

Information paper

Summary Quality Report for the Business Register Employment Survey

1 Introduction

This report is part of a rolling programme of quality reports being introduced by the Office for National Statistics (ONS). The full programme of work being carried out on [Statistical Quality](#)¹ is available on the ONS website. Summary Quality Reports are overview notes which pull together key qualitative information on the various dimensions of quality as well as providing a summary of methods used to compile the output.

This report relates to the [Business Register Employment Survey \(BRES\)](#)² which replaced the [Annual Business Inquiry \(Part 1\) employee estimates \(ABI/1\)](#)³ and [Business Register Survey \(BRS\)](#)⁴ in 2009 ([background notes](#)⁵). [BRES](#)² is an annual survey which collects information at the local unit (LU) level for the total number of employees and total turnover on a specific reference date in September. A local unit is defined as an enterprise or part thereof (for example, a workshop, factory, warehouse, office, mine or depot) situated in a geographically identified place where economic activity is carried out for which - save for certain exceptions - one or more people work (even if only part-time) for one and the same enterprise. [BRES](#)² solely concentrates on business employment details while the [Annual Business Survey \(ABS\)](#)⁶ uses the information relating to the financial turnover of a business. This report specifically concentrates on [BRES](#)² and aims to provide users with guidance to assess the quality and usability of [BRES](#)² estimates.

2 Summary of Quality

2.1 Relevance

The degree to which the statistical product meets user needs for both coverage and content.

[BRES](#)² collects comprehensive employment information from businesses in England, Scotland and Wales representing the majority of the Great Britain economy. [The Department of Enterprise Trade and Industry Northern Ireland \(DETINI\)](#)⁷, collects the same [BRES](#)² information independently in Northern Ireland.. Both data sources are then combined to produce [BRES](#)² estimates on a UK basis. High level estimates are published on the [Office for National Statistics \(ONS\) website](#)⁸ and detailed regional estimates are published on the [National On-line Manpower Information Service \(NOMIS\)](#)⁹ website. [BRES](#)² is regarded as the definitive source of official Government employee statistics by industry.

In terms of employee data, the survey sample of approximately 80,000 businesses is weighted up to represent the GB economy covering all sectors, such as Production, Construction, Service Trades, Distribution, Public Administration, Health and Education.

Publication on the National Statistics website

[BRES](#)² figures published on the [ONS website](#)⁸ are released within a Statistical Bulletin with a number of detailed supplementary tables. The levels at which the estimates are published are shown in table 1 below.

All estimates published on the [ONS website](#)⁸ will have a quality measure attached. Those 'levels' highlighted in yellow only provide information on the total number of employees and a full-time/part-time split. A male/female split estimate will also be available for certain geography/industry levels (these will be modelled variables). All figures on the [ONS website](#)⁸ are subject to standard ONS disclosure rules.

Table 1: The levels at which BRES estimates will be published on [ONS website](#)⁸

Geography/Industry	5-digit SIC*	3-digit SIC* ¹	2-digit SIC*	BIG**
UK <i>inc private / public sector splits</i>	√	√	√	√
Government Office Region (GOR) <i>inc private / public sector splits</i>		√	√	√
Local Authorities (county/metropolitan unitary) <i>inc urban / rural splits</i>			√	√
Local Authorities (district/unitary) <i>inc urban / rural splits</i>				√

*SIC: Standard Industrial Classification

**BIG: Big Industrial grouping

Publication on NOMIS

[BRES](#)² publishes GB based estimates on [NOMIS](#)⁹. Estimates published on [NOMIS](#)⁹ are disclosive aggregate estimates down to a Lower Super Output Area (LSOA) geography at a 5 digit [Standard Industrial Classification 2007 \(SIC 2007\)](#)¹⁰. Access to the [BRES](#)² estimates is via the purchase of a Notice which contains an associated Data Access Agreement (DAA). The purchase of a Notice requires users to abide by the terms of the DAA.

