Office for National Statistics

Article

UK inclusive income: 2005 to 2019

Estimates and analysis of economic progress which encompass a broader range of economic activities and assets than gross domestic product (GDP) does, such as unpaid household services, ecosystem services, and more.

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Release date:
9 June 2023

Next release:
To be announced

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1 . Main points

- Between 2005 and 2019, gross inclusive income (GII) grew by 20.5% in volume terms, including 1.2% growth in 2019.
- GII grew more slowly than gross domestic product (GDP), which grew 22.1%, primarily reflecting weaker contributions from unpaid household work.
- Net inclusive income (NII) grew by 17.5% in volume terms, including by 1.9% in 2019.
- NII grew more slowly than net national domestic income (NNDI), which grew 20.1%, again primarily reflecting weaker contributions from unpaid household work suggesting that these measures of welfare drawn from GDP and other components have grown more slowly than the economy.
- These data represent experimental, work-in-progress estimates of a "Beyond GDP" measure of economic progress; capturing a broader range of activities than GDP, but still requiring further research to complete the framework, particularly on including human capital.

2 . Understanding these data

Inclusive income estimates, as developed by the Office for National Statistics (ONS), are an attempt to better understand the broader nature of the economic production of goods and services from both paid activity (contained in gross domestic product (GDP)) and other (predominantly unpaid) activity. They capture the impact of assets both included in the national accounts and those measured in the wider satellite 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, as estimated in this article, 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 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 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 value of degradation to the atmosphere from UK carbon emissions
- adding income from abroad, minus transfers from abroad

The estimates in this article represent works in progress and contain omissions - for example, the measurement of investment in and depreciation of human capital. Section 8: Future developments sets out these omissions and work plans around them.

These inclusive income metrics are a part of the ONS's 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 better be 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. The ONS have already published work beginning to measure the UK's inclusive capital stock and our inclusive income research seeks to develop flows measures which are conceptually coherent with these stocks. They incorporate the same expansion of the asset boundary, as well as a corresponding expansion of the production boundary.

