

# Regional gross value added (balanced) QMI

Quality and Methodology Information for regional gross value added (balanced), detailing the strengths and limitations of the data, methods used and data uses and users.

Contact:  
Trevor Fenton  
regionalaccounts@ons.gov.uk  
+44 (0)1633 456083


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# 1 . Output information

<b>National Statistic</b>	
<b>Survey name</b>	Regional gross value added (balanced)
<b>Data collection</b>	Survey and administrative data
<b>Frequency</b>	Annual
<b>How compiled</b>	Various sample-based surveys and administrative data
<b>Geographic coverage</b>	UK Nomenclature of Units for Territorial Statistics (NUTS)
<b>Related publications</b>	Regional gross disposable household income regional and sub-regional productivity

## 2 . About this Quality and Methodology Information report

This quality and methodology report contains information on the quality characteristics of the data (including the European Statistical System 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

The regional gross value added balanced (GVA(B)) estimates are available in current basic prices, which include the effect of inflation, and in chained volume measures, with the effect of inflation removed.

GVA(B) estimates cover the UK as a whole and are broken down according to the [Nomenclature of Units for Territorial Statistics \(NUTS\)](#). In addition to this, we are now producing estimates for local authorities, local enterprise partnerships and combined authorities. We have used the local authority data to build additional areas of economic interest to users.

In December 2018, we published data for city regions and other economic and enterprise regions of the UK, in addition to the combined authorities and local enterprise partnerships data. All of these are available in both value and volume terms and can be found in the [datasets of the release](#).

Following an assessment conducted in [2017](#) and [2018](#) by the Office for Statistics Regulation, regional gross value added (GVA) balanced estimates have been accredited with [National Statistics status](#). In addition, the GVA income estimates retained [National Statistics status](#) and the GVA production estimates also gained [National Statistics status](#).

## 4 . Quality summary

### Overview

Regional gross value added (GVA) is a legal requirement of the European Union (EU) statistical body, [Eurostat](#). Estimates are compiled in compliance with the [European System of Accounts 2010 \(ESA 2010\)](#) and are consistent with the standards set out in the United Nations [System of National Accounts 2008 \(SNA 08\)](#). The UK Regional Accounts are produced annually.

We have produced estimates of GVA using estimates from gross value added income (GVA(I)) and gross value added production (GVA(P)) 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 due to 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. These estimates are consistent with the [UK National Accounts, The Blue Book: 2018](#).

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 gross domestic product (GDP).

GVA(I) is measured at current basic prices, which include the effect of inflation, excluding taxes (less subsidies) on products (for example, Value Added Tax). 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.

Estimates of regional GVA are available at various geographical breakdowns and new areas formed by aggregating these areas, which are:

- Nomenclature of Units for Territorial Statistics: NUTS1 countries and regions
- NUTS2 sub-regional
- NUTS3 local areas
- local authority or council areas
- local enterprise partnerships
- combined authorities
- city regions
- other economic and enterprise regions

Further information can be found in Section 2 of the [Regional accounts methodology guide](#).

National totals are allocated to regions using the most appropriate available regional indicators. A regional indicator is a dataset that provides regional proportions, which in turn are used to allocate national totals. They can be acquired from administrative sources and structural surveys. The national totals are consistent with those in the latest published [UK National Accounts, The Blue Book](#).

Estimates are produced annually in December and are published on the ONS website in the form of a statistical bulletin. The [Regional GVA\(B\) statistical bulletin](#) can be downloaded free from the ONS website at 9:30am on the day of publication. These GVA(B) estimates are then delivered to [Eurostat](#) at the end of December.

Both the regional gross value added [income approach](#) estimates and the [production approach](#) estimates are published in December alongside the [regional GVA\(B\)](#) estimates.

## Uses and users

The annual provision of regional and sub-regional GVA NUTS2 and NUTS3 level is an EU requirement. The statistical body of the EU, [Eurostat](#), collates regional GVA from all member states, which is used in the allocation of Objective 1 structural funding. The structural funds account for approximately one-third of the EU budget.

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

Regional GVA estimates are one of the [Welsh Government's eight key indicators](#) in measuring the Welsh economy.

The [Department for Business, Energy and Industrial Strategy \(BEIS\)](#) uses regional and sub-regional GVA 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, assisting local enterprise partnership (LEP) applications and regional growth funding bids. These figures also provide local authorities with a context for their economic strategies and lobbying activities.

The GVA 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

In December 2017, the ONS released a “balanced estimate” of regional gross value added (GVA(B)); this “balances” the income and production approaches to measuring the economy into a single estimate at a regional level; we believe the UK is the first country to produce a balanced measure of regional GVA. This gives users a single measure of economic activity within a region, therefore avoiding any confusion from having two different estimates of the same thing.

This publication includes the use of Value Added Tax (VAT) returns in the compilation of balanced regional GVA estimates from reference year 2016 onwards; the first ONS publication to use VAT returns.