	BRES
What it measures	On the ONS website ⁸ : The number of employees in the United Kingdom economy on a male/female and full time/part time basis from a UK 5 digit SIC 2007 ¹¹ level to a Parliamentary Constituency Broad Industrial Group (BIG) SIC 2007 ¹⁰ . On NOMIS ⁹ : The number of employees in the GB economy on a full-time/part-time basis down to a 5 digit SIC 2007 ¹⁰ and LSOA geography level.
Frequency	Annual.
Sample Size (achieved)	Approximately 80,000
Periods available	From 2009.
Sample frame	Inter-Departmental Business Register (IDBR).
Sample design	Stratified random sample where the strata are defined by SIC 2007 ¹⁰ , country, and employment size of a business.
Weighting	Each responding business represents a number of similar businesses from the IDBR, based on number of employees and the SIC 2007 ¹⁰ . The sampling weights are adjusted for non-response and births and deaths and are combined with calibration weights, based on register employee counts, to produce the overall weights. Calibration is carried out at enterprise level. Weights are updated annually.
Estimation	It is based on local unit returns; direct domain estimation is used for high levels of aggregation whereas minimum domain estimation is used for lower levels.

Outliers	Winsorisation is the outlier treatment method used, which requires specifying parameter values using past data (BRS data were used to determine the initial values; they will be updated regularly).
Part-time definition	For the purpose of the survey part-time is classed as 30 hours per week or less.

The [BRES²](#) data and estimates are used widely, both within and outside government and are a vital source of business employee information. The key users and uses of the output include:

- **Eurostat** – [BRES²](#) is a source of annual structural statistics for the Structural Business Statistics Regulation (SBSR), used for policy monitoring and formulation by the European Union (EU).
- **The Scottish Government (SG) and the Welsh Assembly Government (WAG)** - [BRES²](#) provides estimates on employee numbers which are essential in the calculation of [Scottish Government¹¹](#) and [Welsh Assembly Government¹²](#) employment trends. Estimates on all sectors are incorporated into the Scottish and Welsh figures and may also be utilised in internal briefings.
- **Department of Business, Innovation and Skills (BIS)** – The [UK Department for Business, Innovation and Skills \(BIS\)¹³](#) uses [BRES²](#) estimates to assess the structure and performance of industries.
- **Workforce Jobs** - It is usual for the Workforce Jobs series (WFJ), much of which is initially based on the Short Term Employment Survey's estimate of employee jobs, to be benchmarked on the [BRES²](#) estimate (formerly the [ABI/1³](#) estimate). This benchmarking usually takes place in time for the December [Labour Market Statistics First Release¹⁴](#) in the following year.
- **Annual Business Survey** – The [\(ABS\)⁶](#) collects financial data via the [BRES²](#) form which are then matched to employment estimates to calculate turnover per head.
- **Local Government** - Local Government planning departments are major users of [BRES²](#) using the estimates published on [NOMIS⁹](#) to forecast trends in employment in their specific areas and to claim for Central Government and European funding.

[BRES²](#) will be one of the key data sources used to compile Nomenclature of Units for Territorial Statistics (NUTS) 2 and 3 Gross Value Added (GVA) data, with the NUTS2 data the key input to the allocation of EU structural funds to deprived regions of the EU.

Additional users also include national government departments and bodies, businesses, academics and the general public. User groups are consulted to ensure that the data remain relevant to their needs.

2.2 Accuracy

The closeness between an estimated result and the (unknown) true value.

Estimates are subject to various sources of error. Total error consists of two elements, the sampling error and the non-sampling error. More detail on estimates and measures of these errors can be found on the [BRES²](#) product page. Quality measures will also be published alongside all standard outputs on the [ONS website⁸](#) which will provide useful information for the users on the quality of the data.

Sampling error

[BRES²](#) is based on a sampled survey estimating the number of employees which gives rise to sampling errors. The actual sampling error for any estimate is unknown but we can estimate, 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 confident we 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 indicates one of the qualities of an estimate; the smaller the CV the higher the precision.

Quality measures are published alongside outputs which will provide useful information for the users on the quality of the data. The CVs and standard errors are available at all geographies published on the [BRES²](#) product page. The CVs and standard errors are calculated from current [Geography¹⁵](#) estimates

Non-sampling error

Non-sampling errors are not easy to quantify and include errors of coverage, measurement, processing and non-response. Where there are small differences between responders and non-responders, response rates give an indication of the likely impact of non-response bias on the estimates.

