Office for National Statistics

Article

Exploring labour productivity in rural and urban areas in Great Britain: 2014

Analysis of productivity (GVA per Worker), 2014, by Rural Urban Classification (RUC2011), Classification of Workplace Zones England and Wales (COWZ-EW) and Built-Up Areas (BUA).

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1 . Main points

In England and Wales, the overall average labour productivity (gross value added (GVA) per worker) of the business economy in 2014 for urban areas (excluding London) was 86 (on a Great Britain equals 100) basis, which was 5 percentage points higher than for rural areas (81 on a Great Britain equals 100 basis). This gap was larger in the south of England than in the north and Midlands and in some regions, such as the North West of England, average GVA per worker in rural areas was found to be higher than in urban areas.

In the south of England, labour productivity differed by the size of the urban area, with large and medium-sized urban areas having a higher level of productivity than small urban areas. By contrast, for the north and Midlands of England, there was no correlation between the size of urban area and average labour productivity. The higher productivity of the medium and large urban areas in the south is an important source of the higher productivity levels that exist in the south of England compared with the north and Midlands.

In England and Wales overall, labour productivity was lowest in sparse areas (which are mostly rural areas). These are areas surrounded by areas of low population density.

For all area types, firm-level productivity relative to the national average is found to be the major driver of overall productivity performance. However, clustering of relatively low productivity industries such as agriculture, forestry and fishing, and accommodation and food service activities lowers the overall average productivity of the sparse (particularly sparse rural) areas.

Firms located in areas of England and Wales that are classified in the Classification of Workplace Zones as "global business" and "science and business parks" generated the highest levels of GVA per worker in 2014.

For Scotland, the productivity gap between rural and urban areas was 17 percentage points. Average GVA per worker was lowest in very remote rural areas and very remote small towns, while large urban areas generated the highest GVA per worker in 2014.

Among the rural areas in Scotland, there was a 30 percentage points' difference in productivity levels between accessible rural and very remote rural areas.

2 . Introduction

This article explores productivity of rural and urban areas in Great Britain along with other geographical classifications that can give insight into the way productivity varies spatially across Great Britain. The article begins with a short introduction to the size of the rural and urban economy for each of the three countries in Great Britain. It continues with a section examining overall economic performance (labour productivity) and the sources of the productivity of rural and urban areas in Great Britain. Then, estimates for built-up areas of different population sizes are used to understand whether there is any correlation between the size of an urban area and the productivity in the urban areas. Finally, the productivity estimates for the Classification of Workplace Zones are presented to give a further insight into the sources of productivity differences across England and Wales and within rural and urban areas.

3 . Things you need to know about this release

This release is the second Office for National Statistics (ONS) article to examine subnational productivity data using firm level micro-data. In January 2017, we published [Regional firm-level productivity analysis for the non-financial business economy](#), an output that used the firm-level micro-data to examine productivity data for the regions and city regions of the UK. This release uses similar methods to investigate firm-level productivity, but instead of focusing on standard geographical regions, it focuses on using a number of geographical classifications in order to provide additional insight into the spatial patterns of labour productivity across Great Britain.

What is productivity and how is it measured in this article?

Productivity is the main determinant of economic growth in the long-term. It is a measure of how much output is produced by a unit of input. This article focuses on labour productivity, which measures the amount of goods and services produced by one unit of labour input. Labour input can be measured as the number of jobs, workers or hours worked. Our preferred measure of labour productivity is output (or gross value added (GVA)) per hour worked on a workplace basis, as it takes into account different working hours. The estimates in this article are mainly based on firm-level micro-data, therefore due to a lack of data on the number of hours worked at plant level, labour productivity is expressed as GVA per worker in this article.

The estimates have been calculated using a methodology that aggregates firm level micro-data from the [Annual Business Survey](#) (ABS) and the [Business Register and Employment Survey](#) (BRES) into the different classifications being investigated in this article; namely the [Rural-Urban Classification](#); built-up areas ranked by size; and the [Classification of Workplace Zones](#).

The ABS is the main resource for understanding the detailed structure, conduct and performance of businesses across the UK at different geographies. The estimates in this article are based largely on approximate gross value added (aGVA)[1] from the ABS alongside employment data from BRES and are experimental. The ABS excludes the agricultural and financial industries as well as some small firms[2], the self-employed and the public sector. However, because of the obvious importance of the agriculture, forestry and fishing, and financial services industries in rural and urban analysis, this article adjusts the ABS estimates by adding in data for agriculture and financial industries to provide an estimate of the overall business economy including these two industries.

To add in the agriculture and financial industries, we have used data from ONS Regional Accounts to estimate productivity at basic prices for these industries (using GVA data for [Nomenclature of Territorial Units for Statistics](#) NUTS 1 areas for agriculture and GVA data for NUTS 3 areas for finance). This data has then been applied via employment data to small geographies so that they can then be re-aggregated back to the Rural-Urban Classification and other classifications used in this article. A complete description of the approach used can be found in the Quality and methodology section.

The results shown in this article are mostly aggregated labour productivity estimates for the different geographical areas being investigated. The aim is to give an indication of the types of area displaying relatively high or low levels of average labour productivity relative to Great Britain or England and Wales overall. Therefore, most results are provided in an indexed form relative to the Great Britain labour productivity average (that is, Great Britain equals 100) or to the England and Wales labour productivity average (that is, England and Wales equals 100) where applicable. Additionally, because observed aggregate average labour productivity of an area can reflect both the productivity of the firms located in the area or the area's industry composition, then the analysis also explores the relative importance of these factors on the overall labour productivity performance of the rural and urban areas in Great Britain.

When considering the productivity results, it is important to take into account that these data are based on nominal terms; that is, local variation in price level has not been taken into account. As such local price effects could impact these results.

What is the Rural-Urban Classification?

The [Rural-Urban Classification for England and Wales](#) is an official statistic and is used to distinguish rural and urban areas. It has been designed to be used for statistical analysis and is used widely across government for analytical and policy purposes. In terms of definitions, settlements with 10,000 resident population or more are defined as urban, otherwise settlements are defined as rural. Areas can then be split further into urban or rural categories. Urban areas are split into major conurbations, minor conurbations and city and town categories. Rural areas are split between town and fringe, village, and hamlets and isolated dwellings. In addition, a distinction is made between in a sparse setting and not in a sparse setting which here will be referred to as "sparse" and "non-sparse" areas (see explanation in next sub-section).

In Scotland, the [Scottish Government Urban-Rural Classification](#) provides a standard definition of rural areas in Scotland. This differs from the classification in England and Wales. The main difference is that for Scotland settlements of 3,000 people or more are defined as urban, and settlements of less than 3,000 people are defined as rural. This article uses the 8-fold rural urban classification for Scotland that splits urban areas into large urban areas, other urban areas, accessible small towns, remote small towns, and very remote small towns while rural areas are split into accessible rural, remote rural and very remote rural.

Please note that the definition of rurality in the rural-urban classifications is a matter of settlement form and settlement context and is not based on the economic function or the character or use of the land.

What do "sparse" and "non-sparse" mean?

There are two dimensions behind the rural urban classification. One is settlement form (e.g. town, village etc). The other is settlement context, in other words, where a settlement sits in relation to other settlements. The term 'sparse' is used to describe broad settlement contexts where the residential density in surrounding areas is particularly low. In other words, a 'sparse' area can be considered one that is surrounded by areas of low residential density for up to 30km in all directions. For a 'non-sparse' area by contrast will not have this pattern of low residential density in the wider area.

More precisely[3], in making the categorisation of sparse or non-sparse, output areas where population sparsity occurs are identified on this basis of the number of dwellings within 10 kilometres, 20 kilometres and 30 kilometres of all residential addresses within the output area. A measure – expressed as a dwelling density – is constructed at each of the three scales. Output areas within the fifth percentile on each of these three measures are identified, and where an output area falls within the fifth percentile at all three scales, it is regarded as being in a "sparse" setting.

What are "Built-up areas"?

Built-up areas are defined as land that is "irreversibly urban in character", meaning that they are characteristic of a village, town or city. They include areas of built-up land with a minimum of 20 hectares (200,000 square metres). Any areas with less than 200 metres between them are linked to become a single built-up area. They were defined for the 2011 Census and in 2011 across England and Wales, 95% of the usually resident population lived in built-up areas. The total land area of the built-up areas in 2011 was 1.4 million hectares (9.6% of England and Wales). There are 5,493 built-up areas across England and Wales, with the smallest areas having a population of just over 100.

It should be noted that it is the identification of these built-up areas that allows the creation of the rural-urban classification. A built-up area with population greater than 10,000 is regarded as urban in the England and Wales rural-urban classification while an urban area with population less than 10,000 is defined as rural (alongside non-built-up areas).

For this release, we have ranked the built-up areas in England and Wales by size so that we can examine the effect of urban size on labour productivity (see section 4). By population size the groupings are minor (less than 10,000), small (10,000 to 99,999), medium (100,000 to 499,999), large (500,000 to 999,999) and major (1 million and over). In addition, because of its distinctness economically, London has been put in its own category to allow the productivity of other Major built-up areas to be examined independently of London.

What is the Classification of Workplace Zones?

The Classification of Workplace Zones (COWZ) is a relatively new geo-demographic classification published following the 2011 Census. A number of classifications of residential neighbourhoods already existed, including the 2011 Output Area Classifications (OAC), but none of these had an explicit focus on the characteristics of workers and workplaces. The purpose of COWZ was therefore to categorise groups of areas that share similar characteristics in terms of their workers and workplaces. Its intended users are researchers, practitioners or policy makers who need to understand what makes certain areas similar or different to others in terms of their worker and workplace characteristics.

In constructing COWZ, 48 census variables were selected for their ability to differentiate different types of workers and workplace including characteristics of workers such as employed or self-employed, hours worked and highest level of qualification, and their workplaces such as industry, as recorded in the 2011 Census. The workplace zone population includes workers that both live and work in the workplace zone and workers that in-commute from another location. Based on similar responses to a set of domains, workplace zones are categorised into a two-tiered hierarchical classification of seven Supergroups and 29 Groups.

