Office for National Statistics

Statistical bulletin

Regional labour productivity, including industry by region, UK: 2019

Regional output per hour and output per job, and an experimental analysis of the performance of output per hour levels and growth by industry and region.

Contact:
Stuart Mackenzie
productivity@ons.gov.uk
+44 (0)1633 455086

Release date:
7 July 2021

Next release:
To be announced

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1 . Main points

- The levels of labour productivity (output per hour worked) for London and the South East were substantially above the median region in 2019, while most regions were much closer to the median; output per job follows a similar pattern.

- Productivity grew in half of the 12 International Territorial Level (ITL1) regions of the UK in 2019, with Wales growing fastest, by more than 2%; in contrast, Northern Ireland productivity fell the most, by nearly 3%.

- In 2019, London positively contributed 0.3 percentage points to overall growth in UK output per hour, more than any other region; whereas the South East negatively contributed to overall UK productivity by 0.3 percentage points.

2 . Productivity levels across regions

Labour productivity is calculated by dividing output (gross value added, GVA) by a measure of labour input (total hours worked or jobs). National productivity statistics published in our regular productivity bulletins do not provide information about the productivity levels of the different geographical regions of the UK. We do this by splitting the UK into the 12 International Territorial Level (ITL1) regions. Later this year an accompanying article will examine productivity at lower geographical levels.

This analysis uses national price deflators, so it may fail to take account of differences in the level of prices in the different regions and countries of the UK.

Our main measure of productivity is output per hour worked, and this article is based on output for 2019, the most recent annual estimates of economic activity by UK country, region and local area.

Figure 1 shows relative levels of output per hour for each UK region in 2019. London had the highest productivity of any UK region, with output per hour nearly 50% higher than the median region. Output per hour levels for the South East, Scotland and the East of England were also above the median. Northern Ireland had the lowest level of output per hour in the UK, and other regions clustered close to the median level.

Figure 1: Productivity varied widely across UK regions, and was highest in London

Output per hour by International Territorial Level region relative to the median region, 2019

Notes:

1. The baseline in the figure is the median productivity level of all the regions.

Download this chart

Output per job is an alternative measure of labour productivity and can produce different results if average hour worked per job vary across regions. Figure 2 shows the levels of output per job observed in each region compared with the median across regions. Similar to output per hour worked in Figure 1, London has levels of output per job well above the UK average. The other regions follow a similar pattern in this measure as they do in output per hour worked.

When regions are ranked by output per job instead of output per hour, Northern Ireland rose three places, suggesting that on average, workers in Northern Ireland worked longer hours for each job compared with the UK average (see section 4).

Figure 2: London and the South East observed levels of output per job that were more than 20% above the median region in 2019

Output per job by International Territorial Level region relative to the median region, 2019

Notes:

1. The baseline in the figure is the median productivity level of all the regions.

Download this chart

3 . Productivity growth across regions

Productivity growth is important because increases in output per hour worked allow salaries and profits to rise, standards of living to improve, and allow society to fund better public services. In the long-run, regions that experience faster, sustained growth in productivity should have greater levels of prosperity than other regions. Figure 3 shows the growth of output per hour in each International Territorial Level (ITL1) region in 2019.

Half of the UK's 12 ITL1 regions experienced growth in output per hour in 2019, while the other half contracted. The highest growth of output per hour was 2.5% in Wales, whereas the largest fall was by 2.8% in Northern Ireland. Although productivity growth is increasing in certain areas of the North of England and Midlands, their productivity levels remain lower than the South of England.

Figure 3: Productivity growth in all regions was small compared to differences between regions

Output per hour annual growth rates by International Territorial Level (ITL1) region, UK, 2019 and Output per hour annual level by ITL1 region, UK 2018

Download this chart

Shifts of economic activity from one region to another (the allocation effect) can be an important factor for productivity growth. Figure 4 shows the contribution of each region to the total output per hour growth alongside the allocation effect, of which there was zero. In 2019, London contributed the most to UK output per hour growth. Despite having the fastest output per hour growth rate, Wales made only the third-largest contribution to growth, as the total number of hours worked is relatively low in Wales compared with other regions. In contrast, the South East showed the greatest negative contribution to growth despite only having the third-largest productivity decline; this is because of its large share of total hours worked in the economy.

