

Business Register Employment Survey (BRES) QMI

Quality and methodology information for the Business Register and Employment Survey (BRES), strengths and limitations of the data, methods, and data uses and users.

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1 . Output information

- National statistic: yes
- Survey name: Business Register and Employment Survey
- Frequency: annual
- How compiled: sample-based survey
- Geographic coverage: UK

2 . About this Quality and Methodology Information 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

- The Business Register and Employment Survey (BRES) provides data on the number of employees in the UK in the public and private sector, on a full-time and part-time basis, at detailed industrial and geographical levels; it is regarded as the definitive source of official employee statistics by industry.
- BRES data is also used to update the Inter-Departmental Business Register (IDBR), which is the main sampling frame used for most of our business surveys.
- Data are available from 2009, but BRES is a point-in-time snapshot and its design is not optimised for time series use (although it is recognised that users do use it in this manner).
- High level estimates are published in our [Employees in the UK statistical bulletins](#), and more detailed estimates are published on the [National online manpower information service \(Nomis\) website](#); historical employment survey data prior to 2009 are also available there.

4 . Quality summary

Overview

The Business Register and Employment Survey (BRES) is an annual business survey, publishing employee and employment estimates at detailed geographical and industrial levels. The survey sample of approximately 87,000 businesses is weighted up to represent the Great Britain economy covering all sectors. When combined with data from the Northern Ireland Statistics and Research Agency (NISRA), this allows us to produce employment estimates on a UK level.

Uses and users

The BRES data and estimates are widely used, both within and outside government, and are a vital source of business employee information.

The main users and uses of the output include:

- the Scottish Government (SG) and the Welsh Government (WG) – BRES provides estimates on employee numbers, which are essential in the analysis of [Scottish Government](#) and [Welsh Government](#) employment trends; estimates on all sectors are incorporated into the Scottish and Welsh figures and may also be used in internal briefings
- the Department for Business and Trade (DBT) uses BRES estimates to assess the structure and performance of industries
- Workforce jobs – the workforce jobs series (WFJ), much of which is initially based on the Short-Term Employment Survey's estimate of employee jobs, is benchmarked to the BRES estimate; this benchmarking usually takes place in September
- local government planning departments are major users of BRES, using the estimates published on the National online manpower information service (Nomis) to forecast trends in employment in their specific areas and to claim for central government funding
- BRES is one of the main data sources used to compile International Territorial Levels (ITLs) 2 and 3 gross value added (GVA) data
- additional users include national government departments and bodies, businesses, academics and the general public

BRES data are not only used to produce employee and employment statistics but also to update the [Inter-Departmental Business Register \(IDBR\)](#), which is the main sampling frame used for most of our business surveys.

BRES is a point-in-time snapshot of the Great Britain and UK economy and is not designed to be used as a time series, although it is recognised that users do use them in this manner. BRES is subject to discontinuities caused by standard industrial classification change, reference date change and source data change, potentially making any time series analysis difficult. The WFJ series, which is compiled mainly from surveys of businesses, is the preferred source of statistics when comparing changes in employment over time.

Job density statistics

Job density statistics are produced annually and measure the number of employee jobs in an area relative to the resident population aged 16 to 64 years. Employee jobs are calculated by combining data from BRES with additional sources covering agriculture, self-employment, government-supported trainees and UK armed forces personnel.

These are published annually within the [LI01 Regional labour market: local indicators for counties, local and unitary authorities dataset](#).

For some components of employee jobs, data are only available at local authority level. To produce estimates for smaller geographies, these local authority totals must be apportioned using geographic ratios.

Previously, these ratios were derived from the Annual Population Survey (APS). As APS is a household survey, it is designed to measure where people live rather than where jobs are located. In 2026, we moved to ratios based on BRES data to apportion jobs to smaller geographies.

BRES measures the location of jobs, making it a more appropriate and conceptually consistent basis for allocating employee jobs across geographies. This change improved alignment with the job density framework and with other BRES-based employment statistics, particularly for smaller geographic areas.

We published a one-off [table showing the difference in job densities for the previous and updated apportionment method](#).

Strengths and limitations

One of the strengths of BRES is that estimates are provided at detailed geographical and industrial levels to a level that no other Office for National Statistics (ONS) employment survey output provides. Another strength of BRES, and the reason for availability of these detailed breakdowns, is the considerable sample size of approximately 87,000 businesses. This is a much larger sample size than other business survey measures of employment we publish.

The BRES industry data are recommended for usage over industry data from household surveys, such as the Annual Population Survey (APS) and Labour Force Survey (LFS).

