

Regional economic activity by gross domestic product QMI

Quality and methodology information for regional economic activity by gross domestic product, detailing the strengths and limitations of the data, methods used, and data uses and users.

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1 . Output information

- Accredited official statistic: yes
- Frequency: annual
- How compiled: various sample-based surveys and administrative data
- Geographic coverage: UK International Territorial Levels (ITL), local authorities, combined authorities, city regions, local enterprise partnerships and other economic and enterprise regions
- Related publications: Small area gross value added; Regional gross disposable household income; Country and regional public sector finances; Regional and subregional labour productivity

2 . About this QMI report

This quality and methodology information report contains information on the quality characteristics of the data (including the European Statistical System's five dimensions of quality) as well as the methods used to create it.

The information in this report will help you to:

- understand the strengths and limitations of the data
- learn about existing uses and users of the data
- understand the methods used to create the data
- help you to decide suitable uses for the data
- reduce the risk of misusing data

3 . Important points

- Regional economic activity by gross domestic product (GDP) contains annual estimates of economic activity by UK country, region and local area using GDP and a full industry breakdown of balanced regional gross value added (GVA(B)).
- Estimates cover the whole of the UK and are broken down according to the [UK International Territorial Levels \(ITL\)](#); estimates are also available for local authorities, combined authorities, city regions, local enterprise partnerships and other economic and enterprise regions across the four UK nations.
- Estimates are produced annually and are available in current basic prices, which include the effect of inflation, and in chained volume measures, with the effect of inflation removed.
- These statistics are [accredited official statistics](#); they have been independently reviewed by the [Office for Statistics Regulation](#) and confirmed as complying with the standards of trustworthiness, quality and value in the [Code of Practice for Statistics](#).

4 . Quality summary

Overview

Gross domestic product (GDP) is our headline measure of regional economic activity. GDP is a measure of the value of goods and services produced within an economy; essentially estimating an economy's size and monitoring its growth.

To reach regional estimates of GDP, we first compile estimates of gross value added (GVA). GVA can be defined as the value generated by any unit engaged in the production of goods and services, and the contributions of individual sectors or industries to GDP.

GVA includes the economic effect of taxes and subsidies on the production process (such as Business Rates and Corporation Tax). GDP also includes the economic effect of taxes and subsidies on the products themselves (such as Value Added Tax and duty paid on alcohol, tobacco and fuel).

A single balanced measure of GVA known as GVA(B) is produced by balancing two separate measures of GVA: the income measure (GVA(I)); and the production measure (GVA(P)).

GVA(I) is measured at current basic prices, which include the effect of inflation. This involves adding up the income generated by UK resident individuals or corporations in the production of goods and services. It is calculated gross of deductions for consumption of fixed capital, which is the amount of fixed assets used up in the process of production in any period.

GVA(P) is measured at both current prices and in chained volume measures (CVM). It is calculated for a given reference period as the total value of all goods and services produced (output), less goods and services used up or transformed in the production process, such as raw materials and other inputs (intermediate consumption).

The production approach to compile GVA is conceptually equivalent to the income approach but allows deflation of current prices to produce constant price measures, since the production components relate to goods and services that can be broken down into price and volume indices.

Uses and users

Regional GDP estimates are used by the UK government and the devolved administrations of Northern Ireland, Scotland and Wales to formulate and monitor economic policy and allocate resources.

These statistics are used in the compilation of business survey statistics in Northern Ireland. They are also used in the production of the [Northern Ireland Composite Economic Index \(NICEI\)](#) – a short-term output measure of the Northern Ireland economy, which is used to inform the Economic Strategy and Northern Ireland Budget. The regional accounts estimates are also currently used in the development of experimental supply and use tables, which form an important basis for economic statistics for Northern Ireland.

The Scottish Government uses regional GDP estimates in the production of supply and use tables and other related economic statistics, including [Quarterly National Accounts Scotland](#). Regional GDP per head is also used by the Scottish Government to monitor the relative economic performance of countries and regions over time.

Regional GDP estimates are used to assess the state of the Welsh economy. The data are used to brief Ministers, appraise policies, and are a key data source for Welsh Supply and Use tables and Input-Output tables. Welsh Government publish annual regional GDP and GVA data in their [Regional gross domestic product and gross value added](#) release. The data are also used as part of the [Wellbeing of Wales: national indicators](#).

