Article

Disaggregating UK subnational gross disposable household income to lower levels of geography: 2010 to 2023

Gross disposable household income (GDHI) statistics at Lower-layer Super Output Area (LSOA) and equivalent geographies. These are official statistics in development.

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1 . Main points

- Users can use these granular gross disposable household income (GDHI) estimates as building blocks to create larger, bespoke geographies.
- We have implemented new methods, updated data sources, and revised geographic coverage to improve the quality of these estimates.
- Individual series of the granular GDHI estimates are volatile; users are encouraged to aggregate data for several Lower-layer Super Output Areas, or equivalent geographic areas, for more robust analysis.
- We illustrate how the data can be used through an example analysing changes in compensation of employees along a section of the Elizabeth Line.
- Our future work includes transitioning to Census 2021 geographies and further development of apportioning datasets and of the production system.

These are official statistics in development. Use these estimates with caution, as the methods and data sources may change in future releases. Data for individual small areas should not be compared directly. For analysis, users should combine the building blocks to create larger geographic areas. For further guidance, see Section 3: How to use these statistics.

2 . Overview

Gross disposable household income (GDHI) is a standard measure of the economic activity taking place in the households' sector. GDHI is the sum of the balances of households' primary and secondary resources that are available for spending or saving after paying taxes. Our Income and earnings statistics guide describes the different types of income and earnings statistics that we produce.

An important difference between GDHI and other income and earnings statistics is that GDHI includes the income of institutional households, which are often excluded from survey-based income sources.

We have developed these granular gross disposable household income (GDHI) estimates as building blocks that can be aggregated into larger user-defined geographies. These building blocks can then be used to compare the relative material welfare of households in those areas. These estimates provide users with greater flexibility in their analysis. This is because users do not have to use standard geographies, which are often too large to effectively analyse the differences between localities or to assess the impact of local interventions.

We first published granular GDHI estimates in March 2024, in our previous Disaggregating UK subnational GDHI to lower levels of geography: 2002 to 2021 article. Our previous article explained the method developed for breaking down local authority GDHI estimates component by component to:

- Lower-layer Super Output Areas (LSOA) in England and Wales
- Data Zones (DZ) in Scotland
- Super Output Areas (SOA) in Northern Ireland

LSOA and equivalent geographic areas are the components or "building blocks" used to create larger analytical geographic areas. We described the data sources, apportionment techniques, and methodological steps used to produce these estimates, and highlighted some of their issues and limitations.

In this article, we present the main changes to methods and data sources that we have implemented in the production process to address previous limitations and to improve the quality of the estimates (see Section 4: Improvements to methods and data sources).

In Section 3: How to use these statistics, we calculate compensation of employees for a bespoke area around a section of the Elizabeth Line and demonstrate how to use these estimates.

3 . How to use these statistics

We publish gross disposable household income (GDHI) estimates in current prices for each component at building-block level. We do this to encourage users to use these estimates flexibly and in the way that is most suitable for their research question.

For example, users can examine the distribution of imputed social contributions and social benefits received in towns and cities across the UK to understand how the financial wellbeing of households in those areas has changed over time.

They can also analyse GDHI estimates alongside other economic statistics, such as gross value added (GVA), to get a more complete picture of the outcomes in a specific area.

We do not recommend comparing individual building block time series because the granular series are volatile, owing to the small populations. Users should add several building blocks together to form larger geographic areas for analysis.

Except for England and Wales, we advise against analysing areas across national boundaries. This is because each country's statistical building blocks are designed differently and should not be directly compared.

We illustrate how to use these statistics by analysing how compensation of employees changed between 2010 and 2023 in the area that is within a 2-mile radius of each station between Ilford and Harold Wood stations on the Elizabeth Line in London. Compensation of employees is the payment by an employer to an employee, in return for the services of labour. It includes wages, salaries, and the social contributions paid by employers for the benefit of their employees.

The area consists of 325 Lower-layer Super Output Areas (LSOA). A map of the area is provided in Figure 1.

Figure 1: Map of the Lower-layer Super Output Areas with centroids within a 2-mile radius of stations between Ilford and Harold Wood stations on the Elizabeth Line

Downloac

The construction of the Elizabeth Line began in 2009, and tunnelling began in 2012. The line, formerly known as Cross Rail, was renamed the Elizabeth Line in 2016. The line was officially opened in May 2022.

The compensation of employees for the mapped area is derived by summing the compensation of employees in the 325 LSOA in Figure 1. We compare the growth rates of compensation of employees in the mapped area, and in other LSOA within the same local authorities (Barking and Dagenham, Havering, Newham, and Redbridge), as shown in Figure 2.

Figure 2: Compensation of employees in LSOA outside the mapped area but in the same LA grew at a higher rate than those in the mapped area after TfL adopted the train line in 2015

Compensation of employees, percentage growth, 2011 to 2023

Notes

1. LSOA stands for Lower-layer Super Output Area.
2. LA stands for local authority.
3. TfL stands for Transport for London.

