, though there is still a need for further research to complete the framework.
- GII per person peaked in 2017, before decreasing slightly in 2018 and 2019 (primarily reflecting decreases in unpaid household nutrition and adult care services), and then decreasing more substantially in 2020.
- NII per person decreased in 2016, primarily because of an increase in the depreciation of human capital, while the fall in GII per person in 2018 also contributed to a fall in NII per person.
- The weaker trends in GII and NII between 2017 and the coronavirus (COVID-19) pandemic reflect a more complex picture of economic welfare than more market-centered measures, such as GDP.

2 . Understanding these data

Inclusive income measures

Inclusive income estimates, developed by us and last published in our UK inclusive income: 2005 to 2019 article, provide a broader measure of economic welfare as observed by the UK population. They reflect the economic production of goods and services from both paid activity (contained in gross domestic product (GDP)) and other flows of services received without payment, including those derived from natural capital as well as unpaid household services, many of which are currently excluded from the National Accounts. The result is measures of economic progress which are inclusive of activity and assets beyond those currently included in GDP. More information about the concepts underlying gross inclusive income (GII) and net inclusive income (NII) can be found in our Inclusive income methodology.

GII per person, as estimated in this publication, builds on the concept of GDP with the following amendments:

- quality adjustment of public service estimates
- inclusion of unpaid household services within the production boundary
- inclusion of carbon sequestration and urban heat regulation within the production boundary
- expansion of the definition of intellectual property products (that is, intangible investment) to include products currently uncapitalised in the National Accounts

NII per person is conceptually similar to net national disposable income (NNDI) from the National Accounts, and builds on GII by:

- subtracting the capital consumption (that is, depreciation) of fixed assets (including the depreciation of additional intangible capitals)
- subtracting the depreciation of household durables
- subtracting the depreciation of human capital
- subtracting the depletion of oil and gas
- subtracting the value of degradation to the atmosphere from UK carbon emissions
- adding income from abroad, minus transfers from abroad

Throughout this article and accompanying datasets, both GII and NII are presented on a per person basis.

This second inclusive income publication is a significant step forward, but still a work in progress and includes some small residual data gaps as well as some methodological improvements. Section 8: Future developments sets out these data gaps and work plans around them.

There have been difficulties in compiling data for the period 2020 and 2021 during the coronavirus (COVID-19) pandemic. We caution that uncertainty around these data is higher than usual. Specifically, estimates for unpaid childcare provided by households in 2020 have been produced using partial, less comprehensive data sources. More information about data estimation issues is detailed in Section 7: Data sources and quality.

These inclusive income metrics are a part of the our Beyond GDP programme and reflect a wider perspective of economic activity that broadly aligns in flows terms to the inclusive capital stocks (or “inclusive wealth”) described in the Dasgupta Review (2021) of the Economics of Biodiversity. That review sets out how economic progress can be better evaluated through the measurement of a country’s inclusive capital stock, the sum of its produced capital (that is, capital already included in the National Accounts), human capital, and natural capital. We have already published articles beginning to measure the UK’s inclusive capital stock, and our inclusive income research aims to develop flows measures which are conceptually coherent with these stocks. This includes incorporating the same expansion of the asset boundary, as well as a corresponding expansion of the production boundary.