Figure 4: London made the largest positive contributions to productivity growth in 2019, while the South East and North West made the largest negative contributions

Contributions to UK output per hour and output per hour growth by International Territorial Level region, UK, 2019

Figure 4: London made the largest positive contributions to productivity growth in 2019, while the South East and North West made the largest negative contributions

Contributions to UK output per hour and output per hour growth by International Territorial Level region, UK, 2019
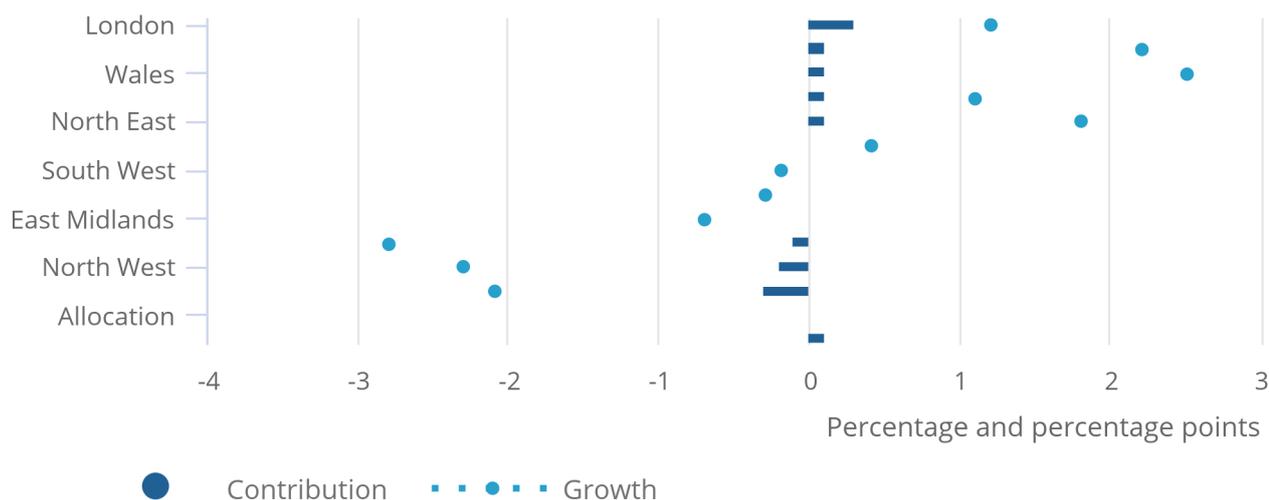
Source: Office for National Statistics

Notes:

1. Growth can differ greatly to contributions because of the proportion of hours worked in each region, but when UK growth is small there is little scope for contrast between regional contributions.

2. The extra-regio contribution is applied to economic activity that cannot be assigned to any specific region within a country and is included within the allocation effect.

4 . Trends across time

Since the 2008 to 2009 economic downturn, UK output per hour worked has grown at a cumulative average annual growth rate (CAGR) of 0.5%. Over the same period, total hours worked in the UK have grown by 1.4%. Figure 5 shows all regions experienced growth in productivity, with Scotland experiencing growth of 1.0%, the fastest of any region, and the North West growing at 0.1%, the slowest of any region. Over the period, all regions saw a rise in gross value added (GVA) and total hours worked.