The seven Supergroups are:

- Retail - Retail and wholesale areas ranging from traditional market squares to purpose-built shopping centres of national significance

- Top jobs - High status employment in business, industry and public service; primarily the highest status city centres but also top science and business parks

- Metro suburbs - Multicultural workforce engaged in range of service activities and self-employment, found exclusively in the suburban areas of major towns and cities

- Suburban services - Mix of local activities occurring primarily in suburban and residential areas

- Manufacturing and distribution - Generally low density, male workforce engaged in manufacturing, transport and distribution industries across a range of urban and extra-urban sites, widely spread across the country

- Rural - Primarily rural areas with a significant proportion of employment in agriculture, forestry and fishing as well as mining, quarrying and rural services

- Servants of society

A list of the 29 groups can be found in the Quality and methodology section while profiles for each of the Supergroups and Groups and further information on COWZ are available on the University of Southampton website.

How does this article differ from other approaches to rural urban data?

This article has been produced with the support of the Department for the Environment, Food and Rural Affairs (Defra) in order to provide some new insights into productivity differences between rural and urban areas. Defra currently publishes GVA per worker estimates for rural and urban areas in England (for the whole economy) using the local authority version of the rural urban classification (in which each local authority is assigned to the rural-urban classification). This differs from the experimental approach used in this release, which utilises the output area version of the rural-urban classification (in which each of the 181,408 output areas in England and Wales is assigned to the classification) to provide estimates for the business economy only. There are advantages and disadvantages to each approach. For example, using the local authority approach allows data to remain consistent with ONS regional accounts GVA data. However, using the output area approach allows for a more detailed analysis. This article is not intended to replace the existing method. Rather it aims to provide some additional complementary data to allow more detailed examination of rural and urban productivity issues.

### Notes for "Things you need to know about this release":

1. Approximate gross value added (aGVA) is a measure of the income generated by the surveyed businesses (and the industry or sector they represent) less their intermediate consumption of goods and services used up in order to produce their output.

2. The Inter-Departmental Business Register (IDBR) does not include the very smallest of businesses, such as sole proprietors and one-person bands (those who self assess). It should be borne in mind that the absence of some small firms from our data does have the potential to impact the productivity results in this article. This would be the case if small firms were to be disproportionately distributed between rural and urban areas.

3. A detailed definition of sparse and non-sparse areas. 2011 Rural-Urban Classification.

4 . Labour productivity and its sources in rural and urban areas

This section presents the estimates of the average labour productivity and the sources of productivity for the rural and urban areas using the Rural–Urban Classification of Output Areas (OAs) in Great Britain in 2014. Most of the results are expressed relative to the Great Britain average (Great Britain equals 100 index).

For England and Wales, we estimate that firms in rural areas accounted for 14% of the business economy in 2014. For Scotland, a different rural-urban classification is used and the results are not comparable to those of England and Wales. However, the Scottish classification shows Scotland's rural economy accounted for 22% of its overall business economy. The results in this article are presented jointly for England and Wales because they share the same rural and urban classification of OAs[1]. Scotland follows a separate classification of OAs into rural and urban categories[2], so its results are presented separately.

**Figure 1a: Rural and urban share of gross value added in the business economy [1] for England and Wales, 2014**

Legend: **Rural** | **Urban (Excl London)** | **London**

GVA share %
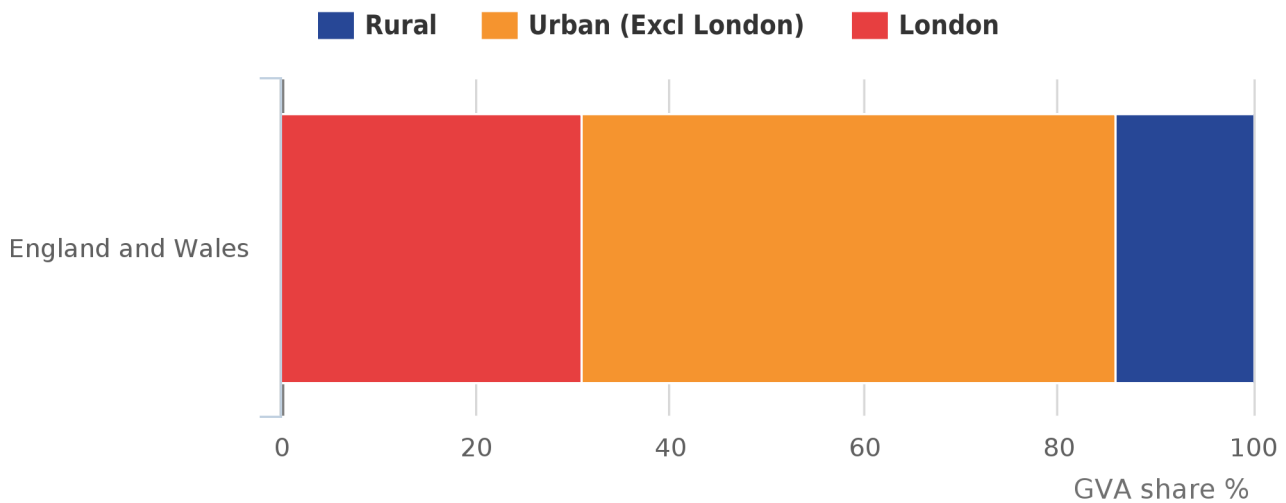
Source: Annual business Survey (ABS) 2014, Regional Accounts, Office for National Statistics

Notes:

1. Includes estimates for agriculture, forestry and fishing and financial services

Figure 1b: Rural and urban share of gross value added in the business economy [1] for Scotland, 2014
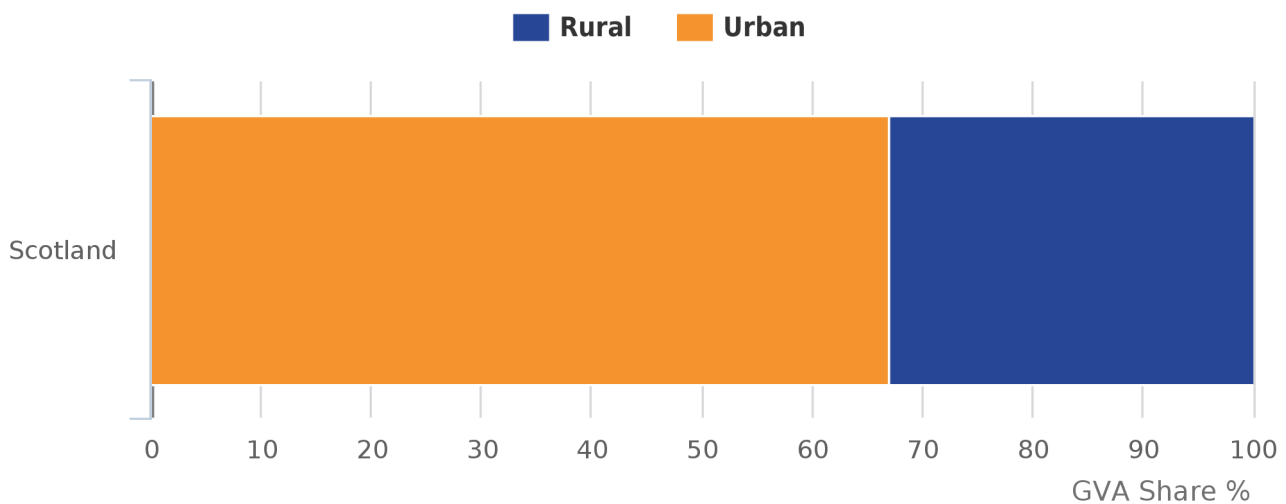
Legend: **Rural** | **Urban**

GVA Share %

Source: Source: Annual business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter Departmental Business Register (IDBR), UK Regional Accounts - Office for National Statistics

Notes:

1. Includes estimates for agriculture, forestry and fishing and financial services

London accounted for an estimated 31% of England and Wales total gross value added (GVA) in 2014. Other urban areas in England and Wales (excluding London) accounted for around 55% of the total business economy. This illustrates the effect the capital exerts on the figures when all urban areas including London are considered together. Thus, to avoid obscuring the results for urban areas that lack the characteristics of the capital, results for London are presented separately.

Table 1: Average gross value added per worker, 2014 (Great Britain=100)

Rural Urban Classification 2011 [3]	Non Financial Business Economy [1]	Business Economy [2]
EW-London	154	164
EW-Rural	88	81
EW-Urban (excluding London)	88	86
S-Rural	96	85
S-Urban	103	102

Source: Annual Business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR), Regional Accounts - Office for National Statistics

Notes:

1. Based on ABS industries

2. Includes estimates for agriculture, forestry and fishing and financial services industries

3. EW= England and Wales, S= Scotland

Table 1 estimates that GVA per worker in the business economy in urban areas (excluding London) in England and Wales in 2014 was 5 percentage points higher than productivity in rural areas. London, meanwhile, had significantly higher labour productivity than both urban (excluding London) and rural areas. These results are for all industries included in the Annual Business Survey (ABS) together with estimates included for the agriculture and financial sectors that are not included in ABS.

Results are also presented in Table 1 for the non-financial business economy. These are based just on the industries included within the ABS. Comparing the results with those for the business economy illustrates the importance of including estimates of agriculture and finance in the analysis of rural and urban areas. Without these two industries, the ABS data show no productivity difference between urban areas (excluding London) and rural areas. However, after adding in these industries, productivity is 5 percentage points higher in urban (excluding) London areas.

The addition of the two industries to the ABS also increases the productivity for London relative to the Great Britain average. This is due to the high importance the financial industry has in the capital. A large share of total production in the financial industry takes place in London, where the average productivity of this industry is also much higher than in the rest of Great Britain. By contrast, the lower productivity of the agriculture, forestry and fishing industry reduces the average productivity in rural areas. Because of the importance of these two industries in rural-urban analysis, the analysis in the remainder of this article is largely focused on the overall "business economy" results that include estimates for these two industries.

