

Business Register and Employment Survey Quality Measure

The Business Register and Employment Survey (BRES) is based on a sample of all businesses registered for VAT and/or PAYE. Sampling error arises from estimating the employment in the population (all businesses registered for VAT and/or PAYE) by looking at only one portion of the population rather than the entire population. It refers to the difference between the estimate derived from a sample survey and the *true* value that would result if a census of the whole population were taken under the same conditions.

ONS applies statistical methods to the survey returns to ensure that the estimates derived are as representative of the population as possible. Nevertheless, there is still some *error* associated with these estimates, and ONS measure this by calculating coefficients of variation, which are defined as the ratio of the standard error of an estimate to the estimate itself.

For example, an estimate with a CV of 5% will have a standard error that is 5% of the estimate. The smaller the coefficient of variation the greater the accuracy of the estimate. CVs that are greater than or equal to 20% should be used with caution.

It is not possible to provide coefficients of variation on Nomis for each estimate because of the way in which users extract their own bespoke analyses. However, it is important that users understand the quality of the data they are using, and that this quality will be lower for more disaggregated breakdowns.

The tables below aim to help users understand the quality of the BRES estimates on Nomis by showing, for various levels of aggregation, what the median coefficient of variation is, as well as the 5th and 95th percentile. So for example, from the information below we can say that for Great Britain estimates by 5-digit SIC code:

- 50% will have a coefficient of variation of more than 18.4%,
- 5% will have a coefficient of variation of less than 5.3%, and
- 5% will have a coefficient of variation of more than 58.3%.
- Therefore, estimates extracted at this level should be used with caution.

Further information on how sampling error is measured is provided in a [BRES Quality and Methodology Information paper](#) (pdf) on the ONS website.

Total employees

Level of aggregation	Median CV	5th percentile	95th percentile
Great Britain total employees	0.2%	N/A	N/A
GB by broad industrial group	1.3%	3.6%	30.1%
Region total employees	0.7%	0.6%	1.1%
Region by broad industrial group	6.0%	3.2%	38.9%
GB by 3-digit SIC	10.6%	3.3%	42.5%
GB by 5-digit SIC	18.4%	5.3%	58.3%
Local authority county total employees	1.1%	0.7%	2.7%
Local authority district total employees	1.2%	0.7%	2.7%
Local authority district by broad industrial group	6.7%	1.9%	33.8%
Local authority district by 2-digit SIC	17.5%	2.3%	84.3%
Local authority district by 5-digit SIC	27.8%	2.5%	94.9%

Full-time employees

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Level of aggregation	Median CV	5th percentile	95th percentile
Great Britain total full-time employees	0.3%	N/A	N/A
Region by broad industrial group	6.1%	3.5%	35.9%
GB by 3-digit SIC	10.9%	3.7%	39.1%
GB by 5-digit SIC	18.1%	5.4%	57.6%

Part-time employees

Level of aggregation	Median CV	5th percentile	95th percentile
Great Britain total part-time employment	0.4%	N/A	N/A
Region by broad industrial group	9.5%	3.2%	38.9%
GB by 3-digit SIC	17.1%	3.7%	51.7%
GB by 5-digit SIC	25.8%	7.1%	70.6%