The [Department for Business and Trade](#) and [Ministry of Housing, Communities and Local Government](#) uses regional and subregional GDP estimates in monitoring regional economic performance.

Local authorities and regional observatories use these statistics to facilitate evidence-based policy-making and economic intervention, for example, enabling combined authorities to take collective decisions across council boundaries. These figures also provide local authorities with a context for their economic strategies and lobbying activities.

The GDP statistics inform the general public about the state of the economy and provide insight into the relative economic positions of local areas and issues such as the "North-South divide".

The House of Commons Library produces a standard note about these statistics and they are frequently the subject of Parliamentary questions raised by Members of Parliament.

Strengths

Regional GDP data are [accredited official statistics](#), which means that they have been independently reviewed by the Office for Statistics Regulation and confirmed as complying with the standards of trustworthiness, quality and value in the [Code of Practice for Statistics](#).

Regional GDP estimates are based on a balanced estimate of regional gross value added, known as GVA(B). GVA(B) balances the income (GVA(I)) and production (GVA(P)) approaches to measuring the economy into a single estimate at a regional level. For users this provides a more accurate measure and avoids any confusion from having two different estimates of the same thing.

The balanced GVA estimates use a matrix of paired quality metrics for each region, by industry, by year. These quality metrics are compiled by assessing the quality of each component that feeds into either of the two measures and multiplying it by the weight that component represents in the GVA estimate. They provide a simple way to compare the relative quality of the GVA(I) and GVA(P) estimates. The two quality metrics are used to calculate a weighted arithmetic mean of the income and production estimates to produce a single regional GVA estimate. The UK totals are consistent with the latest [UK National Accounts, The Blue Book](#).

Limitations

Regional GDP results are provisionally published approximately 15 months after the reference period. The time lag between publication and the period to which the data refer is the minimum required to produce estimates of a high enough quality to meet all user needs. These results are revised approximately 27 months after the reference period and can then be considered more reliable because they include balanced UK National Accounts Blue Book figures, which were not available for the provisional release.

Recent improvements

We have recently taken on improved data from the Business Enterprise Research and Development (BERD) Survey. In previous BERD statistics, up to the 2020 reference period, it was established that there was undercoverage, particularly of small businesses. Previously we applied an uplift approach as an interim measure. We now have a new sample, that has increased the volume of data received and ensured that the BERD statistics now better reflect the level of research and development (R&D) performed across the UK economy. Further information about this change can be found in our statistical bulletin [Business enterprise research and development, UK: 2022](#).

We have recently made improvements to the methodology for education services in the non-market sector. Previously, education output on the GVA(P) side of the accounts was apportioned regionally using data on the size of the public sector education workforce and their earnings. The revised approach more closely mirrors the approach used in the national accounts by measuring the output of non-market education using activity data on the number of pupils educated in each phase of state-funded schools, weighted by their cost. This approach is explained in our [Measuring subnational education output](#) article. Several further refinements have been made to improve these estimates since this article was released and before their inclusion in regional GDP, including to the data sources selected and the calculation of cost-weights for special schools, pre-primary schooling and academies.

We have improved the measurement of financial intermediation services indirectly measured (FISIM) within the banking industry. Working with colleagues from the Bank of England and the UK National Accounts, we have introduced new methods to better align regional estimates to the corresponding UK estimates, improving coherence between the national and regional accounts. We have also taken on improvements to the measurement of banks' FISIM identified and implemented by the Bank of England to improve the quality of our regional estimates.

We have improved the measurement of public administration and defence to better reflect the distribution of armed forces personnel across the UK. Although the services provided by this sector are mostly for the benefit of everyone in the UK, we allocate the GVA of this activity according to the locations where public sector workers are based.

5 . Quality characteristics of the data

We have developed [guidelines for measuring statistical quality](#) based upon the five European Statistical System (ESS) quality dimensions. This report addresses the quality dimensions and important quality characteristics, which are detailed in this section.

Relevance

(The degree to which the statistical product meets users' needs for both coverage and content.)

Regional gross domestic product (GDP) estimates are used by the UK government and the devolved administrations of Northern Ireland, Scotland and Wales to formulate and monitor economic policy and allocate resources. Several layers of geography are published ranging from country level to local authority level. Our regional gross value added (GVA) estimates also include a full industry breakdown.