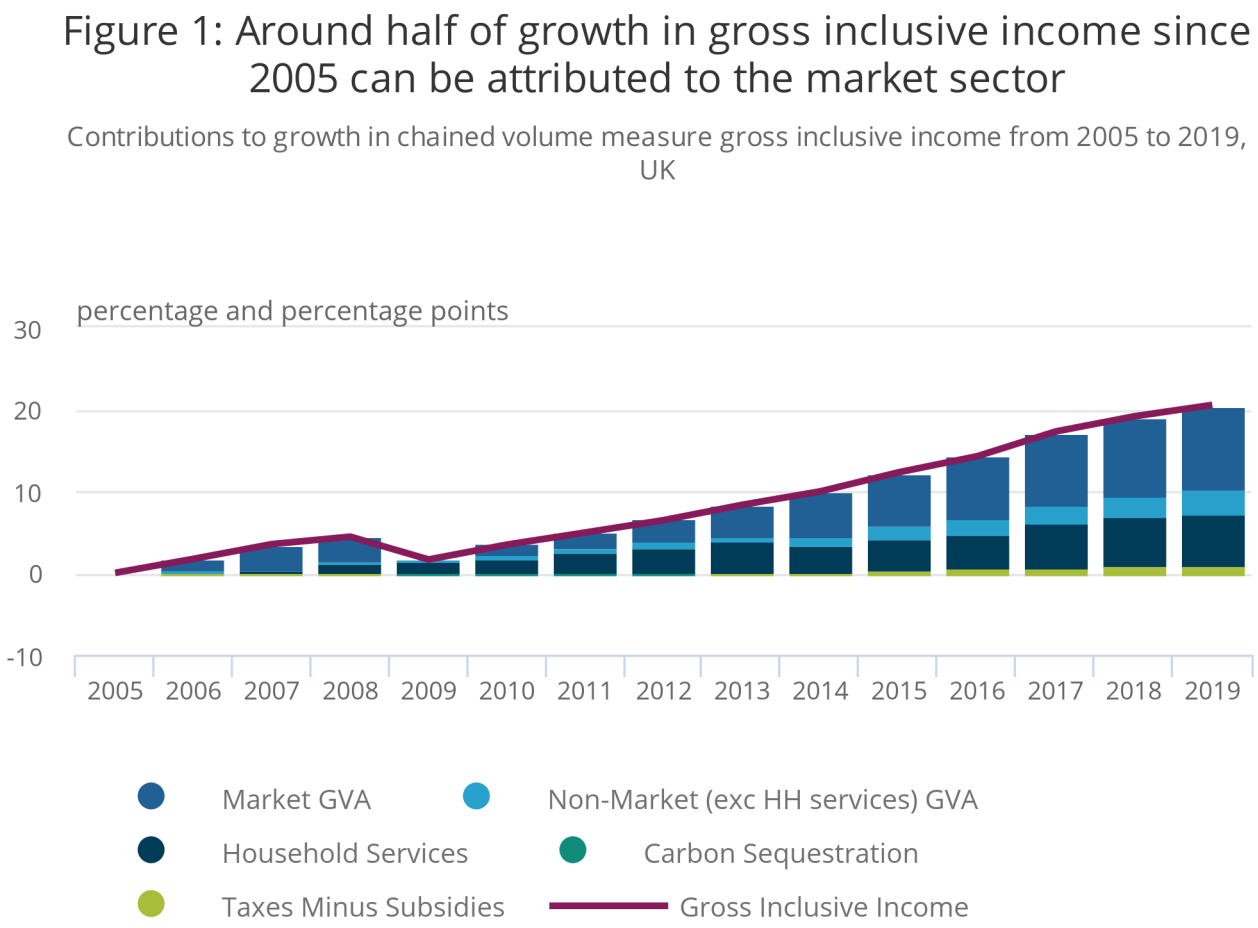
As well as being useful in its own right giving an insight into an expanded range of economic activity, this work compliments the ONS's development of well-being dashboards. Dashboards deliver great value by showing users many different types of data. There is also value of bringing this range of information through an accounting framework into single measures as GII and NII do. If appropriately weighted, these reveal the trade-offs and complementariness between components, so for example, if GDP increases but at a cost to the environment and the services it delivers to people, this can be seen by the growth rate being lower than that of GDP.

3 . Gross inclusive income

Gross inclusive income (GII) grew by 20.5% in volume terms between 2005 and 2019, including 1.2% growth in the most recent year (2019). Figure 1 shows the contributions to this growth since 2005. The largest single contribution came from the market sector, although this only accounts for half of the growth experienced over the 14-year period. Non-market economic activity also made up around half of the growth experienced, with the majority of this component coming from unpaid household services.

Figure 1: Around half of growth in gross inclusive income since 2005 can be attributed to the market sector

Contributions to growth in chained volume measure gross inclusive income from 2005 to 2019, UK



Source: UK inclusive income from the Office for National Statistics

Notes:

1. “Market GVA” includes gross value added for the market sector as defined in the national accounts (and hence 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).

2. “Non-Market (excluding HH services) GVA” includes non-market gross valued added as defined in the national accounts (and alongside Market GVA deliver total GVA, which with taxes and subsidies equal GDP), with a quality adjustment for some public services.