In Scotland, urban areas were around 7 percentage points more productive than rural areas when only the ABS industries are considered and 17 percentage points more for the business economy overall when agriculture and the financial industry are included.

Figure 2: Effect of adding agriculture, forestry and fishing, and financial services to average labour productivity of the non-financial business economy, Average GVA per worker, 2014 (GB =100)
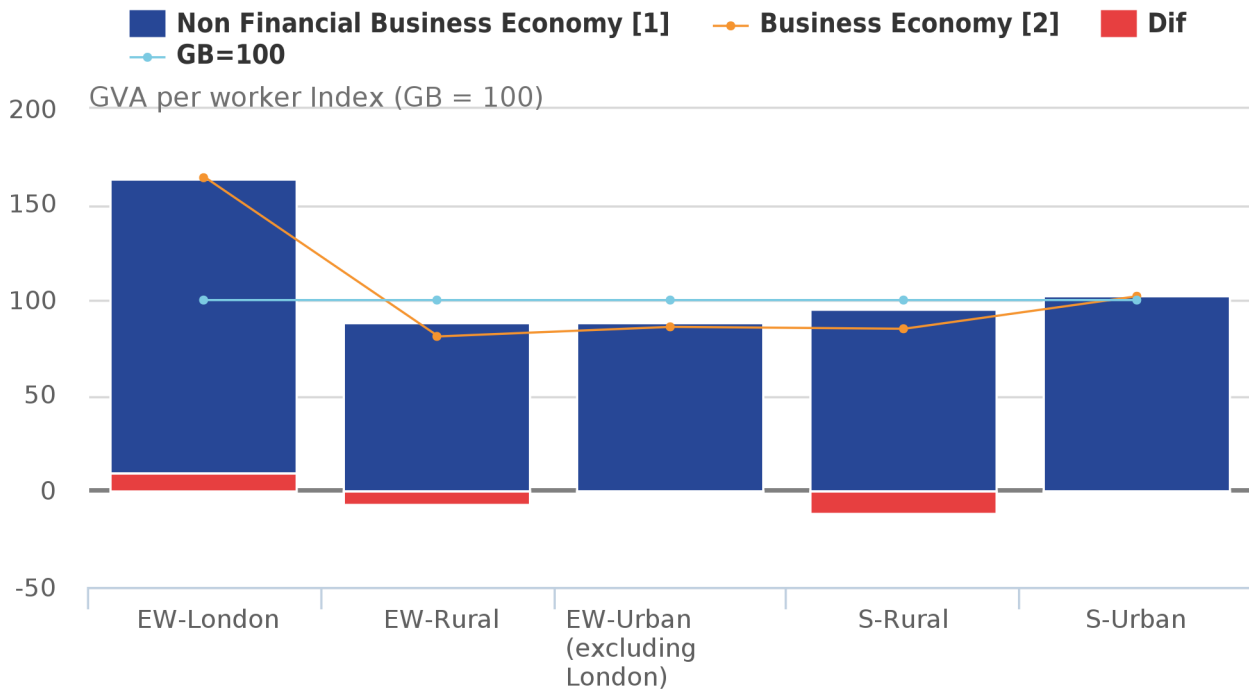
Source: Annual business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR), Regional Accounts - Office for National Statistics

Notes:

1. Based on ABS industries

2. Includes estimates for agriculture, forestry and fishing and financial services

3. EW= England and Wales, S= Scotland

Table 2 presents average labour productivity of the more detailed classification of rural and urban areas in England and Wales.

Table 2: Average gross value added per worker – detailed classification of rural and urban areas in England and Wales, 2014 (Great Britain=100)

Rural Urban Classification 2011	Non Financial Business Economy Index [1]	Business Economy Index [2]
London (U)	154	164
Major Conurbation (U)	87	87
Minor Conurbation (U)	74	73
City and Town Non-Sparse (U)	89	88
City and Town Sparse (U)	60	58
Town and Fringe Non-Sparse (R)	85	81
Town and Fringe Sparse (R)	59	57
Village Non-Sparse (R)	89	83
Village Sparse (R)	80	66
Hamlets & Isolated Dwellings Non-Sparse (R)	93	86
Hamlets & Isolated Dwellings Sparse (R)	75	55

Source: Annual Business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR), Regional Accounts - Office for National Statistics
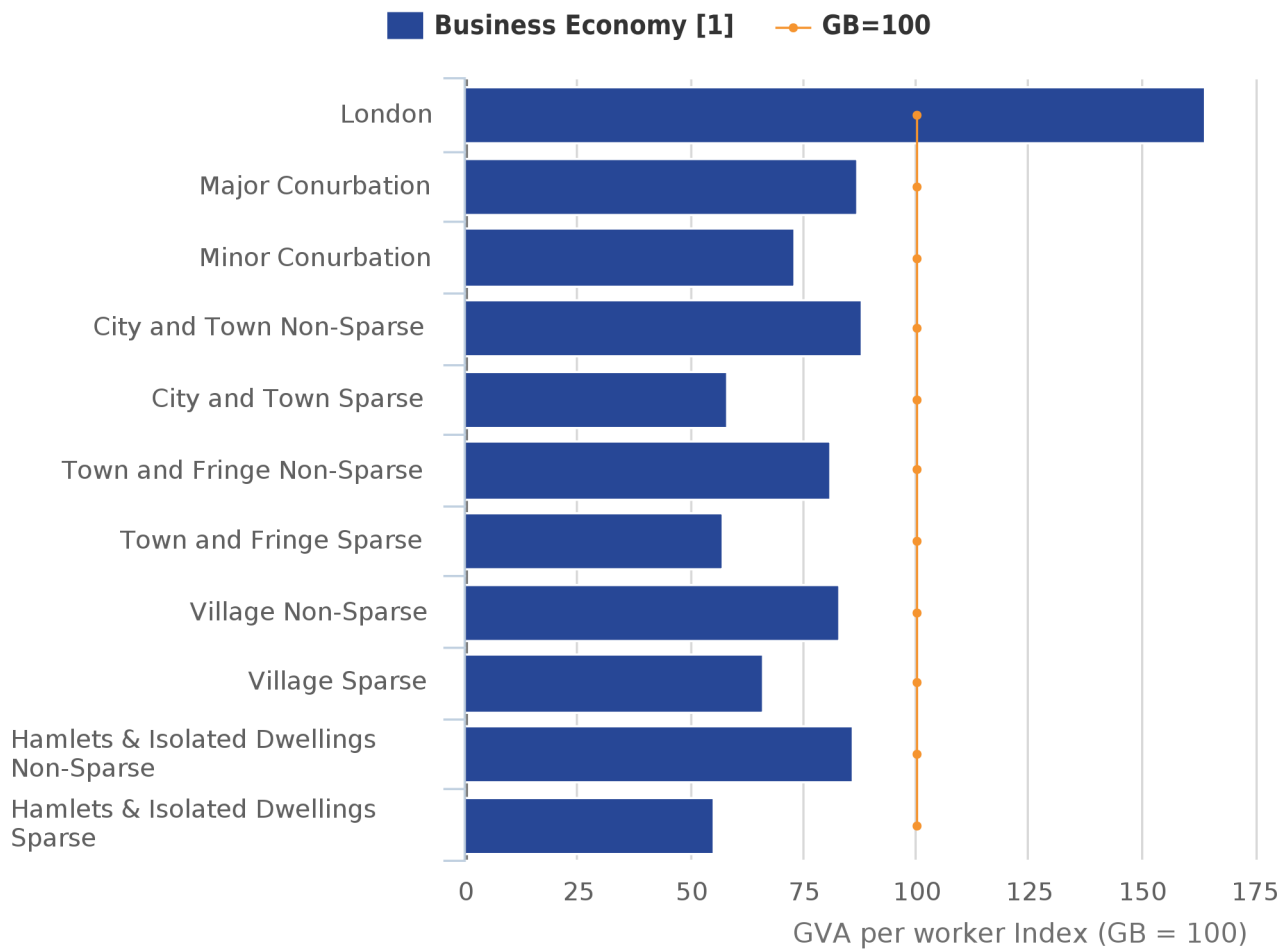
Notes:

1. Based on ABS industries

2. Includes estimates for agriculture, forestry and fishing and financial services industries

The more detailed classification of rural and urban areas shows that average GVA per worker was lowest in sparse areas. For the business economy the productivity difference between sparse and non-sparse locations (both rural and urban) ranged from 17 to 31 percentage points. Sparse areas are broadly those areas surrounded by areas of low population density (see the Things you need to know about this release section for more detail). The fact that most sparse settings are found in rural areas is an important reason why the total average productivity for rural areas is found to be lower when compared with the average of all urban areas (excluding London) as shown in Table 1.

Table 2 also illustrates that average labour productivity levels in non-sparse rural areas were very similar to urban areas (excluding London). In other words, on average in England and Wales overall there is not much difference in average labour productivity between urban areas and rural areas that are situated relatively close to a densely populated area.