Downloac

In 2015, Transport for London (TfL) took over the running of the line from Abellio Greater Anglia, which included improving integration with other transport modes, including buses and new cycling routes. This correlates with an increased growth rate of compensation of employees in LSOA that are local to the Elizabeth Line, but are outside the 2-mile radius of the Elizabeth Line stations. This growth rate (4.37%) exceeded the growth rate of LSOA within the 2-mile radius of Elizabeth Line stations (3.30%) in 2015, before reaching 8.32% and 7.07%, respectively, in 2017.

In 2014, before TfL integrated services, growth rates were 3.07% outside the 2-mile radius and 3.00% within it. These increased growth rates remained above 2014 levels until 2020 and the onset of the coronavirus (COVID-19) pandemic, before recovering from 2021 onwards.

This analysis is brief and does not prove a causal relationship between improved transport integration and increased local growth rates in compensation of employees. However, it does provide a good example of how small area GDHI estimates can be used in project and policy evaluation to define areas for deeper analysis.

4 . Improvements to methods and data sources

Geographical and temporal coverage

We have revised the coverage period to 2010 to 2023, from 2002 to 2021 in the first iteration of these statistics. While most data for Scotland and Northern Ireland also cover the period 2010 to 2023, some components are only available from 2013. There is insufficient address information to apportion gross disposable household income (GDHI) to small geographic areas in the period 2010 to 2012, so these components are truncated:

- Imputed social contributions and Social benefits received (D61/D62)
- Secondary resources total
- Balance of secondary income
- Gross Disposable Household Income

As part of this release, we have reviewed the geographies that we publish UK GDHI estimates for. We have replaced Clinical Commissioning Groups (CCG) with Integrated Care Boards (ICB) and Sub-Integrated Care Board Locations (SICBL), following the restructuring of health areas in England in July 2022.

For quality reasons, we have removed District Electoral Areas (DEA) in Northern Ireland and wards. We have added Middle-layer Super Output Areas (MSOA) for England and Wales and Intermediate Zones (IZ) for Scotland to provide users with additional larger building blocks that are comparable in size to wards.

We have updated towns (and cities) based on 2024 built-up areas for England and Wales, 2022 localities for Scotland, and 2015 settlements for Northern Ireland. Only towns with a population above 25,000 are published.

We have updated the accompanying aggregated lookup table using the latest available lookups built on 2011 Census small areas.

Data quality assurance

We have strengthened the quality assurance we perform on the administrative data sources we use to apportion GDHI components and on the resulting apportioned data.

First, we compare aggregate measures derived from the administrative data sources with macro trends to check their suitability for apportionment.

Then, we examine the apportioning data for statistical disclosure and adjust the data to reduce the risk. We test and adjust the data for outliers to ensure the data remain representative of the small geographic areas. Finally, our main stakeholders and our development team sense check the data.

Improvements to apportioning datasets

We have improved the distribution of the apportioning datasets by accounting for address changes during the year. This, in turn, refines the apportionment of GDHI components to small areas.

In years when apportioning datasets show unusual trends, we constrain them to regional (or national) macrodata.

Improvements to social benefits received

To align more closely with methods used at higher geographic levels, the components "social benefits received: social security benefits in cash" (SBRSS) and "social benefits received: social assistance in cash" (SBRSA) have been reorganised. Previously, State Pensions and Contributory Jobseeker's Allowance were allocated to SBRSA. These benefits have now been reclassified to SBRSS.

The Department for Work and Pensions's (DWP's) National Benefits Database (NBD) does not include Northern Ireland. State Pensions are the main subcomponent of SBRSS, accounting for 89.6% of the total in 2023, so the population aged 65 years and over was used as an apportionment proxy. Statistical testing showed that the population aged 65 years and over is a strong and consistent proxy for SBRSS.

5 . Data on gross disposable household income

UK small area gross disposable household income (GDHI) estimates
Dataset | Released 28 May 2026
UK small area gross disposable household income estimates at Lower-layer Super Output Area (LSOA) and equivalent geographies, for the period 2010 to 2023.

UK gross disposable household income (GDHI) estimates for other geographic areas
Dataset | Released 28 May 2026
Granular gross disposable household income (GDHI) estimates for other geographical areas for the period 2010 to 2023.

6 . Future developments

Transitioning to Census 2021 geographies

These granular gross disposable household income (GDHI) estimates are based on 2011 Census small area geographies. We plan to transition to Census 2021 geographies in our next release.

Further research on apportioning datasets and variables

We will continue to improve the quality of these estimates by exploring alternative administrative data sources, including Scotland's social security expenditure data. We will also explore self-assessment data from Self Assessment Tax Returns collected by HM Revenue and Customs. For example, we will investigate using self-assessment data to apportion GDHI mixed income and social benefits received. We will also enhance the apportionment of social contributions paid by incorporating National Insurance contributions from self-employed individuals.

We also aim to find alternative apportionment variables for GDHI components that are currently apportioned by population. These include other current transfers paid, other current transfers received, imputed social contributions received, other social benefits paid, property income paid, and social benefits received: social assistance for Northern Ireland.

7 . Glossary

Gross disposable household income

Gross disposable household income (GDHI) is a standard measure of the economic activity taking place in the households' sector. It is derived as the sum of the balances of households' primary and secondary resources and uses available for spending or saving after paying taxes.