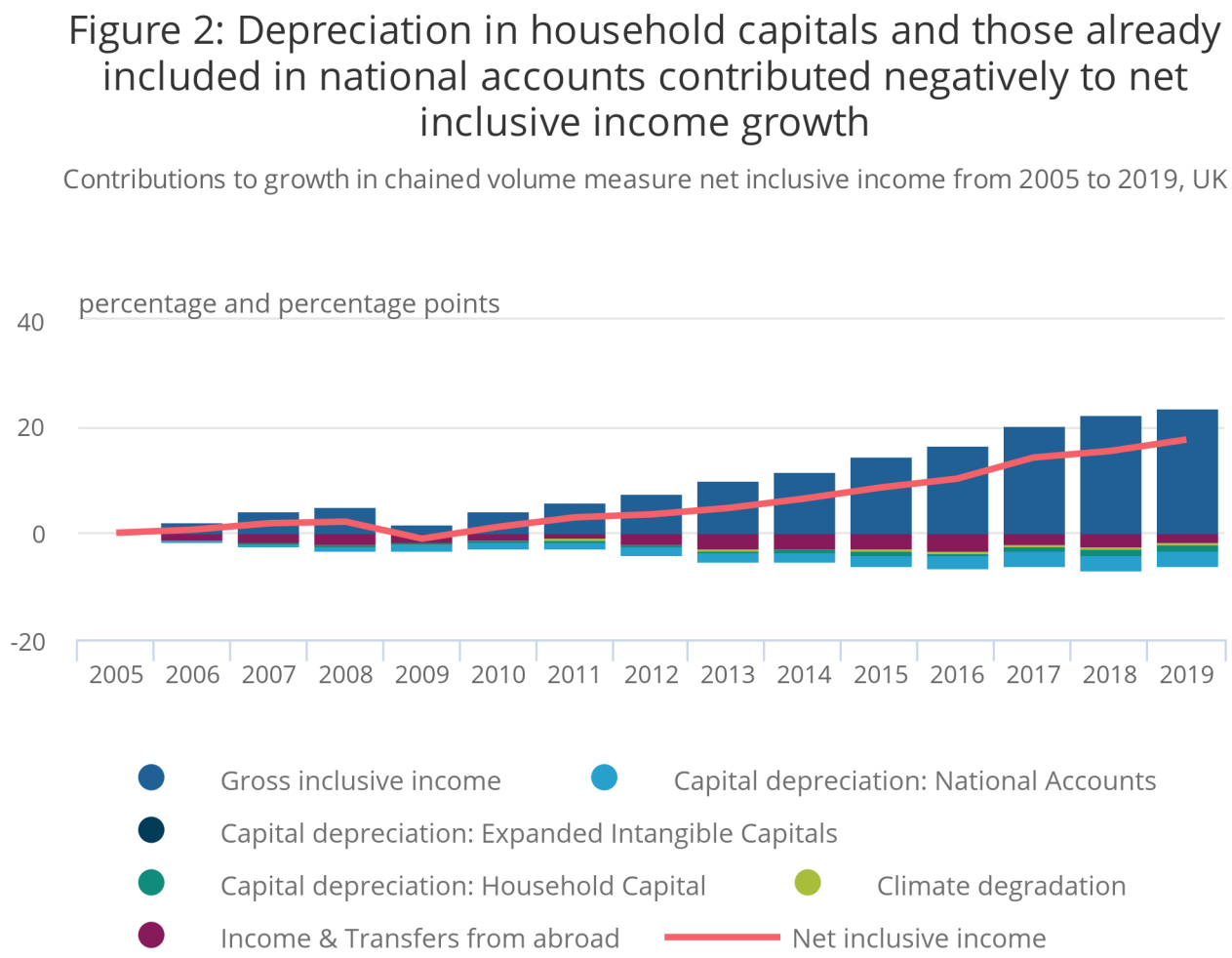
While the market and non-market sectors delivered broadly similar contributions over the 14 years as a whole, their trends over those 14 years have varied. While the non-market sector experienced relatively stable, consistent growth, the market sector experienced a notable contraction in 2009, as well as years of faster and slower growth.

4 . Net inclusive income

Net inclusive income (NII) grew slightly slower than its gross counterpart, gross inclusive income (GII), between 2005 and 2019, growing by 17.5% over the period as a whole, and 1.9% in 2019 alone. Increases in capital depreciation reflect the increasing importance of capital in all elements of production and therefore consumption, both within the market and in the household.