In seeking to maximise the accuracy of the survey estimates, the sample selection is carried out after the annual IDBR update processes are complete. This should minimise the selection of misclassified businesses and inadequate coverage of newly established businesses and defunct reporting units.

Various procedures are in place to ensure that errors are minimised. Year-on-year comparisons are made at respondent, local unit and aggregate level. 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](#)² is used to both update the register and 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.

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](#)² adheres to a Revisions Policy whereby both 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 in the estimates after publication. Such changes are incorporated into the figures when the revised estimates are published the following year. However, such revisions will only be made if the change is more than half the standard error of the domain in question (see [BRES](#)² Revisions Policy below).

2.3 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.

The [National Statistics Release Calendar](#)¹⁶ is available on the [ONS website](#)⁸ and provides twelve month's advance notice of releases. 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 Official Statistics](#)¹⁷.

The following list shows the time lag between publication and the reference period to which the data refer. These timings are for the publication of the [BRES](#)² estimates for the 2009 survey period.

1. Provisional National Results Release: 15 months after the reference period.
2. Revised National Results Release: 27 months after the reference period.

It is intended to bring forward the publication date forward from December to September as soon as is practically possible. Once this action is implemented this will change the timings as follows:

1. Provisional National Results Release: 12 months after the reference period.
2. Revised National Results Release: 24 months after the reference period.

BRES Revisions Policy

The BRES Revisions Policy states the following:

- Following the initial publication of the data for year t in December (or September) of year t+1, the data will be revised and re-released in December (or September) of year t+2 (i.e. at the same time as the release of the provisional data for year t+1).
- The revisions will arise from a complete rerun of survey results, taking on any new returned data, revised imputations and reweighting. 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, if resources permit, considered for release.

- 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, coordinated, way.
- Significant revisions will be explained to both internal users and external users at the time of release, subject to the usual rules on confidentiality

It should be noted that estimates are liable to revision only if they meet the criteria contained within the revisions policy itself. The revisions policy states that in order for estimates to qualify for revision the potential revision must be more than half the standard error of the domain in question.

2.4 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.

[BRES²](#) figures are published on the [ONS website⁸](#) and released within a Statistical Bulletin with a number of detailed supplementary tables. These figures are available on a free-to-view basis. Disclosive aggregate GB based estimates are published on [NOMIS⁹](#) and are accessible by the purchase of a Chancellor's Notice which can be applied for via the [NOMIS⁹](#) website.

[BRES²](#) employee estimates are published twice for every annual survey, once in December of the following year at the provisional level and then a final revised release the following December. For the 2009 estimates the publication date is December. For the 2010 [BRES²](#) onwards the publication date is intended to move forward by three months to September, in response to feedback from user consultation exercises.

The [BRES²](#) publication is available online at [NOMIS⁹](#) and provides a comprehensive overview of the UK economy at various regional levels. Users of the estimates are required to purchase a Chancellor's Notice via [NOMIS⁹](#) in order to access published estimates. High level estimates are available free of charge on the [BRES²](#) product page and via the Statistical Bulletin (also published in December).

The [BRES²](#) results team can be contacted by e-mail, annual.employment.figures@ons.gov.uk, to provide advice on additional estimates and alternative data formats.

2.5 Comparability

The degree to which data can be compared over time and domain.

[BRES²](#) is scheduled to be published for the first time in December 2010 and replaces the [ABI/1³](#) employee survey. It represents a new methodology and change in data source when compared to the [ABI/1³](#), which had been published on a comparable basis since 1997. As this is the first year of [BRES²](#) no direct comparison is possible with estimates prior to 2009 and any comparison to the [ABI/1³](#) 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 [NOMIS⁹](#) and the [BRES²](#) product page.

The figures are collected and presented at the new Standard Industrial Classification (SIC) [SIC 2007¹⁰](#) in line with Eurostat guidelines. With regards to the [ABI/1³](#) data for 1997 – 2002, this was collected under [SIC 1992¹⁸](#) and data from 2003 collected under [SIC 2003¹⁹](#). Both the 2007 and 2008 [ABI/1³](#) estimates were published on a [SIC 2003¹⁹](#) and [SIC 2007¹⁰](#) basis.