We provide an overview of how GDHI estimates are compiled in our Regional accounts methodology. Users can find additional quality and methodology information in our Regional GDHI quality and methodology information (QMI), which describes how GDHI estimates are created and how they can be used correctly.

We describe the different types of income and earnings statistics produced by the Office for National Statistics, Department for Work and Pensions, and HM Revenue and Customs in our Income and earnings statistics guide. A main difference between GDHI and other income and earnings statistics is that GDHI includes the income of institutional households that are often excluded from survey-based income sources. Institutional households are groups of people living together in communal establishments, rather than in private homes.

GDHI components or transactions

GDHI components consist of the income and expenditure transactions conducted by households. However, GDHI expenditure transactions do not include expenditure transactions that are classified as household final consumption expenditure (spending on goods and services used by the household).

The terms "GDHI components" and "GDHI transactions" are interchangeable. They both refer to the inflow and outflow of money into the household sector.

Compensation of employees

Compensation of employees is the payment by an employer to an employee, in return for the services of labour. It includes wages and salaries in cash or income in kind (for example, free board and lodging) and the social contributions (actual or imputed) paid by employers for the benefit of their employees (for example, social security).

Wages and salaries in cash include remuneration for regular activity, together with payments for overtime and bonuses, and various allowances for housing, cost of living and transport to and from work, but exclude "expense payments". They are gross of statutory deductions for Income Tax and employees' social contributions, which are withheld by the employer and paid to the appropriate authorities on behalf of the employee.

Employers' social contributions are regarded as a part of employees' remuneration, although not paid to the employee directly. They may be actual or imputed and secure entitlements for the employee to social benefits.

Apportioning

The process of distributing values from a higher-level geographic area to smaller, lower-level geographic areas using a proxy or weighting variable that exists at both geographic levels. This ensures that newly created lower-level geographic data sum to the values of the higher-level geographies. The data used to apportion are referred to as the apportioning datasets.

Lower-layer Super Output Areas, Data Zones and Super Output Areas

Lower-layer Super Output Areas (LSOA) in England and Wales consist of groups of usually four or five Output Areas (OA). They consist of between 400 and 1,200 households, and have a usual resident population between 1,000 and 3,000 people.

LSOA are broadly equivalent to Data Zones (DZ) in Scotland and Super Output Areas (SOA) in Northern Ireland. DZ are designed to have roughly standard populations of 500 to 1,000 household residents. SOA are comprised of a population of 300 to 6,000 people.

Middle-layer Super Output Areas and Intermediate Zones

Middle-layer Super Output Areas (MSOA) consist of groups of LSOA, usually four or five. They consist of between 2,000 and 6,000 households, and have a usual resident population between 5,000 and 15,000 people. The equivalent of MSOA in Scotland are Intermediate Zones (IZ), which consist of a population of 2,500 to 6,000 household residents. IZ consist of groups of Data Zones. MSOA and IZ fit within local authorities.

Towns (and cities)

The towns (and cities) data are based on:

- 2024 built-up areas (BUA) for England and Wales
- 2022 localities for Scotland
- 2015 settlements for Northern Ireland

We have updated the towns (and cities) list using population data from the 2021/2022 Censuses that are remapped to a best-fit for Census 2011 LSOA, DZ and SOA. We only consider towns with a population of at least 25,000 people.

The BUA geography does not handle London in the same way as the rest of the country. We have therefore excluded London from the towns list because it is not comparable.

Travel to Work Areas

Travel to Work Areas (TTWA) are a geography created to approximate labour market areas. They are derived to reflect self-contained areas in which most people both live and work. For those involved in labour market analysis and planning, TTWA are useful for helping build an understanding of local labour markets, for framing local labour market analysis, and for examining the spatial mismatch between labour supply and demand.

8 . Related links

Regional household final consumption expenditure, UK: 2009 to 2023
Bulletin | Released 26 February 2026
Estimates of household spending and saving in the countries, regions and subregions of the UK. These are official statistics in development.

Income estimates for small areas, England and Wales: financial year ending 2023
Bulletin | Released 10 December 2025
Estimates of annual household income for the four income types for Middle-layer Super Output Areas (MSOA), or local areas, in England and Wales.

Small area gross value-added estimates, UK: 1998 to 2023
Bulletin | Released 22 September 2025
Breaking down local authority level annual gross value added (GVA) statistics to lower levels of geography. Official statistics in development.

Regional gross disposable household income, UK: 1997 to 2023
Bulletin | Released 10 September 2025
Annual estimates of regional gross disposable household income (GDHI) for the UK International Territorial Level (ITL) regions, local and combined authorities, and other economic regions.

Disaggregating UK subnational gross disposable household income (GDHI) to lower levels of geography: 2002 to 2021
Article | Released 26 March 2024
Official statistics in development of gross disposable household income (GDHI) statistics at Lower-layer Super Output Area (LSOA) and equivalent geographies.

Regional Accounts Methodology
Article | Released 13 June 2019
This page contains guidance and methodology information for regional accounts outputs from the Office for National Statistics (ONS).

9 . Cite this article

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