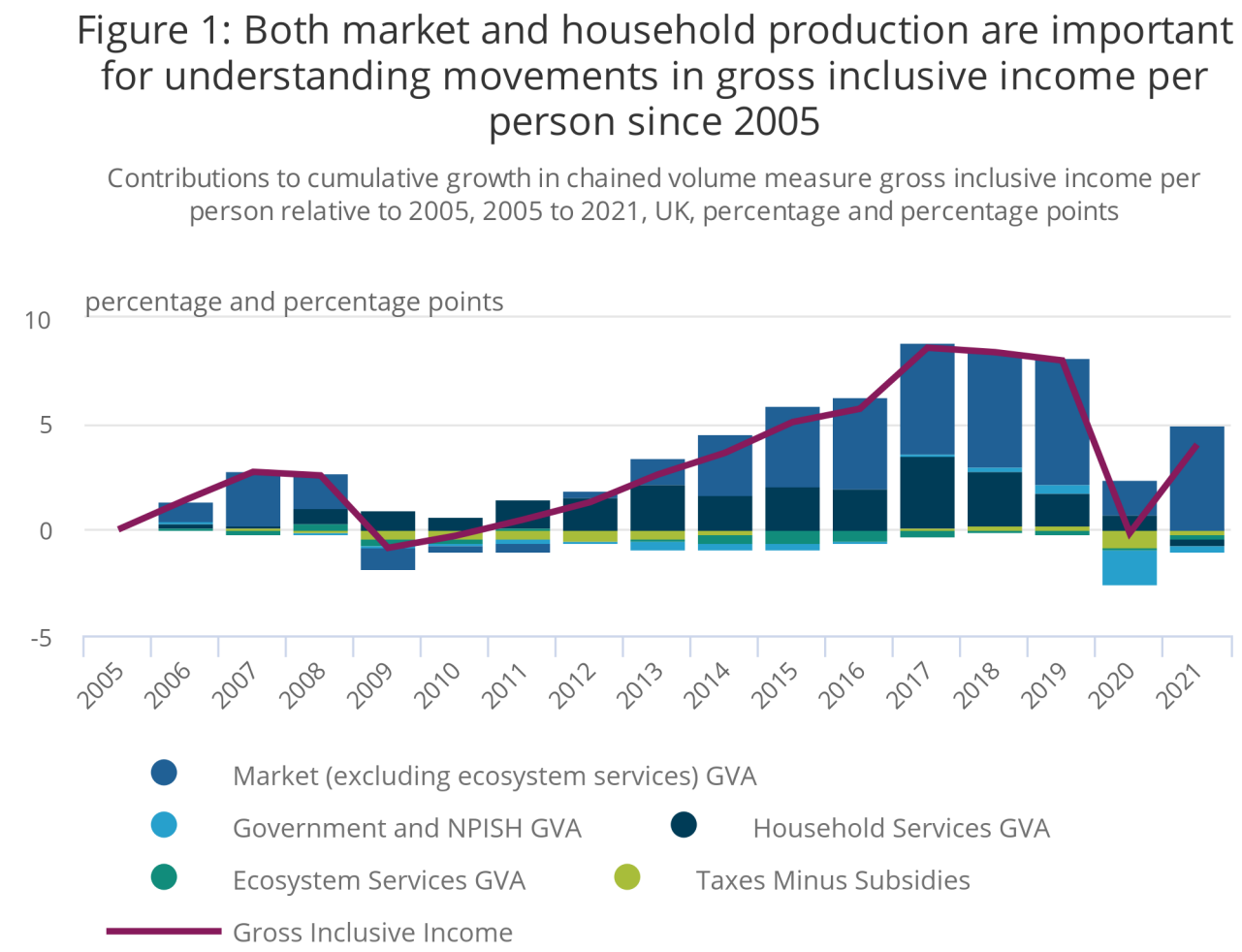
This work is complementary to developments in our Measures of national well-being dashboards, as well as being useful in its own right, showing an expanded range of economic activity. Dashboards deliver value by exposing users to many different types of data. There is also value in bringing this range of information through an accounting framework into single measures as GII and NII do. If appropriately weighted, these reveal the trade-offs and complementariness between components. For example, if GDP increases but at a cost to the environment and the services it delivers to people, this trade-off can be seen by the growth rate being lower than that of GDP.

3 . Gross inclusive income per person

Gross inclusive income (GII) per person grew by 0.2% a year on average between 2005 and 2021 (using a compound average growth rate), including 4.2% growth between 2020 and 2021. Figure 1 shows the contributions to this growth since 2005. Between 2005 and 2017, GII per person increased by an annual average rate of 0.7%, primarily because of increases in market GVA but also because of growth in unpaid household services. Declines in those household services in 2018 and 2019 caused GII per person to decrease slightly because of a decrease in the volume of unpaid household services, particularly nutrition and adult care. GII per person then proceeded to decrease more substantially in 2020, reflecting declines in market and non-market production, which both recovered to some extent in 2021.

Figure 1: Both market and household production are important for understanding movements in gross inclusive income per person since 2005

Contributions to cumulative growth in chained volume measure gross inclusive income per person relative to 2005, 2005 to 2021, UK, percentage and percentage points



Source: Inclusive income data from the Office for National Statistics

Notes:

1. "GVA" stands for gross value added.

2. "Market (excluding ecosystem services) GVA" includes gross value added for the market sector as defined in the national accounts (including gross domestic product (GDP)), plus the value (in volume terms) of investment in intangible capitals not capitalised in the national accounts (branding, design, organisational capital, firm-specific training and financial product innovation). The value of ecosystem services which contribute to market GVA (called provisioning services) are then subtracted.