Local authorities and regional observatories use these statistics to enable evidence-based policy-making and economic intervention. These figures also provide local authorities with a context for their economic strategies and lobbying activities.

Regional GDP statistics also inform the general public about the state of the economy and provide insight into the relative economic positions of local areas and issues such as the "North-South divide."

The House of Commons Library produces a standard note about these statistics, and they are frequently the subject of Parliamentary questions raised by Members of Parliament.

We aim to stay up to date with any changes to the boundaries of administrative geographic areas, and to include as soon as possible any new emergent regions of economic significance, such as new Mayoral Combined Authorities with devolved powers.

Accuracy and reliability

(The degree of closeness between an estimate and the true value.)

Sample sizes can vary; these variations are unavoidable in the collation of time series data for the calculation of GDP. Improvements to the GDP methodology or changes in administrative source data allow for reviewing the available sources for higher quality datasets or more timely publications. This is an ad hoc and continuous process, which does not include major revisions to the methodology of GDP.

Most source data are updated annually, although some datasets are published biennially or on an ad hoc basis. These missing values are imputed, using other available information. As with sample size, potential improvements to the methodology are reviewed whenever new data become available or when significant changes to the source data affect the final values.

Where no recent estimate is available, the previous year's data may be used to model a regional distribution. It is important to note that, although these issues are rare because of the completeness of the main source data, some datasets are lagged to the extent that they are never available for the provisional (latest) year. In times of rapid economic change this can result in larger than usual revisions to the provisional estimates.

Coherence and comparability

(Coherence is the degree to which data that are derived from different sources or methods, but refer to the same topic, are similar. Comparability is the degree to which data can be compared over time and domain, for example, geographic level.)

Estimates of approximate GVA are also published as part of the [Non-financial business economy, regional ABS \(Annual Business Survey\)](#) release. These estimates are used in the production of the annual [supply and use tables](#) for the compilation of the UK GDP. The [ABS GVA estimates differ](#) from the UK Regional Accounts estimates in several ways:

- regional accounts GVA(B) estimates are constrained to UK National Accounts, The Blue Book totals
- regional accounts GVA(B) estimates are analysed and produced as a time series
- ABS estimates represent the UK business economy; this is around two-thirds of the UK economy but excludes agriculture, public sector and the financial sector

Further information can be found in Section 4 of our [Annual Business Survey Quality and Methodology Information report](#).

Latest GVA estimates are available on a consistent basis back to 1998 on a [Standard Industrial Classification: SIC 2007 basis](#). Where changes are made to the geographic areas covered, these are always implemented across the entire time series.

Since international standards such as [European System of Accounts \(ESA\) 2010](#) are used in the production of the regional accounts, the figures should be directly comparable with the regional accounts of other countries. However, the revisions policies of these countries should be examined before comparing data for historical periods. It should also be noted that the UK produces estimates of GVA using the balanced approach. All other European countries use the production approach except the Republic of Ireland, which uses the income approach. Countries outside Europe mostly use the UN System of National Accounts (SNA), which is the basis for the ESA and so highly comparable.

Relatively few other countries produce regional GDP estimates in addition to their GVA estimates, because of a lack of appropriate data on taxes and subsidies on products.

Accessibility and clarity

(Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the release details, illustrations and accompanying advice.)

Our recommended format for accessible content is a combination of HTML web pages for commentary narrative, charts and graphs, with data being provided in usable formats such as CSV and Excel. We also offer users the option to download the commentary narrative in PDF format.

For further information please contact us via email at regionalaccounts@ons.gov.uk.

For information regarding conditions of access to data, please refer to the links:

[Terms and conditions \(for data on the website\)](#)

[Copyright and reuse of published data](#)

[Accessibility](#)

Timeliness and punctuality

(Timeliness refers to the lapse of time between publication and the period to which the data refer. Punctuality refers to the gap between planned and actual publication dates.)

Regional economic activity by gross domestic product is released annually, with publication dates provided on [the Office for National Statistics \(ONS\) release calendar](#).

Estimates are published approximately 15 months after the reference period, where the latest year is provisional. Data for the latest year become revised approximately 27 months after the reference period following supply and use balancing.