It should be noted that BRES is a sample survey and produces estimated employment figures. These estimates are of a good quality at higher levels of geography (for example, region). The quality of the estimates deteriorates as the geographies get smaller and this should be considered when utilising the sub-national estimates.

As mentioned above, BRES does have discontinuities, from design and classification changes, so users needing to use BRES data to make comparisons over time should ensure those comparisons are valid.

Recent improvements

To bring it into line with other ONS business surveys, the sample design for BRES has been changed, from the 2023 sample onwards, to stratify by register employment rather than register Full-Time Equivalents (FTEs). Previously one-third of medium sized units subject to random sampling were selected. This has been replaced with a minimum sample size of a quarter, because of the increase in the number of qualifying units.

5 . Quality characteristics of the data

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.

Relevance

The Business Register and Employment Survey (BRES) collects comprehensive employment information from businesses in England, Scotland and Wales, representing the majority of the Great Britain economy. The [Northern Ireland Statistics and Research Agency \(NISRA\)](#) collects the same BRES information independently in Northern Ireland. Both data sources are then combined to produce estimates on a UK basis.

BRES is regarded as the definitive source of official employee and employment statistics by industry.

Accuracy and reliability

Estimates are subject to various sources of error. Here, "error" is defined as the difference between the estimate and the unknown true value. Total error consists of two elements: the sampling error and the non-sampling error.

Sampling error

BRES is based on a sample survey estimating the number of employees, which gives rise to sampling error. The actual sampling error for any estimate is unknown but can still be estimated, from the sample, a typical error, known as the standard error. This provides a means of assessing the accuracy of the estimate when an unbiased or approximately unbiased estimator is used. The lower the standard error, the more confidence there can be that the estimate is close to the true value. The coefficient of variation (CV) can be calculated as the standard error divided by the estimate, and it is used to compare the relative accuracy across surveys or variables. The CV is one indicator of the quality of the estimate: the smaller the CV, the higher the precision. Quality measures are published alongside outputs, with colour-coded bands to indicate different levels of quality in the data, which provide useful information for the users on the quality of the data.

Non-sampling error

Non-sampling error is not easy to quantify and includes errors of coverage, reporting, processing and non-response. Response rates give an indication of non-response bias under an assumption that responders and non-responders differ. For the 2024 survey period, approximately 86,000 businesses were sampled for Great Britain and the response rate was 81.2%.

To maximise the accuracy of the survey estimates, the sample selection is carried out after the annual Inter-Departmental Business Register (IDBR) update processes are complete. This should minimise the selection of misclassified businesses and defunct reporting units and inadequate coverage of newly established businesses.

Various procedures are in place to ensure that errors in reporting are minimised. Year-on-year comparisons are made at respondent, local unit, and aggregate levels. Disparities are investigated to ensure consistent annual returns. Congruence checks are made against other surveys to ensure consistent values across industries from different surveys.

As BRES is used both to update the register and to produce estimates, there is a risk of feedback bias. To reduce this bias to a minimal level, the register employee count is modelled using survey data and the modelled values are used in the auxiliary variable in calibration.

Reliability

Another indicator of accuracy is reliability, which can be measured by assessing the difference between the first published estimate and the final revised figure. BRES adheres to a revisions policy whereby current survey estimates together with a revision of the previous year's survey estimates are published. Late returns or information received in the course of the following year's survey may lead to changes to the estimates after the provisional publication. Such changes are incorporated into the figures when the revised estimates are published in the following year.

Coherence and comparability

BRES replaced the Annual Business Inquiry part 1 (ABI1) employee survey. It represents a change in methodology and data source when compared with the ABI1, which had been published on a comparable basis since 1997. Any comparison with the ABI1 estimates must be treated with caution. Work has been undertaken to identify and explain the reasons for, and impact of, any discontinuity and a paper relating to this can be found on both the national online manpower information service (Nomis) and the [BRES product page](#). Scaling factors can be calculated by using the estimated BRES and ABI1 2008 estimates to produce a modelled time series on a consistent basis.

Individual returns are classified using Standard Industrial Classification 2007 (SIC 2007). Regarding the ABI1, data for 1997 to 2002 were collected under SIC 1992 and data from 2003 onwards were collected under SIC 2003. Both the 2007 and 2008 ABI1 estimates were published on a SIC 2003 and SIC 2007 basis. The data for these years can be found in the [UK SIC archive](#).

Users of BRES require that Office for National Statistics (ONS) employment statistics be coherent with each other; this is achieved by applying congruence checks between BRES and Monthly Business Survey (MBS) returns and using common methods where possible. As the BRES sample size is bigger than that of the MBS, BRES outputs are more accurate and hence estimates from the workforce jobs (WFJ) series are benchmarked to BRES estimates on an annual basis.