3. Ecosystem services include provisioning services, carbon sequestration, and urban heat regulation provided by natural capital.

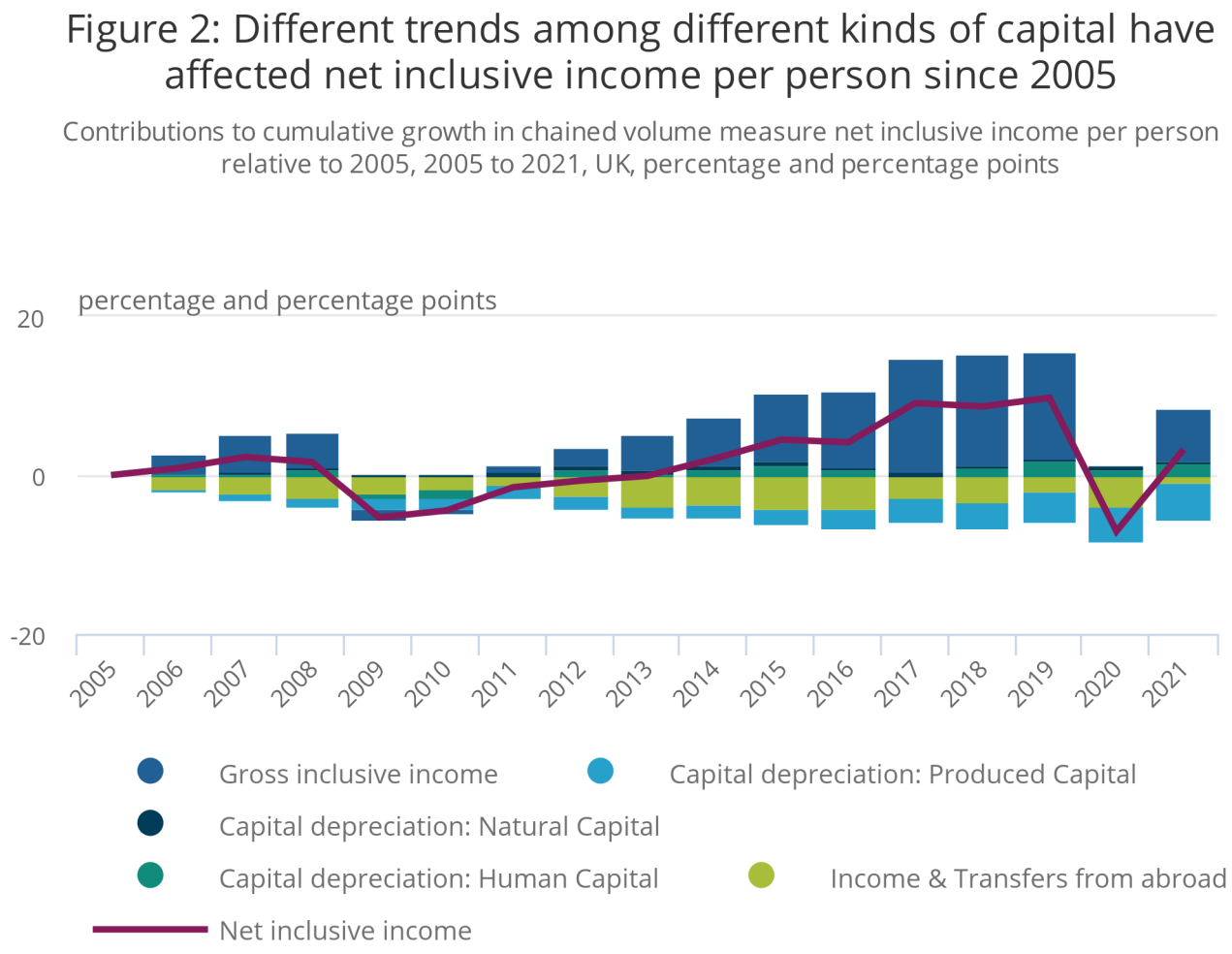
4. "NPISH" stands for Non-Profit Institutions Serving Households.