In the unlikely event of a change to the pre-announced release schedule, public attention will be drawn to the change and the reasons for the change will be explained fully at the same time, as set out in the [Code of Practice for Statistics](#).

The availability of datasets in the production process is a factor in the publication timetable. For example, HM Revenue and Customs (HMRC) self-assessment data usually become available at the end of October. The availability of balanced Blue Book UK totals dictates the provision of industrial estimates published 27 months after the reference period. As a result, the most recent year's data have not been through the supply and use balancing process and so are marked as provisional.

Concepts and definitions

(Concepts and definitions describe the legislation governing the output and a description of the classifications used in the output.)

Gross domestic product (GDP) measures the value of goods and services produced in the UK. It estimates the size of and growth in the economy. This was first published on a regional basis in 2019.

GDP is the equivalent to gross value added (GVA) plus Value Added Tax (VAT) plus other taxes on products minus subsidies on products.

We measure GVA through two independent approaches: income (GVA(I)) and production (GVA(P)). These approaches are then used to produce a balanced measure of regional GVA, known as GVA(B). This gives users a single measure of economic activity within a region.

GVA is a measure of the increase in the value of the economy because of the production of goods and services. For the balanced measure, GVA(B), it is measured at current basic prices (value in £ million), which include the effect of inflation, and in "real" terms in chained volume measures (CVM), with the effect of inflation removed.

The CVM are presented as indices referenced to equal 100 in a particular year. They are also provided in cash terms equivalent to the value of money in the reference year.

GVA plus taxes (less subsidies) on products is equivalent to GDP.

GVA(I) is measured at current basic prices, which include the effect of inflation. This involves adding up the income generated by UK resident individuals or corporations in the production of goods and services. It is calculated gross of deductions for consumption of fixed capital, which is the amount of fixed assets used up in the process of production in any period.

GVA(P) is measured at both current prices and in CVM. It is calculated for a given reference period as the total value of all goods and services produced (output), less goods and services used up or transformed in the production process, such as raw materials and other inputs (intermediate consumption).

The production approach to compile GVA is conceptually equivalent to the income approach but allows deflation of current prices to produce constant price measures, since the production components relate to goods and services that can be broken down into price and volume indices.

Further information can be found in our [Regional accounts methodology guide](#).

Geography

GDP estimates are available at many geographic levels, built around the framework of the UK International Territorial Levels (ITL). The ITL classification system came into effect following the UK exit from the European Union (EU). It superseded the Nomenclature of Units for Territorial Statistics (NUTS) classification system, although the new and existing classification initially used the same structure.

There are three levels of ITLs, where each region lies is determined by its average population size:

- ITL1 includes 12 major socioeconomic regions: 9 English regions, Scotland, Wales and Northern Ireland
- ITL2 includes 46 subregions, mainly groups of counties and unitary authorities
- ITL3 includes 182 local areas, principally individual counties and unitary authorities

The term Extra-Region is applied to economic activity that cannot be assigned to any specific region within a country. For UK regional GVA and GDP this currently comprises activity on the North Sea Continental Shelf (oil and gas extraction), UK embassies in foreign enclaves and armed forces posted overseas.

Upper and lower tier local authority data for the UK are also published alongside the ITL estimates. The local authority estimates can be aggregated to form other geographic breakdowns such as combined authorities, local enterprise partnerships (LEPs), city regions and other economic and enterprise regions. Further information can be found in Chapter 1 of our [Regional accounts methodology guide](#).

Why you can trust our data

The ONS is the UK's largest independent producer of statistics and its national statistical institute. Our [data policies](#), available on the ONS website, detail how data are collected, secured and used in the publication of statistics. We treat the data that we hold with respect, keeping it secure and confidential, and we use statistical methods that are professional, ethical and transparent.

Regional economic activity by gross domestic product data have accredited [official statistics](#) status, designated by the UK Statistics Authority in accordance with the [Statistics and Registration Service Act 2007](#). This designation signifies compliance with the [Code of Practice for Statistics](#), which has recently been updated and focuses on trustworthiness of data in greater depth.

6 . Methods used to produce the data

Main data sources

All regional gross domestic product (GDP) estimates are constrained to the [UK National Accounts, The Blue Book](#) totals.