Figure 3: Labour productivity (gross value added per worker) of the business economy by Rural Urban Classification, England and Wales, 2014 (GB=100)

Source: Annual business Survey (ABS) 2014, Business Register and Employment Survey (BRES), inter Departmental Business Register (IDBR), UK Regional Accounts - Office for National Statistics

Notes:

1. Includes estimates for agriculture, forestry and fishing and financial services

Table 3: Average gross value added per worker - detailed rural and urban areas in Scotland, 2014 (Great Britain=100)

Rural Urban Classification 2011	Non Financial Business Economy Index [1]	Business Economy Index [2]
Large Urban Areas (U)	110	111
Other Urban Areas (U)	90	86
Accessible Small Towns (U)	77	72
Remote Small Towns (U)	82	76
Very Remote Small Towns (R)	75	70
Accessible Rural (R)	113	99
Remote Rural (R)	101	82
Very Remote Rural (R)	79	67

Source: Annual Business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR), Regional Accounts - Office for National Statistics

Notes:

1. Based on ABS industries

2. Includes estimates for agriculture, forestry and fishing and financial services industries

Figure 4: Labour productivity (gross value added per worker) of the business economy by Rural Urban Classification, Scotland, 2014 (GB=100)
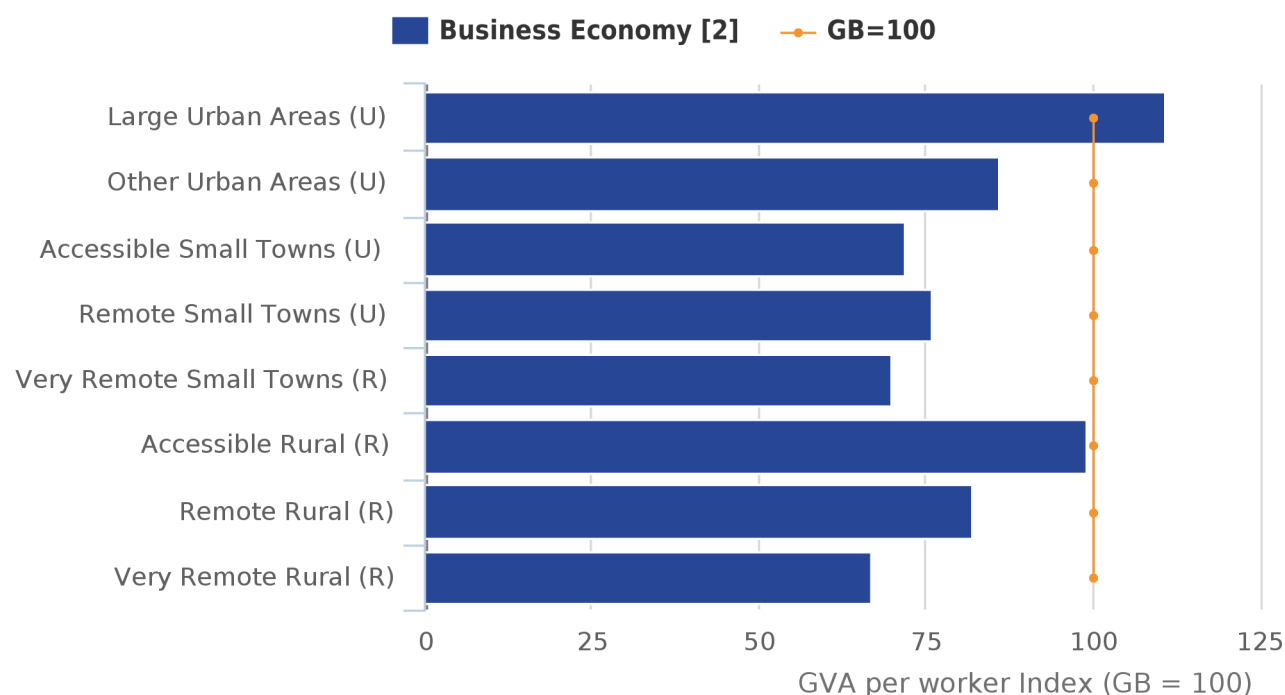
Source: Annual business Survey (ABS) 2014, Business Register and Employment Survey (BRES), inter Departmental Business Register (IDBR), UK Regional Accounts - Office for National Statistics

Notes:

1. Based on ABS industries

2. Includes estimates for agriculture, forestry and fishing and financial services

Similar to being in a sparse setting in the case of England and Wales, remoteness in Scotland drives productivity downwards in both rural and urban settings. The lowest levels of average GVA per worker were found in very remote rural areas and very remote small towns. Large urban areas and accessible rural areas were the best performing places in terms of GVA per worker in Scotland.

4.1 Rural and urban areas by regions

Table 4 shows that the relative economic performance of the urban or rural areas is not uniform across the country. When rural and urban areas are analysed separately by the Great Britain regions, urban areas are more productive than rural areas in Scotland and in the south of England. The productivity gap between rural and urban areas was around 17 percentage points in Scotland and 16 percentage points in the South East of England. In contrast, the productivity gap between rural and urban areas was not large in the north and the Midlands of England and in some cases such as the North West of England, rural areas outperformed urban areas in terms of average GVA per worker. Further information on the differences between the south of England and the north and Midlands of England is included in section 5 of this article.

Table 4: Average gross value added per worker of rural and urban areas by region for the business economy [1], 2014 (Great Britain=100)

Region	Rural Index	Urban Index	London Index
North East	78	82	-
North West	97	87	-
Yorkshire and Humber	74	75	-
East Midlands	82	79	-
West Midlands	86	82	-
East of England	84	88	-
London	-	-	164
South East	91	107	-
South West	68	81	-
Wales	63	68	-
Scotland	85	102	-

Source: Annual Business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR), Regional Accounts - Office for National Statistics

Notes:

1. Includes estimates for agriculture, forestry and fishing and financial services industries

4.2 Sources of variation in GVA per worker

Observed aggregate average productivity of an area can reflect both the productivity of the firms located in the area or the area's industry composition, as some areas may have a greater specialisation in economic activities with relatively high or low levels of productivity, which can enhance or reduce the area's overall productivity levels.

This section uses a decomposition technique to investigate these sources of productivity and how they relate to differences in aggregate productivity between different types of areas. The full technique is explained in the Quality and methodology section. In brief, the technique allows the decomposition of aggregate average labour productivity in each area type into a number of indices:

- a firm productivity index that shows the average level of productivity in an area assuming the industry composition within the area is the same as Great Britain, that is, how the productivity of firms in the area compare with other areas, taking into account the differences in productivity between industries

- an industry composition[3] index that shows the average level of productivity in an area assuming the productivity in each industry in the area is the same as Great Britain, that is, how an area may focus on a highly productive industry and therefore exhibit high productivity

- a residual covariance index that shows the link between industry shares and industry productivity; if an area has a high share of employment in industries, in which it has productivity advantages, it would have a positive residual covariance

Therefore, a higher value of the firm productivity index in a given location type shows that productivity of the firms (hence industries in general) in that area type are higher than firms in equivalent industries elsewhere. A higher value of industry composition index implies that the more productive industries in Great Britain have larger industry shares in those areas.

For information, the residual covariance term provides a link between industry shares and industry productivity in an area. As an example, if an area has a high share of industry employment relative to Great Britain in the industries to which it has productivity advantages then it would likely have a large positive residual covariance. In reality, the residual covariance column is relatively small in most area types. Table 5 shows the firm productivity and industry composition indices for rural-urban areas in England and Wales. Each cell in the table has been divided by the aggregate productivity level for Great Britain in 2014 to provide results on a Great Britain equals 100 basis.

Table 5: Sources of aggregate labour productivity (gross value added per worker) for the business economy [1] [2], 2014 (Great Britain=100)

Country	Rural Urban Classification 2011	Aggregate Average Labour Productivity Index	Firm Productivity Index	Industry Composition Index	Aggregate Average Labour Productivity, Great Britain Index	Residual Covariance Index
Scotland	Large Urban Areas (U)	111	97	117	100	-3
	Other Urban Areas (U)	86	81	100	100	5
	Accessible Small Towns (U)	72	79	85	100	8
	Remote Small Towns (U)	76	85	82	100	10
	Very Remote Small Towns (R)	70	69	91	100	10
	Accessible Rural (R)	99	95	98	100	6
	Remote Rural (R)	82	84	84	100	13
	Very Remote Rural (R)	67	68	86	100	13
England and Wales	London (U)	164	154	109	100	1
	Major Conurbation (U)	87	87	101	100	-1
	Minor Conurbation (U)	73	73	96	100	3
	City and Town Non-Sparse (U)	88	89	98	100	1
	City and Town Sparse (U)	58	70	82	100	6
	Town and Fringe Non-Sparse (R)	81	83	94	100	4
	Town and Fringe Sparse (R)	57	69	80	100	7
	Village Non-Sparse (R)	83	83	96	100	4
	Village Sparse (R)	66	72	81	100	13
	Hamlets & Isolated Dwellings Non-Sparse (R)	86	87	96	100	3
	Hamlets & Isolated Dwellings Sparse (R)	55	77	74	100	3

Source: Annual Business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR), Regional Accounts - Office for National Statistics

Notes:

1. Includes estimates for agriculture, forestry and fishing and financial services

2. Industry composition for each area is calculated as the employment share of 85 groups of 2-digit SIC industries in each area's total employment. For the agriculture, forestry and fishing and financial services industries employment shares are calculated at 1-digit SIC industry level.

The indices show that in England and Wales, aggregate average labour productivity is more closely related to individual firm productivities than to the industry composition, with London having the most productive firms in the country. The firm productivity index shows that the productivity of firms located in non-sparse urban areas is similar to the productivity of the firms located in non-sparse rural areas, while firms located in sparse locations have lower GVA per worker on the average compared with the firms in non-sparse areas. Meanwhile, the industry composition indices show that sparse areas also have an industry composition skewed towards relatively low productivity industries compared with the industry structure of the non-sparse areas. On the other hand, industry composition of London and major conurbations enhances their overall productivity levels.

Firm-level productivity was also important in explaining the differences in overall productivity levels across different types of areas in Scotland, however, overall productivity levels of the large urban and accessible rural areas are more closely related to their industry composition than the firm-level productivities. In Scotland, industry structure reduced the overall average productivity of the remote small towns and remote rural areas, while firms in very remote areas generated the lowest GVA per worker on the average.