The BRES methodology and comparisons with the ABI

Prior to 2006 [ABI/1³](#) questionnaires were sent to businesses selected from the IDBR. These questionnaires were sent to the reporting unit (RU) which provided employment details on the number of people in the business who worked on the survey reference date. An RU is defined as the unit that reports to the survey authority. It reports information for each of the local units (LUs) within its business structure. In certain cases it may correspond to a single LU.

The returned data would then be apportioned out to all local units/data units (LUs) linked to this RU on the basis of their IDBR registered employment. Essentially, the [ABI/1³](#) collected real reporting

unit data via the [ABI/1³](#) questionnaire but then apportioned this real data out to attached local units using IDBR registered employment as a proxy.

In 2006 the [ABI/1³](#) estimates became a hybrid of estimated LU employment (using the collection method described above) and real local unit data. The real local unit data were added into results by taking on data collected by [BRS⁴](#). [BRS⁴](#) questionnaires asked for specific LU data but the onus was still on the RU to provide the figures. In 2006 just over one third of the [ABI/1³](#) sample consisted of [BRS⁴](#) data. The [BRS⁴](#) questionnaire was still sent to the main RU, as was the [ABI/1³](#) questionnaire, but asked for specific LU information. When the [ABI/1³](#) estimates were finalised there would be an element of apportioned data (still collected via [ABI/1³](#) forms) together with real LU data (as collected by [BRS⁴](#) questionnaires).

With the introduction of [BRES²](#) all data became LU based. [BRES²](#) questionnaires were still sent to the RU but the onus was placed on individual LUs to provide their own data returns. The result of this change is to make the actual LU data much more accurate and timely than they were under its predecessor with obvious benefits for the quality of low level regional estimates. Under the [ABI/1³](#) the approach to validation was largely a "top down" one where the year-on-year movement of the RU was examined. This raised the possibility of large but equal movement between two local units belonging to a single RU not being flagged as a potential discrepancy. Under [BRES²](#) the approach is "bottom up" with validation being undertaken at the LU level. Any significant change at LU level is thus flagged for investigation regardless of what the movement is at the RU level.

Users will be provided with a set of scaling factors which they can apply to [ABI/1³](#) figures to make a comparison between [BRES²](#) and published [ABI/1³](#) estimates possible.

2.6 Coherence

The degree to which data that are derived from different sources or methods, but which refer to the same phenomenon, are similar.

The users of [BRES²](#) require aggregate estimates to be coherent with other surveys. Survey estimates, where possible, are coherent with various short term indicators produced from the Monthly Business Survey (MBS). In addition, the survey aims to be consistent with related annual and quarterly surveys such as the Workforce Jobs Series (WFJ). WFJ are benchmarked to [BRES²](#) on an annual basis.

The [Labour Force Survey \(LFS\)²⁰](#) is regarded by ONS as the best measure of total jobs in the economy. The [BRES²](#) outputs are regarded as the best estimates at a detailed regional and industrial level.

- [BRES²](#) is a point in time survey requesting employee counts on a specific date in the year. The [LFS²⁰](#) estimates are averages for three-month periods.
- The [\(LFS\)²⁰](#) is employment based, the [BRES²](#) is employee based. The [LFS²⁰](#) definition of employment is anyone (aged 16 or over) who does at least one hour's paid work in the week prior to their [LFS²⁰](#) interview, or has a job that they are temporarily away from (e.g. on holiday). On the other hand, [BRES²](#) produces point in time estimates of full and part time employees on the payroll. Also, unlike [BRES²](#), [LFS²⁰](#) includes people who do unpaid work in a family business, working proprietors, the self employed, Government Supported Trainees and HM Forces. This means estimates from [LFS²⁰](#) and [BRES²](#) are not directly comparable.
- [LFS²⁰](#) is a household survey while [BRES²](#) 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 [LFS²⁰](#) relies on respondents to self-classify to an industry. The answers that employees give in response to the [LFS²⁰](#) industry question may be influenced by the nature of their own job, which may not reflect the main activity of the organisation for which they work. As a result [BRES²](#) figures give a more reliable industry breakdown than [LFS²⁰](#).

[BRES²](#) will also improve the timeliness of the employment data on the Inter-Departmental Business Register (IDBR) through an increased sample size and improved design. This will improve the accuracy of all estimates produced from register-based surveys through increased accuracy of the auxiliary variable (for example, employment).