Figure 2: Depreciation in household capitals and those already included in national accounts contributed negatively to net inclusive income growth

Contributions to growth in chained volume measure net inclusive income from 2005 to 2019, UK



Source: UK inclusive income from the Office for National Statistics

Within these estimates we include experimental data on climate degradation, incorporating international research and development work on this topic. Given the importance of this subject, the Office for National Statistics (ONS) has put a team in place to research climate degradation in greater depth. It is therefore likely that this component of these estimates will be subject to revision in the foreseeable future.

As with GII, human capital is currently excluded from this framework, but the ONS teams are currently undertaking research to enable us to incorporate it in the future. Given the scale of human capital, both in terms of investment and depreciation as well as stocks, we would expect to see this materially affect headline estimates. We are eager for user feedback on whether we should present these data with and without human capital to aide user understanding. Comments can be sent to Inclusive.Wealth@ons.gov.uk.

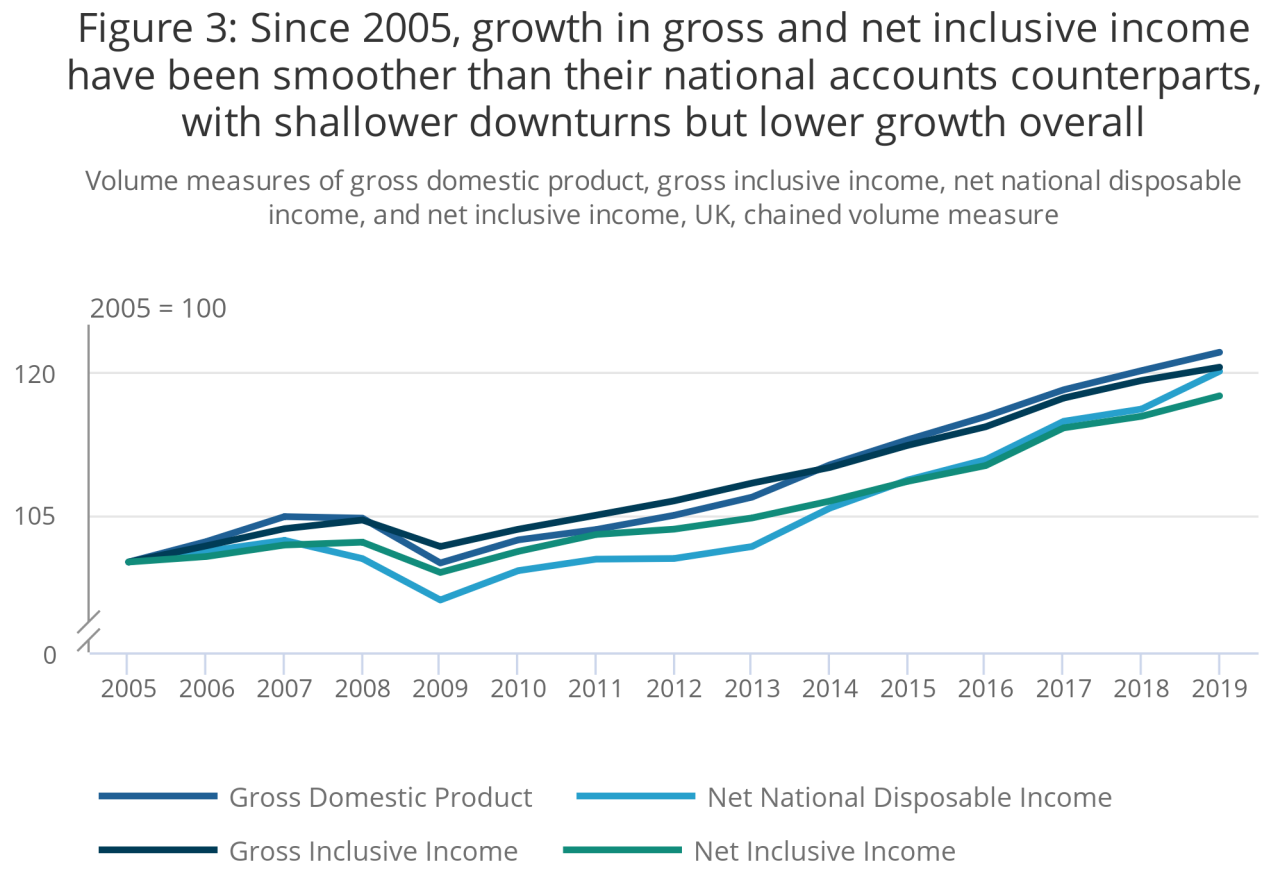
Figure 3 presents estimates revised from earlier research papers - the figure compares GII with gross domestic product (GDP) and NII with net national disposable income (NNDI). GDP and NNDI are concepts from the national accounts which are broadly comparable with GII and NII respectively.