## Limitations

Gross value added (GVA) provisional results are published 12 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 24 months after the reference period and can be considered more reliable in that they include balanced Blue Book figures, which were not available for the provisional release.

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 [UK National Accounts, The Blue Book](#).

## Recent improvements

Following an assessment conducted in 2017 and 2018 by the Office for Statistics Regulation, regional gross value added (GVA) balanced estimates have been accredited with [National Statistics status](#). In addition, the GVA income estimates retained [National Statistics status](#) and the GVA production estimates also gained [National Statistics status](#).

In December 2017, we published additional industry detail for NUTS1 and NUTS2 regions. In December 2018, we published additional industry detail for NUTS3 and local authority areas across the UK. These have been made available in both value and volume terms. Because of the need to safeguard against the identification of individual company information, these smaller areas do not have the range of industries available for the larger areas, but we have published considerably greater detail than in previous years.

The industrial breakdown now available is:

- 81 industries at the NUTS1 level
- 72 industries at the NUTS2 level
- 48 industries at the NUTS3 level
- 34 industries at the local authority level

In response to users' requirements, we have used the local authority data to build additional areas of economic interest to users. For the first time, we have published data for city regions and other economic and enterprise regions of the UK, in addition to the combined authorities and local enterprise partnerships published last year. All of these are available in both value and volume terms and can be found in the [datasets](#).

Our GVA publication has also been affected by changes to [Nomenclature of Units for Territorial Statistics \(NUTS\)](#) boundaries. In January 2018, there were changes to the NUTS boundaries in Scotland and Northern Ireland. In Scotland, a fifth NUTS2 area, Southern Scotland, was created by taking parts from the Eastern Scotland and South Western Scotland NUTS2 areas. In Northern Ireland, changes were made to the NUTS3 areas due to local government re-organisation, with the new NUTS3 areas now matching the 11 local authorities. Our GVA estimates have been produced in accordance with the January 2018 NUTS regions.

As part of the assessment of regional GVA, a [review investigated better methods for the regionalisation of the financial and insurance services industry](#). We have now implemented an improvement to the regional allocation of compensation of employees, used as a proxy for output in the finance industries. Whereas previously we only had regional average earnings data for the combined industry (Standard Industrial Classification (SIC) Section K), we now have data for each component industry (SIC groups 64.1; 64.2 to 64.9; 65.1 to 65.2; 65.3; and 66). This has provided greater precision in the regional allocation of finance output.

## 5 . Quality characteristics

This section provides a range of information that describes the quality and characteristics of the data and identifies issues that should be noted when using the output.

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:

- relevance
- accuracy and reliability
- output quality
- coherence and comparability
- concepts and definitions
- geography
- accessibility and clarity
- timeliness and punctuality
- why you can trust our data

More information is provided about these quality dimensions in the following sections.

## Relevance

(Relevance is the degree to which the statistical product meets user needs for both coverage and content).

The annual provision of regional and sub-regional GVA at Nomenclature of Units for Territorial Statistics: NUTS2 and NUTS3 level is an EU requirement. The statistical body of the EU, [Eurostat](#), collates regional gross value added (GVA) from all member states, which is used in the allocation of Objective 1 structural funding. The structural funds account for approximately one-third of the EU budget.

## 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 reliable time series data for the calculation of gross value added (balanced) (GVA(B)). Improvements in the GVA(B) methodology or changes in administrative source data allows 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 GVA(B).

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. It is important to note, however, that these issues are rare because of the completeness of the main source data.

## Output quality

(The range of information that describes the quality of the data and details any points that should be noted when using the output).

Input datasets are compared with the data received for each variable in previous years' deliveries. Large fluctuations against previous years are investigated using regional intelligence compiled within the branch supplemented by information received from peer reviewers. Following this investigative procedure, any anomalous data that remain unexplained are followed up where appropriate with the relevant data providers for clarification.

The complex process by which the GVA estimates are produced means that it is not currently possible to define the accuracy of the estimates in terms of detailed statistical properties, for example, through their standard errors. Therefore, the reliability of the estimates is measured by the extent of revisions. UK estimates will be affected by revisions to the [UK National Accounts, The Blue Book](#) control totals, while revisions to NUTS1 and lower level estimates will come from revisions to the data used to apportion the UK GVA(B) estimates and revisions to the Blue Book.

The Regional Accounts Revisions Policy mirrors that of [UK National Accounts, The Blue Book](#) where national totals are subject to revision. The whole time series is open to revisions from the Blue Book. In addition, revisions to the regional indicator datasets will impact upon the regional GVA estimates.

It is important to note that there are other aspects of accuracy, which revisions analysis cannot attempt to measure. A value can be reliable (as in not revised) without being accurate.

Regional accounts publish comprehensive [revisions triangles](#) for NUTS1, NUTS2 and NUTS3 estimates of regional GVA(B).

## 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.)

### Coherence

Estimates of approximate GVA are also published as part of the [Annual Business Survey \(ABS\) \(PDF, 462KB\)](#) 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 financial sector

Further information can be found in Section 3 of the [Annual Business Survey Quality and Methodology guide](#).