Figure 5: Output per hour, total hours worked and gross value added have grown across all regions since 2009

Cumulative average annual growth rates between 2009 and 2019 for total hours worked, output per hour worked, gross value added, UK
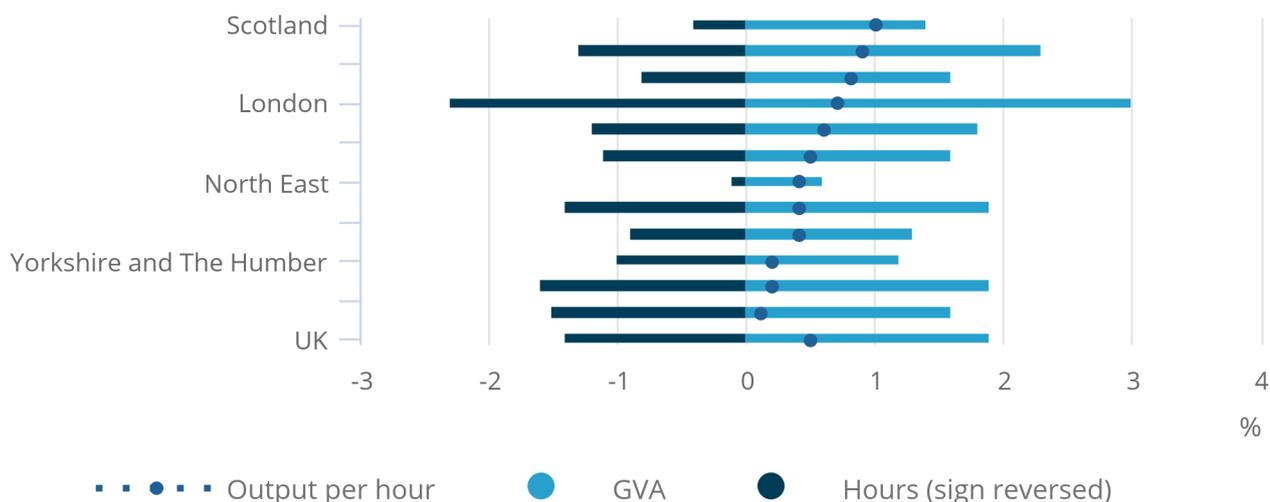
Source: Office for National Statistics

Notes:

1. Estimates of total hours worked are sign reversed to reflect how they affect output per hour. An increase in hours worked will reduce output per hour, while a decrease in hours worked will lift output per hour.

2. Growth rates are calculated as cumulative average annual growth rates.

Figure 6 shows every region experienced growth in output per job between 2009 and 2019. The West Midlands and Scotland saw the most growth at 1.0%, while the North West and Yorkshire and The Humber grew by 0.5%, the least of all the regions. Over the period, all regions saw a rise in GVA, and all but the North East saw a rise in jobs.

Figure 6: Output per job and gross value added have grown across all regions since 2009

Cumulative average annual growth rates between 2009 and 2019 for jobs, output per job, gross value added, UK

Figure 6: Output per job and gross value added have grown across all regions since 2009

Cumulative average annual growth rates between 2009 and 2019 for jobs, output per job, gross value added, UK

Source: Office for National Statistics

Notes:

1. Estimates of jobs are sign reversed to reflect how they affect output per job. An increase in jobs will reduce output per job, while a decrease in jobs will lift output per job.

2. Growth rates are calculated as cumulative average annual growth rates.

5 . Regional labour productivity data

[Annual regional labour productivity](#)
Dataset PRODBYREG | Released 7 July 2021
Annual estimates of output per job and output per hour relative to the UK, for the whole economy across 13 regions and nations in the UK, from 1998. Prior to July 2019 these data were published as Table 9 of dataset LPROD01.

[Regional productivity time series](#)
Dataset RPRD | Released 7 July 2021
Annual output per hour and output per job for the whole economy across 13 regions and nations in the UK.

[Region by industry labour productivity](#)
Dataset INDBYREG | Released 7 July 2021
Annual productivity hours, productivity jobs, output per hour, and output per job by UK NUTS1 regions (and devolved nations) and industry section. Experimental Statistics.

6 . Glossary

Labour inputs

Labour inputs in this release are measured in terms of jobs ("productivity jobs") and hours worked ("productivity hours"), for an industry within a geographic area.