Figure 5: Distribution of firm level productivity (GVA per worker) for the non-financial business economy, cities and towns and villages, England and Wales, 2014
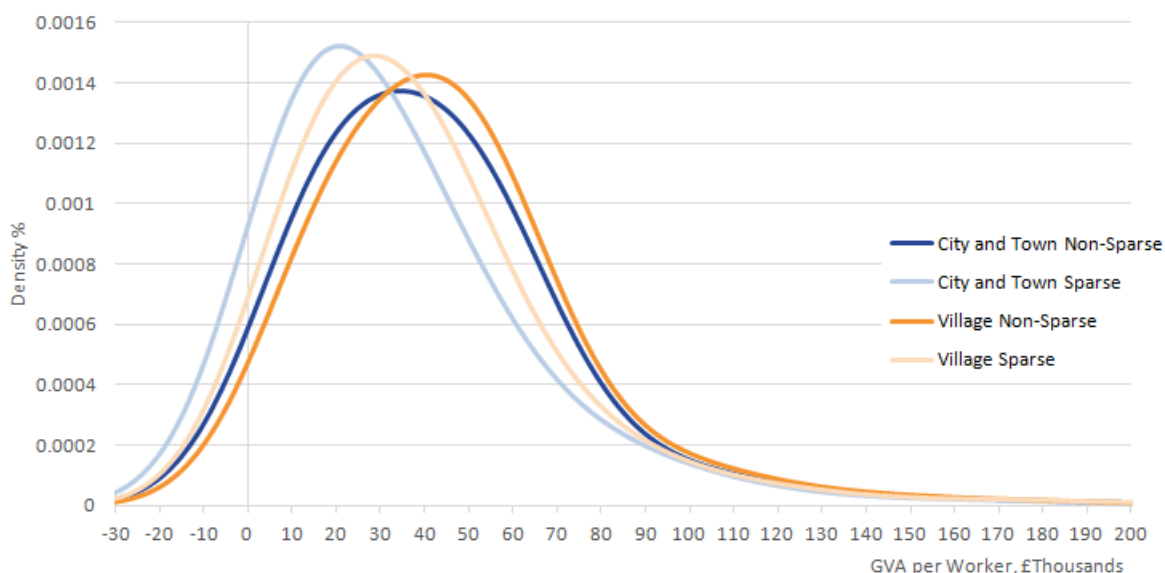

Figure 5 sheds more light on the firm-level productivity data by showing the proportion of firms at different levels of GVA per worker for the non-financial business economy[4] for the cities and towns, and villages in England and Wales. The distributions show that sparse areas, both rural and urban, have a higher share of firms with lower productivities compared with the non-sparse areas. This illustrates the importance (shown in Table 5) of firm-level productivity within industries explaining the overall productivity performance of an area. Also note that the distributions are skewed to the right, indicating that in all the area types there are fewer firms with high productivity levels than firms with lower productivity levels. Data and distributions for other area types are available in the accompanying dataset. The firms located in the right-hand tail of the distribution can be found in almost every industry, however, some industries such as mining and production, and professional, scientific and technical services, have a higher share of these firms.

4.3 Influence of industry on overall productivity levels

Decomposition analysis presented in Table 5 illustrated that in most cases firm-level productivity differences were more important that industry composition in explaining productivity differences across the rural-urban categorisation. However, industry structure was found to play a role in the relatively low levels of productivity in the sparse areas. This section provides some information on industry composition to identify the industries found in sparse areas of England and Wales.

Table 6 displays the location quotients (LQs) for the rural and urban areas in Great Britain. An LQ is computed as an industry's share of the employment[5] in that area type divided by the industry's share of the employment in Great Britain. It is an analytical statistic showing an area's industrial structure or specialisation (in terms of employment) relative to Great Britain as a whole. For example, an LQ of 1.0 in manufacturing means that the area and Great Britain are equally specialised in manufacturing; while an LQ of greater than 1 means that the area has a higher concentration of employment in manufacturing than Great Britain. It can be seen that the industry structure was dissimilar in different types of areas; for example, there is a high concentration of agriculture, forestry and fishing, and accommodation and food services industries in sparse (particularly rural) areas, while London and large urban areas have a relatively high employment in financial services and professional, scientific and technical activities industries.

Table 6: Rural Urban Classification, industry location quotients, 2014

Rural Urban Classification 2011		BDE	C	F	G	H	I	J	L	M	N	PQRS	A	K
England and Wales	London	0.4	0.3	0.7	0.8	1.0	1.0	1.9	1.2	1.6	1.2	1.0	0.0	2.0
	Major Conurbation	0.9	1.1	1.0	1.1	1.0	0.8	0.8	1.1	1.0	1.1	1.0	0.1	1.0
	Minor Conurbation	1.2	1.3	1.0	1.1	1.0	0.8	0.8	0.8	0.7	1.4	1.1	0.2	0.7
	City and Town Non-Sparse	0.9	1.1	0.9	1.1	1.0	0.9	0.9	1.0	0.9	1.0	1.0	0.4	0.9
	City and Town Sparse	0.6	1.1	0.7	1.4	1.2	1.9	0.3	0.9	0.4	0.3	1.2	1.6	0.4
	Town and Fringe Non-Sparse	0.9	1.3	1.4	1.0	0.9	1.2	0.8	1.0	0.9	0.7	1.0	1.9	0.3
	Town and Fringe Sparse	0.7	1.1	0.9	1.3	0.8	2.1	0.3	1.2	0.5	0.4	0.9	2.9	0.4
	Village Non-Sparse	1.6	1.3	1.4	0.7	1.1	1.4	0.7	0.9	0.9	0.8	0.9	3.9	0.3
	Village Sparse	0.7	1.8	1.3	0.5	0.8	2.1	0.2	0.5	0.4	0.3	0.7	10.4	0.0
	Hamlets & Isolated Dwellings Non-Sparse	1.4	1.3	1.4	0.7	1.3	1.2	0.6	0.9	0.8	0.8	1.0	4.5	0.3
	Hamlets & Isolated Dwellings Sparse	1.6	0.8	0.9	0.5	0.6	1.4	0.2	0.6	0.4	0.4	0.8	17.9	0.0
Scotland	Large Urban Areas (U)	3.0	0.7	1.0	0.9	0.9	1.0	0.8	0.8	1.0	1.2	1.1	0.1	1.7
	Other Urban Areas (U)	1.7	1.3	1.4	1.3	1.1	0.9	0.6	0.6	0.7	0.7	0.9	0.8	0.6
	Accessible Small Towns (U)	0.6	1.3	1.9	1.2	0.8	1.2	0.3	0.6	0.8	0.5	1.0	2.5	0.3
	Remote Small Towns (U)	0.3	1.1	1.2	1.3	0.9	1.3	0.4	0.5	0.8	0.4	1.1	3.5	0.3
	Very Remote Small Towns (R)	1.0	0.7	1.4	1.4	1.7	1.8	0.5	0.6	0.5	0.4	0.8	2.5	0.3
	Accessible Rural (R)	2.8	1.2	1.6	0.7	1.1	1.0	0.3	0.5	0.8	0.7	0.8	7.0	0.4
	Remote Rural (R)	2.0	1.1	1.3	0.6	0.7	1.7	0.2	0.8	0.5	0.4	0.7	12.3	0.1
	Very Remote Rural (R)	2.7	0.7	1.5	0.7	1.1	1.9	0.2	0.9	0.5	0.4	0.6	11.5	0.1

Source: Annual Business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR), Census 2011 - Office for National Statistics

Notes:

1. BDE refers to Mining & Utilities, C refers to Manufacturing, F refers to Construction, H refers to Transport & storage, I refers to Accommodation & food, J refers to Information & communication, L refers to Real estate, M refers to Professional, scientific & technical, N refers to Administrative & support, PQRS refers to Other, A refers to Agriculture, Forestry & Fishing and K refers to Financial and insurance activities.

To understand the impact of industry structure on the overall productivity levels observed in different area types, Figures 6a and 6b provide the levels of average GVA per worker for broad industry groups for selected sparse and non-sparse settings in England and Wales.

It can be seen that there are industry level differences in average GVA per worker. It is also evident the level of GVA per worker is different for similar industries across the different areas (reflecting the different firm-level productivities within the industries in different area types as seen in Table 5), however, the general pattern is that average GVA per worker is generally lower in the accommodation and food service industry, other services industry, and wholesale and retail trade industry than in most other industries. The mining and utilities industry, by contrast, has relatively high labour productivity due to its capital-intensive structure. The financial services, the information and communication, and the professional, scientific and technical activities industries also tend to have relatively high productivity across the different area types.

Average industry productivity and the location quotients show that the relatively low levels of productivity observed in sparse areas (particularly rural) is the result of both the relatively low firm-level productivity performance and a high concentration of low productivity industries in these types of areas. Note that rural areas also specialise in some relatively high-productivity production industries, however, the share of these industries in their overall economies is small.