3 Summary of methods used to compile the output

Coverage

[BRES](#)² estimates cover UK businesses registered for Value Added Tax (VAT) and/or Pay As You Earn (PAYE) and are classified to the [SIC 2007](#)¹⁰

[BRES](#)² obtains the required details on these businesses from the IDBR which is then used as the survey sampling frame.

It covers all major industry groups, such as Production, Construction, Distribution, Service Trades and many more groups in [SIC 2007](#)¹⁰.

The sample does not cover Northern Ireland. Northern Ireland contributor data are supplied direct to ONS by [DETINI](#)⁴. Northern Ireland local unit sample data are added to the GB local unit data collected via [BRES](#)² and this is run through the results system to produce UK based estimates. Weights are recalculated based on a UK sample and universe, and estimates are produced for all local units in the [BRES](#)² UK based universe. These are then aggregated up to produce high level UK estimates published on the [ONS website](#)⁸ website. It should be noted that low level aggregate estimates published on [NOMIS](#)⁹ are derived using estimates based on the [BRES](#)² GB sample and universe.

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 \(DEFRA\)](#)²¹ the [Scottish Government](#)¹¹ and [Welsh Assembly Government](#)¹² and are supplied at an aggregated, not individual local unit, level. This means it is only possible to include farms agriculture at the lowest aggregated level of geography supplied. These data are added to the estimates after [BRES](#) estimation has been run and are then included in the aggregate estimates.

Sample design

The [BRES](#)² sample currently contains around 80,000 businesses from across the Great Britain economy. The IDBR is used as the sampling frame from which a stratified random sample is drawn. The strata are defined by [SIC 2007](#)¹⁰, by country and by employment size, with all employment sizes of businesses being covered. The design is a stratified one stage clustered sampling, where the stage 1 units (or clusters) are enterprises, or RUs, and the elements in each cluster are local units. If an enterprise is selected, 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](#)¹⁰. The strata containing large or complex or unusual businesses and medium enterprises in Scotland and Wales are take-all strata.

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

Unit non-response is addressed via reweighting and the standard ONS method for births and deaths adjustment is used; both adjustments are carried out at either sampling stratum level or post-stratum level (see below). The adjusted design weight is given by

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

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

In ONS, the births-to-deaths ratio h_{bd} is set to 0 for businesses with a very large employment and 1 for other businesses. To implement this adjustment, ONS post-stratified the cells containing very large businesses (cells 1, 3 and 7) into two subcells each: a subcell for businesses with an employment equal to or exceeding a specified threshold and a subcell with employment below the threshold. The threshold has been set to 250. In the three subcells containing businesses whose employment equals or exceeds the threshold the births-to-deaths ratio has been set to 0; elsewhere this ratio has been set to 1.

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 (by GOR), and it is carried out at RU level. Two calibration, or model, groups are defined: one group for cells containing large businesses, and another group for the remainder of the cells. It is assumed that the variance of RU returns is proportional to the register employee counts. Within each calibration group, the adjusted design weights are calibrated so that, in each Section and each GOR, 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. This is dealt with directly at the estimation stage. The estimation tool GES is used to compute the calibration weights.

Outlier treatment

The estimation for the survey variables in [BRES²](#) 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; 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 employee 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.

Estimation

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

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

where a_i and g_i are the adjusted design and g-weights for responding RU i , respectively, s_r is the set of responding RUs, and \tilde{y}_{il} is the winsorised value of the return from local unit l in RU i .

Gender splits estimation

[BRES²](#) does not collect data for males and females but produces estimates for total full-time male, part-time male, full-time female and part-time female employees. These estimates are obtained by combining gender splits estimates from The [Annual Survey of Hours and Earnings \(ASHE\)²²](#) with full-time and part-time data from [BRES²](#). [ASHE²²](#) estimates for the proportions for males and females among full-time and part-time, respectively, are obtained at the lowest level that [ASHE²²](#) data permits. The levels of aggregation these proportions are computed are: 4 digit SIC, 2 digit SIC by GOR, BIG by LA. The splits are then derived by multiplying the full-time and part-time [BRES²](#) returns by the corresponding [ASHE²²](#) gender split proportions. This estimation method is synthetic and hence the estimates of gender splits may be subject to some bias. Furthermore, estimates at different levels may not be consistent.