Labour productivity

Labour productivity is calculated by dividing output by labour input.

Output

Output refers to gross value added (GVA), which is an estimate of the volume of goods and services produced after subtracting the volume of intermediate goods and services used in the production process (intermediate consumption). It is measured by industry within a geographic area, and in aggregate across industries for a geographic area.

Region

One of the 12 regions or devolved nations of the UK distinguished by [International Territorial Level (ITL1) regions.](#)

7 . Measuring the data

Data in this release, and in the [productivity estimates](#) published alongside, are consistent with Blue Book 2020 data. They therefore do not reflect revisions outlined in our recent article on the [impact of Blue Book 2021](#) changes (including double deflation) on labour productivity. Those changes will be implemented in quarterly productivity estimates from October 2021, after the quarterly national accounts in September 2021.

Two measures of output are used in these statistics, both from regional gross value added (balanced) by industry: all [ITL1 level regions](), a new classification system introduced in January 2021. For comparing levels of output per hour across industries or regions, output is the current price estimate of economic activity using nominal output (current prices) and may be subject to unmeasured differences in regional prices. For assessing rates of growth in output per hour from one year to another, output is the chained volume measure of gross value added (GVA).

Labour input measures used in this bulletin are known as "productivity jobs" and "productivity hours".

For estimates of regional productivity relative to the UK, productivity jobs is calculated by summing numbers of employees, the self-employed and two smaller components: Her Majesty's Forces (HMF) and government-supported trainees (GST). These data come from two principal sources within the Office for National Statistics (ONS): Short-Term Employment Survey (STES) data and the Labour Force Survey (LFS). Productivity hours are derived from estimates of average hours (derived from the LFS micro-dataset) and productivity jobs.

Information on the industry by region estimates of labour can be found in [Introducing industry-by-region labour metrics and productivity: 2015]().

Quality

More quality and methodology information on strengths, limitations, appropriate uses, and how the data were created is available in the [Labour productivity QMI]() and [Introducing industry-by-region labour metrics and productivity: 2015]().

8 . Strengths and limitations

This release reports labour productivity estimates for 2019 for [International Territorial Level (ITL1) regions]() and for section-level industries within regions. Productivity is important because it is the long-term driver of changes in average living standards.

Figures in this release reflect data in the [dataset labelled PRODBYREG](). The dataset contains [National Statistics]() on output per hour worked and output per job for each of the 12 ITL1 regions.

Data by industry and region are available in the [accompanying dataset labelled INDBYREG](), which are [Experimental Statistics]().

Comparability and consistency

The output statistics in this release are consistent with the latest analysis on [Regional economic activity by gross domestic product, UK]() published on 26 May 2021. Productivity in this release uses measures of labour derived from the working population, unlike measures of regional [gross value added (GVA) per head]().

The labour input measures used in this release are calculated from the latest Short-Term Employment Survey (STES) data and the Labour Force Survey (LFS) from the Office for National Statistics. Other [labour market statistics are available here]().

9 . Related links

Introducing industry-by-region labour metrics and productivity: 2015
Article | Released 5 July 2017
New experimental industry-by-region metrics, including measures of hours worked, jobs and accompanying productivity measures for the SIC letter industries in the NUTS1 regions.

Regional labour market statistics in the UK: June 2021
Bulletin | Released 15 June 2021
Regional, local authority and Parliamentary constituency breakdowns of changes in UK employment, unemployment, economic inactivity and other related statistics.

Productivity economic commentary, UK: January to March 20
Article | Released 7 July 2021
The main findings from official statistics and analysis of UK productivity, presenting a summary of recent developments.

Regional economic activity by gross domestic product, UK: 1998 to 2019
Bulletin | Released 26 May 2021
Annual estimates of economic activity by UK country, region and local area using gross domestic product (GDP). Estimates are available in current market prices and in chained volume measures and include a full industry breakdown of balanced regional gross value added (GVA(B)).