Figure 6a: Gross value added per worker by industry in sparse and non-sparse cities and towns, England and Wales, 2014
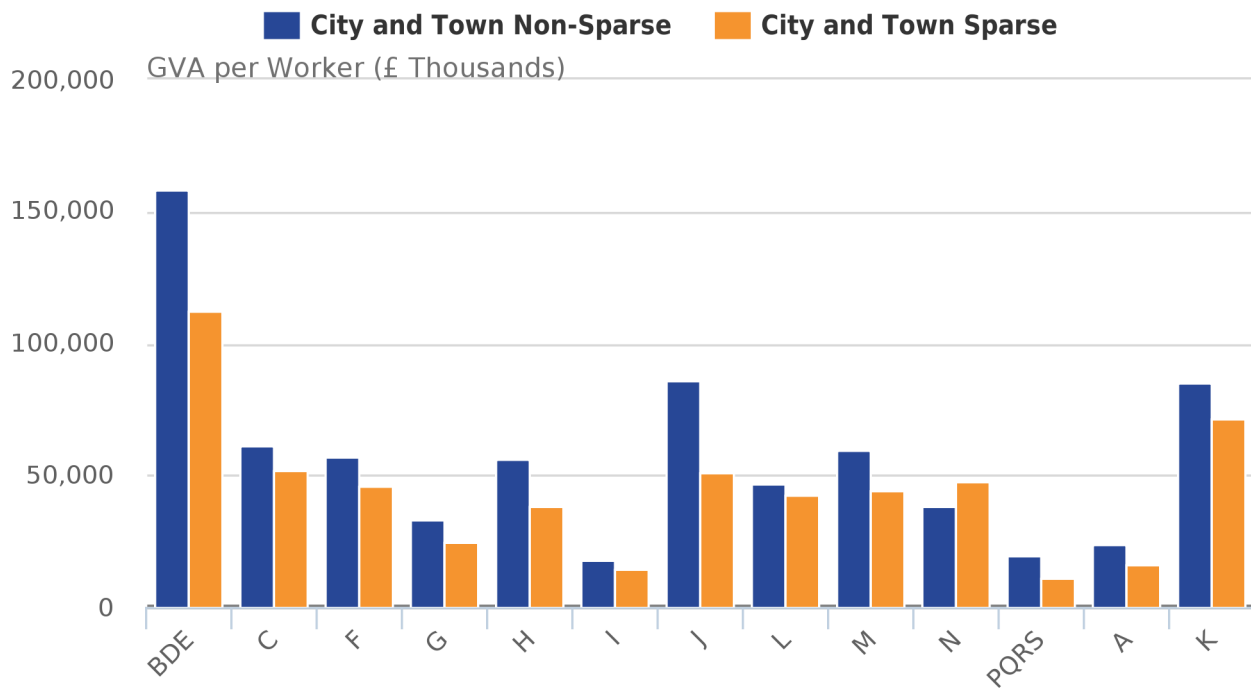
Source: Source: Annual business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR) - Office for National Statistics

Figure 6b: Gross value added per worker by industry in sparse and non-sparse villages, England and Wales, 2014
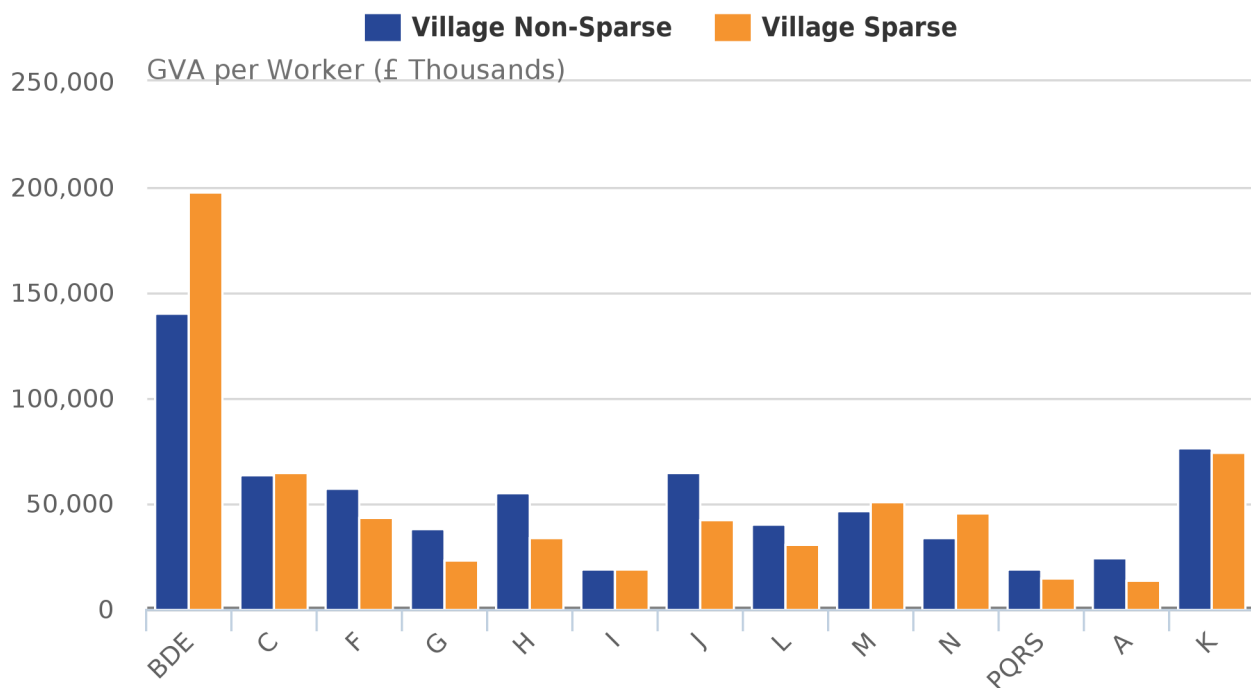
Source: Source: Annual business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR) - Office for National Statistics

Notes for "Labour productivity and its sources in rural and urban areas":

1. A [description of the 2011 Rural–Urban Classification of Output Areas](#) used in this article can be found in the annex section at the end of this article and on the ONS webpage.

2. A description of the [Scottish government 8-fold Urban Rural classification of Output Areas](#) can be found in the annex section of this article and can be accessed from the Scottish government website.

3. There are two widely accepted methods of defining industry composition. These are either using output such as shares of gross value added or inputs such as the shares of employment of each industry. The focus of this article is on labour productivity in industry. Defining the industry structure in terms of the inputs such as employment, therefore, appears to be more appropriate than using the output definition. Industry composition for each area is calculated as the employment share of 85 groups of 2-digit SIC industries in each area's total employment for which data was available in ABS and BRES. Employment shares for agriculture, forestry and fishing, and finance services are calculated at the broad industry level (1-digit sic).

4. Firm level data is only available for the ABS data.

5. Industry structure could also be shown as the share of gross value added.

5 . Built-up areas

There is a large theoretical and empirical international literature on agglomeration economies demonstrating that the size (or the population density) of a city is one of the determinants of overall productivity levels. In the urban context[1] it is assumed that firms from a range of industries benefit from the concentration of shared resources such as physical infrastructure, skilled labour and knowledge spill-overs. This section explores whether there is a relationship between the size or population density of the urban areas and their overall productivity levels in England and Wales.

To do that we aggregated the firm-level data to built-up areas classification (Table 7). As in section 2 we also added estimates for the agriculture, fishing and forestry, and financial services industries to the firm-level data from the Annual Business Survey and Business Register and Employment Survey. The results presented in this section include all the industries. Note that minor and non-built-up areas are only found in the rural areas.

Table 7: Average gross value added per worker of built-up areas (BUA) classified by population size for the business economy [1] in England and Wales, 2014 (England and Wales=100) [2]

BUA type	Population size	Business Economy
Non-built-up	N/A	88
Minor	<10,000	77
Small	10,000 - 99,999	79
Medium	100,000 - 499,999	88
Large	500,000 - 999,999	84
Major	1,000,000+ (excl. London)	84
Greater London [3]	8,500,000	152

Source: Annual Business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR), Regional Accounts - Office for National Statistics

Notes:

1. Includes estimates for agriculture, forestry and fishing and financial services industries

2. EW= England and Wales

3. Greater London is defined differently for this classification

Table 7 shows that with the exception of London, there is no evidence that large urban areas have a productivity advantage; in 2014, major and large built-up areas had similar levels of average gross value added (GVA) per worker. The table also shows GVA per worker was higher in the medium-sized built-up areas than in the larger areas. Therefore, with the exception of London, there is no clear relationship between urban density and urban productivity performance in England and Wales.

Consistent with the findings in section 2, minor built-up areas in rural areas have lower GVA per worker than any other built-up areas in urban settings, however, non-built up areas in rural settings have a similar level of average GVA per worker to medium built-up areas.

Table 8 provides the same data split for the north of England and Midlands versus south of England. This is to check whether the results in Table 7 could be the result of a north-south divide given that most of the large and major cities are located in the north and Midlands, which typically have lower productivity levels than the south of England[2].

Table 8 shows that in the north of England, average GVA per worker was broadly similar across all sizes of urban areas. In contrast, there appears to be a relationship between the size of the urban area and labour productivity in the south. Large and medium urban areas located in the south have a clear productivity advantage over smaller urban areas.

These results therefore show that the productivity advantage of the south of England (excluding London) compared with the north and Midlands of England is arising largely from higher productivity in the south of England's medium and large urban areas. For small urban areas and rural areas the productivity differences between the south and north or Midlands are much smaller.

Note that agglomeration economies are only one of many drivers of productivity so these aggregated results do not mean that agglomeration economies do not exist in the north or Midlands. However, the results do suggest any potential productivity benefits of urban size in the north and Midlands is being offset by other negative influences on average labour productivity in these areas.

Table 8: Average gross value added per worker of urban built-up areas classified by population size for the business economy [1] in north and south of England, 2014 (England and Wales=100)

Region	Small	Medium	Large	Major
North and Midlands	79	81	77	81
South (excluding London)	84	98	101	na

Source: Annual Business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR), Regional Accounts - Office for National Statistics

Notes:

1. Includes estimates for agriculture, forestry and fishing and financial services industries

Notes for "Built-up areas":

1. Firms within the same industry can also benefit when they locate near one another in cities or industrial cluster. They can benefit from knowledge spill-overs, specialised labour, shared R&D and easy access to supply chains.

2. For details see regional and sub-regional productivity in the UK: Jan 2017 publication.

6 . Classification of Workplace Zones

So far, the article has focused on geography classifications based on residential population. This section examines labour productivity based on a workplace geography classification. To do this we aggregated microdata to the Classification of Workplace Zones (COWZ), which is a geo-demographic classification based on the characteristics of workers such as employed or self-employed, hours worked and highest level of qualification, and their workplaces such as industry, as recorded in the 2011 Census. The workplace zone population includes workers that both live and work in the workplace zone and workers that in-commute from another location. Based on similar responses to a set of domains, workplace zones are categorised into a two-tiered hierarchical classification of seven Supergroups and 29 Groups (see Things you need to know section for more detail of the Supergroups)[1].