National totals for GDP components (consistent with the latest Blue Book publication) are collated and allocated to regions using the most appropriate regional indicators. Consistency checks are built into the processing system to ensure that regional aggregates tally with national totals.

Sample sizes can vary; these variations are unavoidable in the collation of time series data for the calculation of regional GDP. Improvements in the GDP methodology or changes in administrative source data allow for reviewing the available sources for higher quality datasets or more timely publications. This is an ad hoc and continuous process, which does not include major revisions to the methodology of GDP.

The primary input datasets for the compilation of regional GDP include administrative data and data from structural surveys. The data are acquired from both internal and external sources. Further information can be found in Sections 3 and 4 of our [Regional accounts methodology guide](#).

How we process the data

Figures for the latest year are provisional as national estimates have not been through supply and use balancing at the time of this publication. Regional industry estimates for the components of income and production in the latest year have been calculated by applying growth in GDP (output) industry figures and then constraining these to sum to the income and production component totals. The figures used in this process are consistent with those published in our [UK National Accounts, The Blue Book](#).

A "top down" approach is used to calculate regional figures, whereby the national control aggregate for a component of GDP is allocated to regions using the most appropriate measure of regional activity (known as the regional indicator) available.

The vast majority of source data are updated annually, however, some datasets are published biennially or on an ad hoc basis. These missing values are imputed, using other available information.

As with sample size, potential improvements to the methodology are reviewed whenever new data become available or when significant changes to the source data affect the final values. Where no recent estimate is available, the previous year's data may be used to model a regional distribution. It is important to note, however, that these issues are rare because of the completeness of the main source data.

How we analyse and interpret the data

Data sources used as regional indicators are collated, analysed and validated. Outliers are identified using graphical analysis and quality adjustments are assigned where necessary. Where appropriate, issues are referred to the data suppliers for clarification, explanation and/or data changes.

The resulting validated datasets are then subject to a peer review process so that their impact can be assessed, before their inclusion in the compilation of GDP. Peer review is carried out by volunteers from devolved government organisations who possess knowledge of the economy of their local area.

How we quality assure and validate the data

Liaison with data suppliers ensures unusual movements in datasets are queried. This allows us to maintain accuracy standards within the source data and improve the quality of our final outputs.

Once received, the datasets are formatted. The various data providers each present the data in different formats; these are standardised before validation or analysis. Errors may arise from formatting issues, errors in data transfers or communication, or human error within the formatting process. As with all stages of analysis and quality assurance, consistent checking by production staff is essential and is the main form of error identification.

How we disseminate the data

Estimates are produced annually and are published on the Office for National Statistics (ONS) website in the form of a [statistical bulletin](#). The Regional economic activity by gross domestic product, UK statistical bulletin can be downloaded free from the ONS website at 9:30am on the day of publication.

How we review and maintain the data processes

We regularly review data sources to ensure we are using the most appropriate source and to improve the quality of our estimates. We maintain a dialogue with users via regular meetings of the Regional Accounts Government User Group (RAGUG) and through regular attendance at other groups dealing with regional economic statistics.

7 . Related links

[Regional economic activity by gross domestic product, UK](#)

Bulletin | Released 24 April 2024

Annual estimates of economic activity by UK country, region and local area using gross domestic product (GDP). Estimates are available in current market prices and in chained volume measures and include a full industry breakdown of balanced regional gross value added (GVA(B)).

[Small area gross value added estimates, UK](#)

Bulletin | Released 21 August 2024

Breaking down local authority level gross value added to lower levels of geography. These are official statistics in development.

[Regional accounts methodology guide: June 2019](#)

Methodology | Released 13 June 2019

What comprises the UK regional accounts, how various regional estimates are compiled, the different data used in compilation and concepts underpinning the process.

[Regional and subregional labour productivity, UK](#)

Bulletin | Released 17 June 2024

Regional and subregional output per hour and output per job performance levels.

[Country and regional public sector finances, UK](#)

Article | Released 7 June 2024

Public sector revenue, expenditure and net fiscal balance on a country and regional basis.

8 . Cite this methodology

Office for National Statistics (ONS), released 14 January 2025, ONS website, methodology, [Regional economic activity by gross domestic product Quality and Methodology Information](#)