These revised estimates now demonstrate slower rates of growth in GII and NII when compared with GDP and NNDI, whereas previous iterations showed faster growth. This difference can primarily be explained through an ongoing triangulation process as part of this research, reviewing different datasets and methods, which led us to review the methods used to estimate the volume of two unpaid household activities; childcare and transport services. Volume estimates for these series are now calculated directly rather than by deflating the current price estimates by the GDP deflator. More information about the new methods can be found in Section 7: Data sources and quality.

The slower growth rates compared with the traditional national accounts estimates can be read as showing that, over the period as a whole, economic progress may have been slightly slower than indicated by measures like GDP when looking at the expanded breadth of economic activity captured by GII and NII. In addition, while the growth rates over the period as a whole are broadly comparable between GII and GDP, as well as between NII and NNDI, the trends for GII and NII are smoother. This is largely because of the relatively smooth, consistent growth path of household unpaid services over the period.

Figure 3: Since 2005, growth in gross and net inclusive income have been smoother than their national accounts counterparts, with shallower downturns but lower growth overall

Volume measures of gross domestic product, gross inclusive income, net national disposable income, and net inclusive income, UK, chained volume measure



Source: UK inclusive income from the Office for National Statistics

For the first time we can present these data in one place and reveal the significance of the changing scope to include these additional activities, in consistent market equivalent money terms. These data are therefore 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. Further developments and research are being undertaken by the ONS in the produced, natural, and human capital domains. In the meantime, we would appreciate any comments be sent to Inclusive.Wealth@ons.gov.uk.

5 . UK inclusive income data

UK inclusive income
Dataset | Released 9 June 2023
Estimates of economic progress which encompass a broader range of economic activities and assets than gross domestic product (GDP) does, such as unpaid household services, ecosystem services, and more.

6 . Glossary

Production boundary

Under the System of National Accounts 2008, 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 and GDP and Welfare: Empirical Estimates of a Spectrum of Opportunity from the Economic Statistics Centre of Excellence (ESCoE).

Two main methodological developments have been implemented since GDP and Welfare: Empirical Estimates of a Spectrum of Opportunity. These include, a nowcast for current price unpaid household services and direct volume measures for some unpaid household services.

This article uses a nowcast to estimate current price output and intermediate consumption for unpaid household services between 2017 and 2019. More information about that nowcast, and the methodologies underlying it, are presented in a forthcoming ESCoE discussion paper from George Kapetanios and Fotis Papailias [note 1]. We currently plan to update our estimates of household unpaid services in summer 2023, at which point a subsequent article will update our measures of inclusive income using these more accurate data. Future inclusive income publications will primarily use the nowcast to estimate unpaid household services in the most recent year only, in line with our plans to publish more frequently and timely household satellite accounts.