4 . Net inclusive income per person

Net inclusive income (NII) per person increased by 0.2% per year on average over the period 2005 to 2021 as a whole (using a compound average growth rate) and 11.1% between 2020 and 2021. Figure 2 shows contributions to NII per person increase since 2005. An important long-term trend shown in Figure 2 is the depreciation of different kinds of capital, reflecting their evolving use in economic production and the effect on NII over time. Depreciation of produced, human, and natural capital (as well as an adjustment for income and transfers with other countries) are subtracted from gross inclusive income (GII) to calculate NII, so that increases in depreciation per person show as negative contributions in Figure 2. On a per-person basis, the volume of produced capitals used in production has increased over time, while the volume of human and natural capital has decreased slightly.

Figure 2: Different trends among different kinds of capital have affected net inclusive income per person since 2005

Contributions to cumulative growth in chained volume measure net inclusive income per person relative to 2005, 2005 to 2021, UK, percentage and percentage points



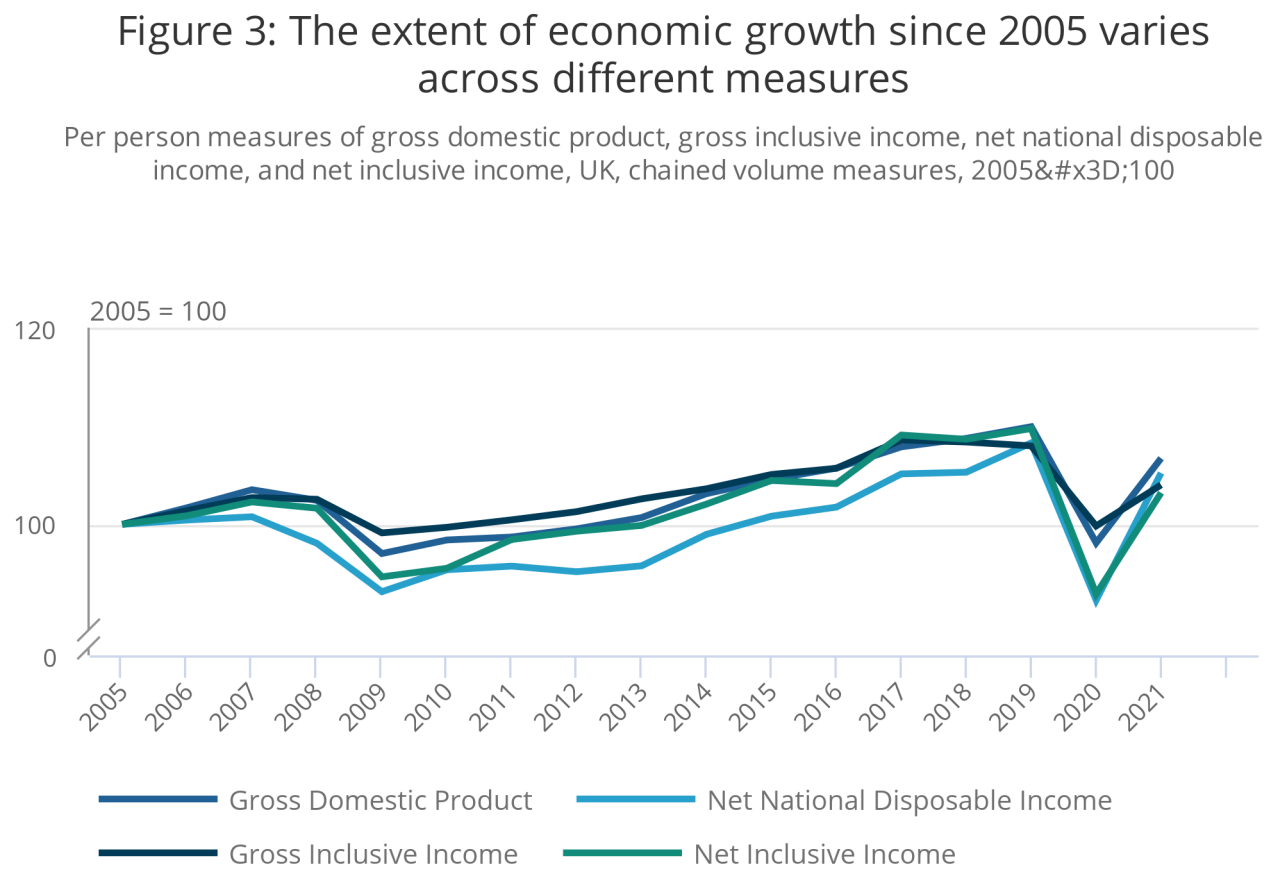
Source: Inclusive income data from the Office for National Statistics

To examine how inclusive income measures change or reinforce important stories on the UK's economic performance compared with more traditional measures, Figure 3 shows GII and NII alongside their comparable counterparts (adjusted to be on a per-person basis) from the National Accounts. GII is conceptually similar to gross domestic product (GDP), and NII is conceptually similar to net national disposable income (NNDI).