### Comparability

GVAB and GVAP estimates published in December are available on a consistent basis at all NUTS levels back to 1998 on a [Standard Industrial Classification: SIC 2007 basis](#). GVAI estimates are available at all NUTS levels back to 1997 on a SIC 2007 basis. Data are available to download on a SIC 2003 basis covering years 1989 to 2009. Prior to 1989, data are not comparable as they do not meet European System of Accounts: ESA 2007 or ESA 2003 accounting rules, resulting in conceptual and methodological differences.



The production of regional GVA is a legal requirement under the European System of Accounts. The sub-regional (NUTS2) estimates are used to inform EU structural funding decisions. GDP is calculated in the currencies of the member states and converted initially into euros and then into an artificial common currency called the purchasing power standard (PPS). This makes it possible to compare the purchasing power of different national currencies.

The resulting GDP per inhabitant estimates (expressed in terms of PPS) provide a measure of the total economic activity in a region and may be used to monitor and compare the economic development of regions over time.

Since international standards such as [ESA 2010](#) are used in the production of the regional accounts, the figures should be directly comparable with the regional accounts of other EU countries. However, the revisions policies of these countries should be examined before comparing data for historic periods. It should also be noted that the UK produces estimates of GVA using the balanced approach. All other EU countries use the production approach except the Republic of Ireland, which uses the income approach.

## Concepts and definitions

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

Gross value added (GVA) is a measure of the increase in the value of the economy due to 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.

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

GVA(I) is measured at current basic prices, which include the effect of inflation, excluding taxes (less subsidies) on products (for example, Value Added Tax). 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.

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

## Geography (including list of changes to boundaries)

GVA estimates are available at four geographic levels, in accordance with the [Nomenclature of Units for Territorial Statistics \(NUTS\) classification](#) that came into force on 1 January 2018. The NUTS provides a single uniform breakdown for the production of regional statistics for the EU. In the UK the areas are:

- NUTS1: Wales, Scotland, Northern Ireland and the nine English regions
- NUTS2: 41 subregions – mainly groups of counties and unitary authorities
- NUTS3: 179 local areas – principally individual counties and unitary authorities
- LAU1: 391 local authority or local council areas

The term Extra-Regio is applied to economic activity that cannot be assigned to any specific region within a country.

Local authority data for the UK are also published alongside the NUTS1, NUTS2 and NUTS3 estimates of GVA. Although there are 400 areas listed at the LAU1 level, these include a further division of Scottish Council areas to enable aggregation to NUTS3 local areas. 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 the [Regional accounts methodology guide](#).

## Accessibility and clarity

(Accessibility is the ease with which users are able to access the data, also reflecting the format(s) in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the metadata, 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](mailto: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 time lag between the actual and planned dates of publication.)

Regional GVA(B) is released annually in December, which is updated on [the Office for National Statistics \(ONS\) release calendar](#). The release dates are usually published 12 months in advance.

GVA(B) estimates are published 12 months after the reference period, where the latest year is provisional. Data for the latest year becomes revised 24 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 24 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 subject to the income statistical discrepancy and are marked as provisional.

## Why you can trust our data

The ONS is the UK's largest independent producer of statistics and its national statistics institute. [The Data Policies and Information Charter](#), 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. You can find out more about our [data policies](#) on our website.

The regional gross value added balanced data has [National Statistics](#) status, designated by the UK Statistics Authority (UKSA) 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

### How we collect the data, main data sources and accuracy

All regional gross value added (GVA) estimates are constrained to the [UK National Accounts, The Blue Book](#) totals. Below the UK level, Nomenclature of Units for Territorial Statistics: NUTS1 to NUTS3 estimates are constrained to sum to the UK totals.

National totals for GVA 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 reliable time series data for the calculation of regional gross value added balanced (GVA(B)). Improvements in the GVA(B) 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 GVA(B).

The primary input datasets for the compilation of regional GVA(B) include administrative data and data from structural surveys. The data are acquired from both internal and external sources. Further information can be found in Section 3 of the [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 gross domestic product (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 the [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 GVA 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. 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, prior to their inclusion in the compilation of GVA(B). 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**

As stated in the previous section, 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 finalised outputs.

Once received, the datasets are formatted. The various data providers each present the data in different formats; as discussed in the previous section, 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 in December and are published on the Office for National Statistics (ONS) website in the form of a [statistical bulletin](#). The Regional GVA(B) statistical bulletin can be downloaded free from the ONS website at 9:30am on the day of publication. These GVA(B) estimates are then delivered to Eurostat by the end of December.

## **How we review and maintain the data processes**

We asked for people’s views via a consultation on our new experimental balanced measure of regional gross value added (GVA) to provide a single best estimate of regional GVA, combining the best parts of the existing income and production measures.

We regularly review data sources to ensure we are using the most appropriate source and to improve 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 economics statistics.