The [Labour Force Survey \(LFS\)](#) is another ONS measure of total jobs in the economy. The BRES outputs are regarded as the best estimates at a detailed regional and industrial level. The main differences between them are:

- BRES is a point-in-time survey requesting employee counts on a specific date in the year, while the LFS estimates are averages for three month periods
- the LFS definition of employment is anyone (aged 16 years or over) who does at least one hour's paid work in the week prior to their LFS interview or has a job that they are temporarily away from (for example, on holiday); on the other hand, BRES produces point-in-time estimates of full- and part-time employees on the payroll
- unlike BRES, LFS includes people who do unpaid work in a family business, government-supported trainees, and HM Forces, including the self-employed as long as they are registered for Value Added Tax (VAT) or Pay-As-You-Earn (PAYE); because the LFS includes these "below the threshold" very small businesses, employee estimates from LFS and BRES are not directly comparable
- LFS is a household survey and BRES is a survey of businesses – there is often a conflict between which industry people actually work in and which they think they work in, and LFS relies on respondents to self-classify to an industry; the answers that employees give in response to the LFS industry question may be influenced by the nature of their own job, which may not reflect the main activity of the organisation and as a result, BRES figures give a more reliable industry breakdown than LFS

BRES is also used to update the employment data on the IDBR, ensuring it is as up to date as possible. This improves the accuracy of all estimates produced from register-based surveys through increased accuracy of the auxiliary variable (for example, employment) used in sampling and estimation.

There are other sources which measure employment in the UK, such as WFJ and publications from other departments. A helpful summary of and comparison between these sources can be found in our [Comparison of labour market data sources](#) from 2022.

Accessibility and clarity

Our recommended format for accessible content is a combination of HTML web pages for 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 narrative in PDF format. In some instances, other software may be used, or may be available on request. Available formats for content published on our website but not produced by us, or referenced on our website but stored elsewhere, may vary. For further information, contact us at bres@ons.gov.uk.

Timeliness and punctuality

The following list shows the time lag between publication and the reference period to which the data refer. As an example, these timings are for the publication of the BRES estimates for the 2022 survey period:

- provisional national results release: 12 months after the reference period
- revised national results release: 24 months after the reference period

The time lag between publication and the period to which the data refer is considered the minimum required to produce estimates of a high enough quality to meet user needs, taking into consideration:

- the amount of time it takes contributors to complete and return the BRES forms (as BRES asks for detailed local unit information it can take contributors with a large number of local units a significant period of time to return all the completed forms)
- the large size of the BRES sample (87,000 contributors)
- the validation and quality checking of the data and estimates prior to publication

There have been instances where BRES has not been published on the original planned date, because of various factors both from within the ONS and externally. In these incidences, the delay is announced as soon as possible so users are aware at the earliest possible date, and the delayed period is as short as possible to minimise disruption.

Concepts and definitions

The BRES definition of an employee is anyone working on the BRES reference date who is aged 16 years or over that the contributor directly pays from its payroll(s), in return for carrying out a full-time or part-time job or being on a training scheme. The snapshot date is the first Friday after the second Thursday in September of a given year. Part-time workers are classed for BRES as those who work 30 hours per week or less.

The BRES definition of an employee includes:

- all workers paid directly from the business's payroll(s) or by an external payroll provider on behalf of the company
- those working from home
- those temporarily absent but still being paid, for example, on parental or sick leave
- employees at sites where the planned activity is for less than 1 year
- employees at sites manned for less than 20 hours per week
- North Sea Oil Workers and any other employees working on the UK Continental Shelf (the waters surrounding the UK)

The BRES definition of an employee excludes:

- any agency workers paid directly from the agency payroll
- voluntary workers
- former employees only receiving a pension
- directors and working owners who are not paid via PAYE

Employment is obtained by adding the number of working owners to the number of employees. Working owners include sole traders, sole proprietors and partners who receive drawings or a share of profits but are not paid via PAYE.

Geography

The sample does not cover Northern Ireland. Northern Ireland contributor data are supplied directly to us by NISRA. These data are added to the Great Britain-based tables produced by the BRES results system to produce UK-based tables. It should be noted that low-level aggregate estimates published on Nomis cover Great Britain only.