Previously, volume measures for unpaid household services were calculated by deflating current price gross value added (GVA) by the generic gross domestic product (GDP) deflator. In this article, volume estimates for the two largest components of unpaid household services (childcare and transport) are calculated using direct volume measures instead (with other components being measured by deflating current price estimates by the GDP deflator). This means that, in 2016, 57% of household unpaid services are measured using a direct volume approach.

The volume of transport services are measured using published data from the National Travel Survey, which measures patterns of travel by residents of England within Great Britain. The methodology used in this article assumes volume growth in household transport services is the same in Scotland, Wales, and Northern Ireland as in England -- we plan to improve this in future articles. Total miles travelled by drivers and passengers are calculated, with an adjustment to estimate and subtract the total miles travelled for leisure, and divided by the average time spent travelling per mile. The resulting volume measure can be interpreted as a quality-adjusted measure of distance travelled -- where, for example, if the same distance is travelled in half the time, then the volume of travel services could be said to have doubled.

The volume series of childcare in unpaid household services is measured using the number of hours of informal childcare received by children aged 0 to 15 years, using the same methodology used in the Household satellite accounts. Data for 2005 to 2014 are based on analysis published as part of the 2016 edition of the household satellite accounts, but have been amended to take account of improved estimates of time spent unsupervised presented in the 2018 edition of the household satellite accounts.

Data for 2014 to 2019 were calculated using the same methodology but using the Childcare and early years survey of parents. As this survey only covers England, the 2014 to 2019 series are spliced onto the 2005 to 2014 series based on the household satellite accounts (which covers the whole of the UK). This effectively assumes that trends in hours of childcare in Scotland, Wales, and Northern Ireland follow the same trend as those in England from 2015 onwards. In addition, because of the data available, average hours of childcare per child for 2014 and 2015 are based on an average of the two years, and hours of childcare for children aged 5 to 15 years in 2019 are based on their values in 2018. We plan to seek additional data sources to improve this methodology in the future.

Finally, while the methodology remains the same, data sources underlying the model for climate degradation have been updated. The relationship between global temperature anomalies is now taken from the Intergovernmental Panel on Climate Change's (IPCC's) Climate Change 2022: Impacts, Adaptation and Vulnerability report (specifically, the meta-analysis Few and Not So Far Between: A Meta-analysis of Climate Damage Estimates by Howard and Sterner, 2017). It should also still be noted the vast uncertainty that surrounds such estimates, as highlighted by IPCC's report. Global temperature anomaly data have been updated based on those used in IPCC's Climate Change 2021: The Physical Science Basis, to bring greater consistency with the largely-IPCC-based data of the rest of the model.

Notes:

1. Kapetanios, G., Papailias, F. (2023), 'Nowcasting unpaid production activity and quality adjustments in public service productivity', Economic Statistics Centre of Excellence, forthcoming discussion paper.

8 . Future developments

Expanded asset boundary: produced capital

As part of international discussions around the upcoming update to the System of National Accounts, consideration is being given to the inclusion of data within the category of produced assets within the national accounts (and distinct from the already-included "databases" asset).

As we 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

The largest current omission from our measures of inclusive income is the non-capitalisation of human capital. Labour is included in national accounting, for example, in compensation of employees, but it is not accounted for as a capital.

We are currently undertaking research into whether our existing human capital statistical production system can be used to derive initial estimates of a subset of the components of human capital investment and capital consumption. We hope to publish this research in Quarter 4 (Oct to Dec) 2023.

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, while measuring 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.

Additionally, we are undertaking research to be able to measure investment in, and depletion of, natural capitals - which will be incorporated into our inclusive income framework in future publications.

Expanded production boundary

An update to the household satellite account is planned for the latter half of 2023. This will provide estimates of current price gross value added which, in a future UK inclusive capital publication, can replace the nowcasted estimates for 2016 to 2019 used in this article.

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 June 2023, ONS website, article, UK inclusive income: 2005 to 2019