One difference which Figure 3 demonstrates is that GII tends to be less volatile than GDP, increasing by a smaller amount during times of economic growth, but decreasing by less during periods of economic contraction. This is mainly because of the inclusion in GII of household unpaid services, which tend to increase at a more consistent rate. This was particularly true during the 2008 to 2009 economic downturn, where household unpaid services continued to increase while market gross value added (GVA) decreased. But it was also the case to a lesser extent during the downturn in 2020. While household unpaid services decreased in 2020, they declined by a smaller amount than GDP, which in turn contributed to GII decreasing by less than GDP in that year.

Figure 3: The extent of economic growth since 2005 varies across different measures

Per person measures of gross domestic product, gross inclusive income, net national disposable income, and net inclusive income, UK, chained volume measures, 2005=100



Source: Inclusive income data from the Office for National Statistics

Therefore, these data are a major step forward on a statistical development across social, environmental and economic measurement. We recognise this journey is a continuing one, with many of the additions to the economic accounting framework presented here still being experimental and incomplete in places. To help inform the future direction of work in this area, we are setting up a user group to better incorporate the views of current and potential users of these data. If you would like to join this group, or share any feedback on the data or publication, please get in touch with us at Inclusive.Wealth@ons.gov.uk.

5 . Inclusive income data

UK inclusive income
Dataset | Released 9 April 2024
Estimates and analysis of economic progress which encompass a broader range of economic activities and assets than gross domestic product (GDP), such as unpaid household services, ecosystem services, and more.

6 . Glossary

Production boundary

Under the 2008 System of National Accounts, the production boundary is generally defined as "activity carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital, and goods and services to produce outputs of goods or services. There must be an institutional unit that assumes responsibility for the process of production and owns any resulting goods or knowledge-capturing products or is entitled to be paid, or otherwise compensated, for the change-effecting or margin services provided."

7 . Data sources and quality

Methodological developments

Detailed information about the methodologies and concepts underlying the measures in this article can be found in our Inclusive income methodology, GDP and Welfare: Empirical Estimates of a Spectrum of Opportunity, and our Inclusive Income: 2005 to 2019 article.

There are six main areas of methodological changes and development introduced in this publication:

- a move to measuring inclusive income on a per person basis
- replacing nowcasted household production data with data used in the recent household satellite account
- accounting for missing intangible investment data in 2021
- expanding ecosystem services and making provisioning services more visible
- incorporating natural capital depletion
- incorporating capital consumption estimates for human capital

By default, inclusive income measures and analyses are now presented on a per-person basis. This controls for changes in the population over time so that movements in inclusive income better reflect the experience of the average person rather than changes in the size of the population. To do this, components of inclusive income are divided by estimates of population size, provided in our United Kingdom population mid-year estimate time series.

In the previous inclusive income population, nowcasted data for household production were used in the absence of a published household satellite account. An account has now been published with data up to 2021, so data from that account are used in place of the nowcast. In addition, for the years 2017 to 2021, volume data underlying the calculations for those accounts are now used as direct volume estimates for five of the six household unpaid services. The exception is clothing, where the previous methodology (deflating current price gross value added (GVA) measures by the whole economy GVA deflator) is used.

However, the household satellite account does not include childcare data for 2020. In this case, inclusive income calculations incorporate an imputation based on published school and early care attendance rates in England for the period prior, during, and following 2020. This indicates a decrease in formal childcare hours of 43% in 2020 compared with 2019, which results in informal childcare hours (used to calculate unpaid childcare) increasing by 3.3% in 2020. For context on the sensitivity of inclusive income to this imputation, a plus or minus 10 percentage point (pp) change in the growth of formal childcare hours would cause gross inclusive income (GII) per person to change by 0.2pp. So, for example, if formal childcare hours fell by 53% in 2020 (instead of our current imputation of 43%), GII per person growth in 2020 would change from its current estimate of negative 7.5% to negative 7.7%.

Because of this imputation for childcare data in 2020, contributions from household production in 2020 to gross and net inclusive income should be treated with caution.