Likewise, the survey does not collect farm agriculture data. These data are supplied at an aggregated level by the [Department for Environment, Food and Rural Affairs \(DEFRA\)](#), the Scottish Government, the Welsh Government and the [Department of Agriculture, Environment and Rural Affairs Northern Ireland \(DAERA\)](#). This means it is only possible to include farm agriculture in the BRES estimates at the lowest aggregated level of geography supplied, which is at region level. These data are added to the estimates after BRES estimation has been run and are then included in the aggregate estimates.

BRES figures published on our website are released within a statistical bulletin along with a number of detailed supplementary tables. Most published estimates have a quality measure attached and all figures on our website are subject to standard disclosure rules:

- at United Kingdom or Great Britain level, five-digit Standard Industrial Classification (SIC) and Broad Industrial Grouping (BIG)-level data is available
- at region level, BIG-level data is available
- at local authority (district, county and metropolitan) level, only overall totals are available without industry breakdown

Output quality

Revisions arise from a complete rerun of survey results, including reweighting and taking on any new returned data. The complete revised dataset will be re-released as the final dataset. Proposed revisions outside of this regime will be logged by the results team and considered for release if appropriate.

Revisions might also arise under other circumstances, for example, following a change in methodology or the introduction of a new SIC. If so, these revised datasets will be re-released in a planned and co-ordinated way. Significant revisions will be explained to both internal and external users at the time of release, subject to the usual rules on confidentiality.

For more details on related releases, the release calendar is available online and provides 12 months' advance notice of release dates. If there are any changes 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 Official Statistics](#).

6 . Methods used to produce the data

Sample design

The Business Register and Employment Survey (BRES) sample currently contains around 87,000 businesses from across the Great Britain economy. The Inter-Departmental Business Register (IDBR) is used as the sampling frame from which a stratified random sample is drawn. The strata are defined by Standard Industrial Classification (SIC) 2007, by country and by register employment size, with all register employment sizes of businesses being covered. The design is a stratified one-stage clustered sample, where the stage one units (or clusters) are enterprises, or reporting units (RUs), and the elements in each cluster are local units.

An enterprise in economic terms is defined as the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise may carry out one or more activities at one or more locations. An enterprise may be a sole legal unit.

An RU is the unit used for collection of information through business surveys. In most instances it equates to the enterprise but for the more complex businesses, it is part of an enterprise defined by a list of local units (LU) ("local unit list reporter").

The LU is an enterprise or part thereof (for example, a workshop, factory, warehouse, office, mine, or depot) situated in a geographically identified place. At or from this place economic activity is carried out for which, save for certain exceptions, one or more persons work (even if only part-time) for one and the same enterprise.

If an enterprise is selected for BRES, then all its constituent local units are selected. Data are requested from each local unit. Broadly, the sample is stratified into large or complex enterprises, unusual enterprises, and medium and small enterprises. Medium and small enterprises are further stratified by country (England, Scotland and Wales) and two-digit SIC 2007. All enterprises in the strata containing large or complex or unusual businesses, or medium enterprises in Scotland and Wales are included in the sample. Enterprises in other strata are sampled using a variety of sampling rates aimed to optimise the design.

Adjusting design weights to unit non-response and births and deaths

Unit non-response is addressed through re-weighting and our standard method for births and deaths adjustment is used; both adjustments are carried out at either sampling stratum level or post-stratum level. The adjusted design weight is given by the following equation:

$$dweight = \frac{N}{n_r} \left(1 + \frac{n_d h_{bd}}{n_r - n_d} \right)$$

Where N is the total number of enterprises in the universe in a given stratum, n_r is the number of responding enterprises, n_d is the number of dead enterprises among the respondents, and h_{bd} is the births-to-deaths ratio. This is to account for businesses which have ceased trading. In ONS, the birth-to-deaths ratio is set to 0 for businesses with very large employment and 1 for other businesses.

To implement this adjustment, we split the cells containing very large or complex businesses into two sub-cells: a sub-cell for businesses with an employment equal to or exceeding a specified threshold and a sub-cell with register employment below the threshold. The threshold has been set to 250.

The design weight is also referred to as the a-weight.

Calibration

The adjusted design weights are calibrated with respect to total register employee counts. It is a two-way calibration with respect to industry classification (by section) and region, and it is carried out at RU level. Two calibration, or model, groups are defined: one group for cells containing large or complex businesses, and another group for the remainder of the cells. It is assumed that the variance of RU returns is on average proportional to the register employee counts.

Within each calibration group, the adjusted design weights are calibrated so that, in each section and each region, the estimate of total register employee count is equal to the total register employee count. Because calibration is at RU level, there is no need to adjust for births and deaths of local units. The estimation tool used to compute the calibration weights is the Generalised Estimation System (GES), developed by Statistics Canada (see ['Methodological Principles for a Generalized Estimation System at Statistics Canada' from the Journal of Official Statistics](#) for details). The weight factor produced during calibration is known as the g-weight.