Variance estimation

Standard errors and coefficients of variation for every specified domain are produced by the tool GES.

For the gender split estimates, the variances are obtained by combining the variances of the [ASHE²²](#) proportions and the variances of full-time and part-time obtained from [BRES²](#).

Minimum domain methodology

Minimum domains are the lowest level at which direct estimates are considered robust. Although [BRES²](#) collects data at the individual local unit level it estimates employment for all non sampled local units in the [BRES²](#) business universe. The 'estimated' part of the estimate is spread pro-rata across the non-surveyed units on the basis of their IDBR registered 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 GOR geography and a combination of 2-digit and 3-digit [SIC 2007](#)¹⁰ industry levels. The use of minimum domains provides good quality estimates at low level geographies, although this method means that accurate standard errors cannot be calculated for estimates below the minimum domain level. The estimates produced by GES do not reflect the use of minimum domains and tend to be very large for low levels of aggregation. Approximate standard errors that take into account the minimum domain methodology but that ignore the bias introduced can be produced using the bootstrap. 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](#)² is conducted under the Statistics of Trade Act (STA) 1947. This Act imposes restrictions on the way that 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. However, employee information extracted by users of the [NOMIS](#)⁹ database has not been suppressed and contains potentially disclosive cells.

Access to [NOMIS](#)⁹ is restricted, by the provisions of the ETA 4(3) (f), to holders of Chancellor of the Exchequer's Notices. From 2007 onwards users are required to agree a Data Access Agreement (DAA) and agree to be bound by the conditions contained within, in order to access the estimates.

Users of [BRES](#)² estimates on [NOMIS](#)⁹ are personally responsible for ensuring that any information which they publish or pass on to other users does not contain disclosive figures. More information is provided via the [BRES Guide to Use of Potentially Confidential Data](#)²³.

4 References

	Title of Reference	Website Location
1	Statistical Quality Guidelines	http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=13578&Pos=&ColRank=1&Rank=272
2	Business Register Employment Survey Product Page	http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=15390
3	Annual Business Inquiry part 1 homepage	http://www.statistics.gov.uk/statbase/Product.asp?vlnk=6365
4	Business Register Survey homepage	http://www.statistics.gov.uk/CCI/nugget.asp?ID=195&Pos=4&ColRank=1&Rank=224
5	Background notes	http://www.ons.gov.uk/about/surveys/a-z-of-surveys/business-register-and-employment-survey/index.html
6	Annual Business Survey homepage	http://www.statistics.gov.uk/ABI/
7	Department of Enterprise, Trade and Investment (DETINI)	http://www.detini.gov.uk/deti-stats-index.htm
8	National Statistics website	http://www.statistics.gov.uk/default.asp
9	NOMIS	http://www.nomisweb.co.uk
10	SIC 2007	http://www.statistics.gov.uk/methods_quality/sic/downloads/SIC2007explanatorynotes.pdf

11	Scottish Government	http://www.scotland.gov.uk
12	Welsh Assembly Government	http://wales.gov.uk/?lang=en
13	Department for Business, Innovation and Skills	http://www.bis.gov.uk/
14	Labour Market Statistics First Release	http://www.statistics.gov.uk/statbase/product.asp?vlnk=1944
15	Guide to Geographies available on BRES	http://www.statistics.gov.uk/geography/
16	National Statistics Release Calendar	http://www.statistics.gov.uk/ReleaseCalendar/currentreleases.asp
17	Code of Practice for Official Statistics	http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html
18	SIC 1992	http://www.statistics.gov.uk/methods_quality/sic/contents.asp
19	SIC 2003	http://www.statistics.gov.uk/statbase/Product.asp?vlnk=14012
20	Labour Force Survey	http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=11909
21	Department for Environment, Food and Rural Affairs	http://ww2.defra.gov.uk/
22	Annual Survey of Hours and earnings	http://www.ons.gov.uk/about/surveys/a-z-of-surveys/annual-survey-of-hours-and-earnings--ashe-/index.html
23	BRES Guide to Use of Potentially Confidential Data	http://www.nomisweb.co.uk/notices/docs/infoguide.pdf