Figure 7: Average gross value added per worker for the classification of Workplace Zones classified into Classification of Work Place Zones (Super groups) for the business economy [1], England and Wales (EW), 2014 (EW=100)
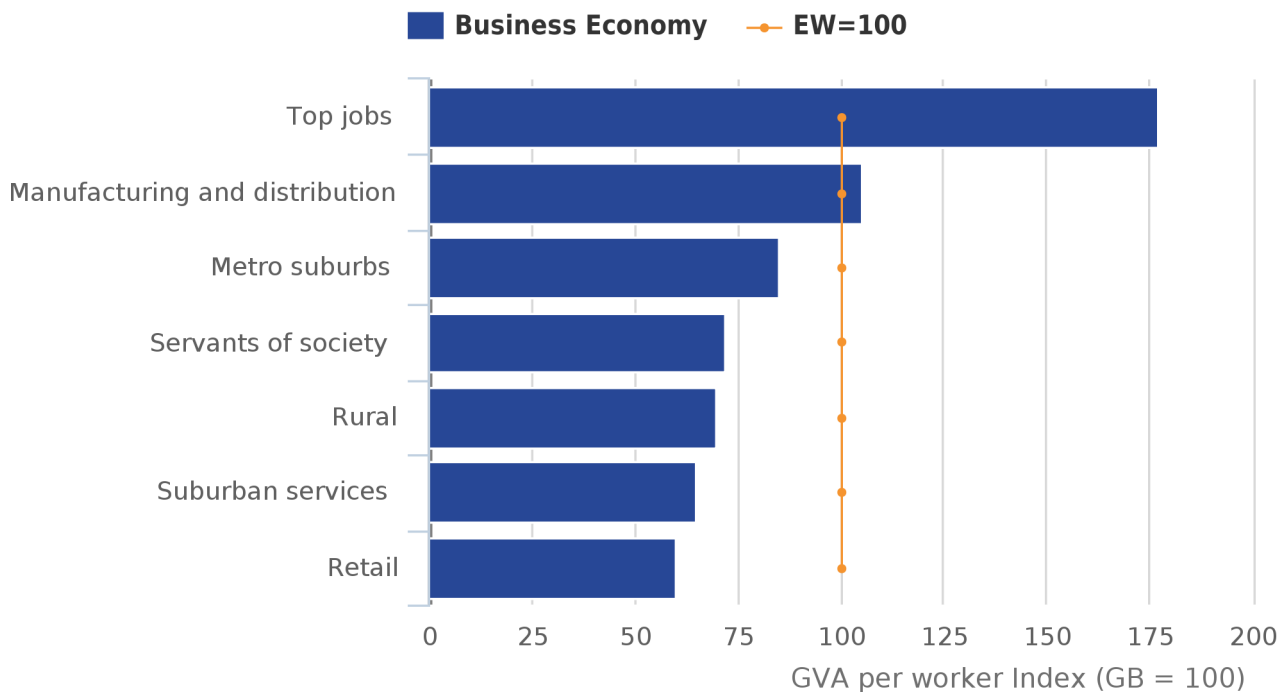
Source: Annual business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Iter Departmental Business Register (IDBR), UK Regional Accounts - Office for National Statistics

Notes:

1. Includes estimates for agriculture, forestry and fishing and financial services.

Table 9: Average gross value added per worker for the business economy [1] - Classification of Workplace Zones Supergroups by rural and urban areas, England and Wales, 2014 (England and Wales=100)

Classification of Workplace Zones	London	Rural	Urban (excluding London)
Retail	78	57	60
Top Jobs	208	161	140
Metro Suburbs	98	64	74
Suburban Services	112	69	65
Manufacturing and Distribution	139	117	103
Rural	88	70	72
Servants of Society	67	82	73

Source: Annual business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR), Regional Accounts - Office for National Statistics

Notes:

1. Includes estimates for agriculture, forestry and fishing and financial services industries

Table 10: Employment share for the business economy [1] - Classification of Workplace Zones Supergroups by rural and urban areas in England and Wales, 2014

Classification of Workplace Zones	London	Rural	Urban
Retail	1.0	1.0	11.0
Top Jobs	11.0	0.4	8.0
Metro Suburbs	6.0	0.2	5.0
Suburban Services	0.1	1.0	10.0
Manufacturing and Distribution	1.0	3.0	17.0
Rural	0.0	11.0	4.0
Servants of Society	0.1	1.0	8.0

Source: Annual business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR), Regional Accounts - Office for National Statistics

Notes:

1. Includes estimates for agriculture, forestry and fishing and financial services industries

Figure 7 displays the gross value added (GVA) per worker relative to the England and Wales average for the Supergroups. Table 9 displays the same information separately by broad rural and urban categories whilst the proportion of the workforce employed in each type of workplace zone is displayed in Table 10.

Figure 7 and Table 9 show that workplaces classified into the Top jobs Supergroup category generate the highest GVA per worker in England and Wales in both rural and urban settings. These are jobs for a highly qualified workforce, usually found in city centres and other commuting areas such as science parks. Table 10 shows that 11% of the workers in England and Wales (close to 60% of London workers) are found in firms located in London's "Top jobs" zones. Main activities for this Supergroup include ICT, Finance, Professional, scientific and technical, and Managerial positions.

Table 11 displays the highest ranking classification of workplace zones Groups. It can be seen that all the Groups in the "Top jobs" category have higher productivity than the national average, with the "Global business" Group generating 2.7 times more GVA per worker than the England and Wales average, followed by the "Science and business parks" Group, with an average GVA per worker around 77% higher than the England and Wales average. Data for all the Groups are available in the accompanying dataset.

Table 11: Average gross value added per worker for the business economy [1] - Classification of Workplace Zones - highest ranking Groups, 2014 (EW=100) [2]

Supergroup	Group	Index (EW=100) [2]
Top jobs	Global business	273
Top jobs	Science and business parks	177
Top jobs	Regional business centres	142
Top jobs	Big city life	120
Manufacturing and Distribution	Business parks	116
Manufacturing and Distribution	Mining and quarrying facilities	111
Top jobs	Administrative centres	109
Manufacturing and Distribution	Manufacturing, energy and utilities	102
Manufacturing and Distribution	Industrial units	102

Source: Annual business Survey (ABS) 2014, Business Register and Employment Survey (BRES), Inter-Departmental Business Register (IDBR), Regional Accounts - Office for National Statistics

Notes:

1. Includes agriculture, forestry and fishing and financial services industries

2. EW= England and Wales

"Manufacturing and distribution" is the second Supergroup with the highest labour productivity. All its groups also have above average GVA per worker, with "Business parks" being the most productive of all. These business parks are scattered across the country, but usually clustered in, or near to, urban areas and generally close to major transportation corridors (that is, in non-sparse rural and urban areas). Firms located in these Supergroup zones performed better in terms of GVA per worker in the rural areas than their counterparts in urban areas (excluding London) in 2014.

GVA per worker was lower than the national average for most of the other groups. Among these groups, the "Retail" Supergroup generally has the lowest GVA per worker in England and Wales. With the exception of London, the performance of the firms located in rural and urban areas in terms of GVA per worker was mixed. Overall, the use of the Classification of Workplace Zones allows a different type of analysis to be carried out than is possible with standard geographies or existing residence-based classifications. It therefore provides new insights. For example, the evidence on (high) levels of productivity in business park locations is a result not previously available from other types of analysis.

Notes for "Classification of Workplace Zones":

1. Further information and downloadable files on the Classification or Workplace Zones for England and Wales (COWZ – EW) can be accessed from the University of Southampton website.

7 . Quality and methodology

7.1 Estimating productivity for the non-financial business economy

The calculations in this section make use of a tailored micro-dataset constructed from local unit universe data files from the Annual Business Survey (ABS)[1] and the Business Register and Employment Survey (BRES)[2]. ABS includes all the local units[2] of the firms and their plants registered in the Inter-Departmental Business Register (IDBR)[3], the postcode of their location and the approximate gross value added (aGVA) (see footnote 2 in section 1) they have produced over a period of 12 months[4]. Employment data are not collected by the ABS, however, by using the unique identifier allocated to each plant, the ABS dataset can be matched to a BRES dataset containing employment for local units (LUs).

ABS and BRES are two different surveys with different sample design, reporting periods, coverage and post-processing of the responses. Also, their sample frames are created from snapshots of the IDBR in different points in time, which means the business population may have changed in the meantime. Therefore, there is not a perfect match between the two surveys. BRES estimates employment for those LUs that have not been surveyed in a particular year. However, the methodology in this article uses employment from IDBR when there is no response from BRES.

This is because BRES is the preferred data source for employment micro-data. It provides the most accurate and up-to-date employment information for businesses. However, employment data from IDBR is the second-best source if actual rather than estimated data is pursued.

Employment in IDBR is obtained from BRES if the business has been recently surveyed. For those not surveyed by BRES, but selected by the Short-Term Employment Surveys (STES), the returns to these are used to update employment. For the rest of businesses, IDBR takes employment figures from HM Revenue and Customs (HMRC) administrative data on businesses registered for PAYE. As last resource, employment is imputed from VAT receipts, based on the turnover per head ratios.

Once the employment variable has been selected, the LU postcode is used to match the Local Unit to rural and urban classifications of the output areas (OAs).

Using data from ABS has the disadvantage that the survey excludes the agricultural and financial sectors as well as some small firms, the self-employed and the public sector; as such the ABS results represent approximately two-thirds of the UK economy in terms of gross value added.

7.2 Adding agriculture, forestry and fishing, and financial services to the ABS estimates

There is no micro-data readily available for gross value added (GVA) produced by the agricultural and the financial industries that could easily be added to the estimates from the ABS.

For the financial services industry, we used NUTS 3 level GVA[5] for the financial services from the published regional accounts. Employment estimates at the small geographies were obtained from BRES. Employment estimates are then used to allocate NUTS 3 GVA total to smaller geographies. Therefore, the labour productivity is assumed constant across the rural and urban areas in each NUTS 3 subregion.