Outlier treatment

The estimation for the survey variables in BRES is based on local unit returned values; the treatment of outliers is also applied at local unit level. Winsorisation is the outlier treatment method used (see ['Winsorization for Identifying and Treating Outliers in Business Surveys' for more information](#)); this requires obtaining predicted values for the local units with returns.

Winsorisation parameter values (often referred to as L-values) have been derived for all three survey variables: total employees, full-time employees, and part-time employees. Once all three variables have been winsorised, the components (full-time and part-time) are scaled to add up to the winsorised total employee value. Total employment is calculated as the weighted winsorised total employees plus weighted working owners.

Estimation

Estimation is based on local unit level returned data, which means domains are defined on the basis of local unit SIC 2007 and region. So, the estimate of the total of a given variable Y in domain D is given by the following equation:

$$\hat{T}_{yd} = \sum_{i \in s} \sum_{l \in D} a_i g_i \tilde{y}_{i,l}$$

where a_i and g_i are the adjusted design and g-weights for responding RU i , respectively, s_y is the set of responding RUs.

Variance estimation

Standard errors and coefficients of variation for every specified domain are produced by the tool GES, apart from those below the minimum domain.

Minimum domain methodology

Minimum domains are the lowest level at which direct estimates, that is, those obtained by applying weights to the returned data, are considered robust. BRES collects data at the individual local unit level and it estimates employment for all non-sampled local units in the BRES business universe. The residual estimate (weighted estimate, minus the returned values) is spread pro-rata across the non-surveyed units based on their IDBR register employment, while returned values are preserved, giving estimates with relatively low variance even at very detailed levels, but at the expense of introducing some bias. The current minimum domains are set at region geography and a combination of two-digit and three-digit SIC 2007 industry levels. The use of minimum domains provides good quality estimates at low-level geographies, although this method means that analytical standard errors cannot be calculated for estimates below the minimum domain level.

The estimates of the standard errors produced by GES do not reflect the use of estimation for minimum domains and tend to be very large for low levels of aggregation. Approximate standard errors that account for the minimum domain methodology but ignore the bias introduced can be produced using bootstrapping (resampling techniques for inferring the distribution of a statistic derived from a sample). More specifically, the Rao-Wu rescaling bootstrap method is employed (see the article, [Some Recent Work on Resampling Methods for Complex Surveys](#), for more information). The approach taken is to use GES for levels of aggregation at or above the minimum domains, overall and by public and private, and to use the bootstrap for levels below the minimum domains.

Statistical disclosure

BRES is conducted under the Statistics of Trade Act (STA) 1947. This act imposes restrictions on the way data collected during the survey may be used. The provisions of the STA are further regulated by the [Employment and Training Act 1973 \(ETA\)](#), as amended by the [Employment Act 1989](#), which states that local planning authorities may use confidential data only for purposes that relate to development plans.

The main aim of these restrictions is to protect the identity of individual businesses, which have made statistical returns, from being disclosed or otherwise deduced. Some of the outputs have already been subjected to disclosure control and, therefore, the issue of confidentiality does not arise.

Safeguarded BRES extracted by users of the National Online Manpower Information Service (Nomis) database has not been suppressed and contains potentially disclosive cells. Access to BRES Safeguarded estimates on Nomis is restricted, by the provisions of the ETA 4(3) (f), to End User Licence (EUL) holders only. EUL misholders must be UK residents only and are required to agree a Data Access Agreement and must agree to be bound by the conditions contained within to access the Safeguarded estimates.

Users of Safeguarded BRES estimates on Nomis are personally responsible for ensuring that any information which they download are not put into the public domain.

7 . Other information

Useful links

[Winsorization for Identifying and Treating Outliers in Business Surveys](#)

Article | Released on January 2000

Paper from Proceedings of the second international conference on establishment surveys: survey methods for businesses, farms, and institutions, speculating on the ways winsorization can be used to lessen the impact of outliers.

[Methodological Principles for a Generalized Estimation System at Statistics Canada](#)

Article | Released January 1995

Paper from the Journal of Official Statistics describing the principles behind the Generalized Estimation System (GES).

[The Rao-Wu Rescaling Bootstrap: From theory to practice](#)

Article | Released December 2010

Discussion from the Federal Committee on Statistical Methodology Research Conference on the bootstrap method of replication.

[Some Recent Work on Resampling Methods for Complex Surveys](#)

Article | Released January 1992

Methodology from the journal, Survey Methodology.

8 . Cite this methodology

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