Estimates for intangible capital investment (for those intangible assets which are currently uncapitalised in the National Accounts) were not available for 2021 prior to the publication of this article. For 2021, the growth rate of intangible capitals which are capitalised in the National Accounts were spliced on to previously published data for uncapitalised intangibles. This assumes that, in 2021, the growth rate of investment of uncapitalised intangibles equals the growth rate of investment for capitalised intangibles.

Additional data for ecosystem services were incorporated in this release: provisioning services and urban heat regulation, both sourced from the natural capital accounts. Provisioning services refer to tangible goods that people can harvest, extract, or derive from the environment, such as food, water, energy, and materials. These capture the values of nature's contribution and exclude any form of industry processing. The value of these services already lies within the System of National Accounts (SNA) production boundary, but their value is not calculated separately from their processing. To better show their contribution to inclusive income, their value is separated from market GVA, under the assumption that provisioning services have no intermediate consumption. Market GVA excluding provisioning services is calculated by residual. Provisioning services of fishing and renewable electricity have been excluded, because data do not currently go back to 2005.

Natural capital depletion (described in our Developing estimates of depletion for the UK natural capital accounts article) has been included for the first time in inclusive income. Similar to the consumption and depreciation of other capitals, depletion is netted off from inclusive income, reflecting the decrease in quantity of the stock of natural resources because of extraction exceeding rates of regeneration. Because of data availability, currently, only depletion of oil and gas have been included.

Capital consumption of human capital is also included in net inclusive income calculations for the first time in this article. So, like produced capital where the value of standard wear-and-tear and obsolescence of capital is netted off to calculate net measures of value, net inclusive income now nets off the depreciation of human capital over time. Investment in human capital, whether through education, healthcare, or childcare, is already theoretically included in the value of GII. The incorporation of natural capital depletion and capital consumption of human capital are a substantial step forward in understanding the sustainability of economic activity in the UK. Similar to how we can understand whether strong growth in (gross) economic value was attributed to the unsustainable using-up of machinery without investment on new produced capital (for example), we can better understand where natural and human capital are being employed sustainably.

An Economic Statistics Centre of Excellence discussion paper discusses the compilation of the capital consumption of human capital data in detail, but it is worth highlighting that they are still highly experimental and a work in progress. They only include the value of human capital employed within the 2008 SNA production boundary. So they do not, for example, include the value of human capital used in unpaid household services. There are also some issues of compatibility with national accounts, where, for example, human capital estimates are currently only calculated for 16- to 65-year-olds. While these represent a substantial step forward, there is more research to do. It is also worth noting capital consumption of human capital for 2021 used mortality rates from 2020 as our human capital stocks system (which produces the underlying raw data for the human capital figures in this article) was updated before the latest mortality data was released.

Finally, chained volume measures for 2021 in this article and accompanying datasets have been calculated using 2019 weights, in line with the 2023 Blue Book.

8 . Future developments

Expanded asset boundary: produced capital

As part of international discussions around the upcoming update to the System of National Accounts (SNA), the United Nations published a paper considering the inclusion of data within the category of produced assets within the national accounts (and distinct from the already-included “databases” asset).

As our research the measurement of data as an asset, experimental initial estimates will be included as part of the expanded suite of intangible capitals already included within the expanded asset boundary used for inclusive income.

Expanded asset boundary: human capital

While the human capital consumption data incorporated into the measures presented in this article are a substantial step forward, additional research and development in two areas would improve their quality. These would be better alignment with national accounts, and expansion to include human capital employed in household services.

Expanded asset and production boundary: natural capital

While some ecosystem services (provisioning services) are included within the national accounts production boundary, others (regulating and cultural services) may not be. We are continually improving our natural capital accounts to measure the value of these services, and as those accounts include data on services outside the national accounts production boundary they will be included within future inclusive income publications. Currently, the number of services which can be included is restricted by our need (for consistency) to have series which begin at least in 2005. Similarly, as we develop further measures of natural capital depletion, where these data are consistent back to 2005, these will be incorporated into inclusive income.

9 . Related links

Inclusive Income methodology
Methodology | Last updated 11 November 2022
An introduction to the concepts underlying two new measures being developed by the Office for National Statistics (ONS), gross inclusive income and net inclusive income.

Inclusive capital stock, UK: 2019 and 2020
Article | Released 11 November 2022
Bringing together estimates of productive capital, natural capital and human capital, this article gives a picture of the UK's inclusive capital stock for 2019 and 2020.

10 . Cite this article

Office for National Statistics (ONS), released 9 April 2024, ONS website, article, UK inclusive income: 2005 to 2021