BRES only provides employment data for the agriculture, fishing and forestry industry at the NUTS 1 geography. To be able to estimate productivity for small geographies, we first obtained employment data from Census 2011 estimates at the OA level and then used these to allocate the published total NUTS 1 employment in this industry[6] to small geographies. The employment estimates at the OA level are then used to allocate NUTS 1 GVA for the agriculture, forestry and fishing industry to smaller geographies. Therefore, the labour productivity is assumed to be the same for rural and urban areas within each region in Great Britain.

This approach relies on some important assumptions and therefore results must be considered experimental estimates. However, the fact that adding in agriculture and the financial industries has a significant effect on the estimates suggests results from the ABS only do not show the full picture of differences in productivity between rural and urban areas.

7.3 Sources of variation in GVA per worker (Decomposition Index)

The decomposition analysis technique is based on Olley and Pakes (1996) [7]. Industries used in this decomposition index are at a 2-digit level for the Standard Industrial Classification 2007.

Formula 1 shows the calculation of Area GVA terms whilst formula 2 shows the calculation used to create the Productivity Decomposition Index.

Formula 1: Area GVA terms

Aggregate Average Labour Productivity = Firm Productivity Index + Industry Composition Index - Aggregate Average Labour Productivity, Great Britain + Residual Covariance

$$\sum_a q_a^i \lambda_a^i = \sum_a q_a^i \overline{\lambda}^i + \sum_a \overline{q}^i \lambda_a^i - \sum_a \overline{q}^i \overline{\lambda}^i + \sum_a \left(q_r^i - \overline{q}^i \right) \left(\lambda_a^i - \overline{\lambda}^i \right)$$

Formula 2: Productivity Decomposition Index

$$100 \frac{\sum_a q_a^i \lambda_a^i}{\sum_a \overline{q}^i \overline{\lambda}^i} = 100 \frac{\sum_a q_a^i \overline{\lambda}^i + \sum_a \overline{q}^i \lambda_a^i - \sum_a \overline{q}^i \overline{\lambda}^i + \sum_a \left(q_a^i - \overline{q}^i \right) \left(\lambda_a^i - \overline{\lambda}^i \right)}{\sum_a \overline{q}^i \overline{\lambda}^i}$$

Where:

$$q_a^i \quad \frac{AreaIndustryGVA}{AreaIndustryEmployment}$$

$$\lambda_a^i \, AreaIndustryEmployment$$

$$\overline{q}^i \quad \frac{NationalIndustryGVA}{NationalIndustryEmployment}$$

$$\overline{\lambda}^i \, TotalAreaEmployment \times \frac{GBIndustryEmployment}{GBEmployment}$$

Summary of terms:

The actual productivity of the area
$$\sum_a q_a^i \lambda_a^i$$

The productivity of the area if it had the same employment share in each industry as the nation
$$\sum_a q_a^i \overline{\lambda}^i$$

The productivity of the area if the industries had the same productivity as the industry nationwide
$$\sum_a \overline{q}^i \lambda_a^i$$

The productivity of Great Britain, that is, the productivity of the area if the industries had the same productivity as the industry nationwide and if it had the same employment share in each industry area as the nation

$$\sum_a \bar{q}^i \bar{\lambda}^i$$

Residual covariance between industry productivities and industry shares in the area

$$\sum_a \left(q_a^i - \bar{q}^i \right) \left(\lambda_a^i - \bar{\lambda}^i \right)$$

7.4 Geographical classifications

Details of the geographical classifications used in this article are provided in the "Things you need to know about this release" section together with links to documents providing greater detail.

For information, Table 12 shows the Groups that make up the Classification of Workplace Zones.

Table 12: Classification of Workplace Zones – England and Wales Supergroups and Groups (COWZ-EW)

Supergroup	Supergroup name	Group	Group name
1	Retail	1a	Low density retail and wholesale
		1b	Market squares
		1c	Multicultural urban high streets
		1d	Traditional high streets
		1e	Shop until you drop
		1f	Eat, drink, shop and be merry
2	Top jobs	2a	Global business
		2b	Administrative centres
		2c	Big city life
		2d	Regional business centres
		2e	Science and business parks
3	Metro suburbs	3a	Metro suburban distribution
		3b	Cosmopolitan metro suburban mix
		3c	Independent professional metro services
		3d	Suburban metro infrastructure
4	Suburban services	4a	Non-metropolitan suburban areas
		4b	Primarily residential suburbs
5	Manufacturing and distribution	5a	Mining and quarrying facilities
		5b	Industrial units
		5c	Business parks
		5d	Manufacturing, energy and utilities
6	Rural	6a	Rural with core services
		6b	Rural with non-local workers
		6c	Rural with mining or quarrying
		6d	Traditional countryside
7	Servants of society	7a	Large scale education
		7b	Public administration
		7c	Major hospitals
		7d	Highly qualified workforces and professional services

Source: Office for National Statistics

7.5 Industry classifications

Table 13 shows a list of Standard Industrial Classification 2007 industry sectors used in some of the tables and the figures in this article.

In some instances, industries have been merged due to industry similarity and disclosiveness.

Industries B, D and E merge into BDE (mining and utilities). Industries P, Q, R and S merge into PQRS (other activities).

Table 13: 1 digit Standard Industrial Classification 2007 industry classification

Code	Industry description
A	Agriculture, forestry and fishing * estimates
B	Mining and quarrying
C	Manufacturing
D	Electricity, gas, steam and air conditioning
E	Water supply, sewerage, waste management and remediation activities
F	Construction
G	Wholesale and retail trade; repair of motor vehicles and motorcycles
H	Transport and storage
I	Accommodation and food service activities
J	Information and communication
K	Financial and insurance activities * estimates
L	Real estate activities
M	Professional, scientific and technical activities
N	Administrative and support service activities
P	Education
Q	Human health and social work activities * Public Provision Excluded
R	Arts, entertainment and recreation
S	Other service activities

Source: Office for National Statistics

7.6 Quality and Methodology Information

The Annual Business Survey and the Business Register and Employment Survey Quality and Methodology Information documents contain important information on:

- the strengths and limitations of the data

- the quality of the output: including the accuracy of the data and how it compares with related data

- uses and users

- how the output was created

Notes for "Quality and methodology":

1. For more information on ABS Quality and Methods including a technical report visit the ONS archives.

2. For more information on BRES visit the ONS website.

3. For more information on the IDBR visit our website.

4. ABS allows firms to report data for different 12-month periods. Most of them report for the calendar year. However, some firms report for the financial year and a few for other 12-month period.

5. Total GVA is obtained from published ONS figures.

6. Total employment for the agriculture, forestry and fishing industry is obtained from published ONS figures.

7. Olley, G. S. and Pakes, A., 1996, The Dynamics of Productivity in the Telecommunications Equipment Industry, Econometrica, 64(6), 1263-1297.

8 . Links to related statistics

5 April 2017: UK productivity introduction: Oct to Dec 2016 draws together the headlines of the productivity releases into a single release, providing additional analysis of our productivity statistics.

5 April 2017: Labour productivity: Oct to Dec 2016 contains the latest estimates of labour productivity for the whole economy and a range of industries, together with estimates of unit labour costs.

5 April 2017: International comparisons of UK productivity (ICP), final estimates: 2015 presents an international comparison of labour productivity across the G7 nations, in terms of growth in GDP per hour and GDP per worker.

5 April 2017: Multi-factor productivity estimates: Experimental estimates to 2015 decomposes output growth into the contributions that can be accounted for by labour and capital inputs. The contribution of labour is further decomposed into quantity (hours worked) and quality dimensions.

5 April 2017: Labour productivity measures from the Annual Business Survey, 2006 to 2015 presents an analysis of detailed productivity trends and distributions among businesses in the UK from 2006 to 2015, using firm-level data from the Annual Business Survey (ABS).

5 April 2017: Quarterly public service productivity (experimental statistics): Oct to Dec 2016 presents experimental estimates for quarterly UK total public service productivity, inputs and output to provide a short-term, timely indicator of the future path of the annual productivity estimates.

5 April 2017: Introducing quarterly regional labour input metrics provides a first look at the new experimental quarterly regional labour input metrics. Hours and jobs for the NUTS1 regions.

5 April 2017: [Exploring labour productivity in rural and urban areas in Great Britain](#) investigates differences in rural and urban labour productivity in Great Britain using firm-level microdata analysis of the business economy.

5 April 2017: [An initial assessment of regional management practices](#) presents analysis of a small sample of single-site British manufacturing businesses from the Management Practice Survey pilot, and finds no evidence of regional variation in management practices.

6 January 2017: [Regional and sub-regional productivity in the UK: Jan 2017](#) provides statistics for several measures of labour productivity. Statistics are provided for the NUTS1, NUTS2 and NUTS3 subregions of the UK, and for selected UK city regions.

6 January 2017: [Regional firm-level productivity analysis for the non-financial business economy: Jan 2017](#) provides experimental analysis on the sources of regional differences in labour productivity in the non-financial business economy in Great Britain.

6 January 2017: [Volume index of UK capital services (experimental): estimates to 2015](#) provide estimates of the contribution of the capital stock to production in the economy, split by asset and industry.

6 January 2017: [Management practices and productivity for manufacturing businesses in Great Britain: experimental estimates for 2015](#) is a secondary paper analysing the relationship between management practices and productivity, following the release of initial results in October.

6 January 2017: [Public service productivity estimates: total public service, UK: 2014](#) presents updated measures of output, inputs and productivity for public services in the UK between 1997 and 2013, in addition to new estimates for 2014. Includes service area breakdown, as well as impact of quality adjustment and latest revisions.

6 January 2017: [Public service productivity estimates: healthcare, 2014](#) presents updated estimates of output, inputs and productivity for public service healthcare in the UK between 1995 and 2013, and new estimates for 2014.

6 October 2016: [Quality adjusted labour input: UK estimates to 2015](#) includes estimates of changes in the number of hours supplied in the UK economy adjusted for changes in the quality of the labour supply.

6 October 2016: [Measuring output in the Information Communication and Telecommunications industries: 2016](#) presents initial findings from a review of data sources and methods used in estimating output of the information communication and telecommunications industries, with a focus on the telecommunications industry.