

Statistical bulletin

Labour productivity for UK countries and regions, quarterly: October to December 2020

Introducing annual and quarterly regional labour productivity, gross value added, hours and jobs, 2012 to 2020.

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1 . Main points

- New quarterly regional productivity estimates provide more timely analysis of movements of gross value added (GVA), labour inputs, and productivity in different parts of the UK during 2020.
- In 2020, output per hour worked grew the most compared with 2019 in the North West, increasing by 4.6%, and decreased the most in the West Midlands, decreasing by 1.4%.
- In Quarter 2 (Apr to June) 2020, when coronavirus (COVID-19) restrictions were first introduced, output per hour worked decreased in London, falling by 3.8% compared with the previous quarter; but increased over the same period in seven regions, increasing the most in Northern Ireland, where it grew by 6.8%.
- In Quarter 3 (Jul to Sept) 2020, as lockdown restrictions started easing, output per hour worked increased in all countries and regions of the UK compared with the previous quarter; most in the South West, increasing by 10.3%, and least in the East of England, increasing by 1.5%.
- In Quarter 4 (Oct to Dec) 2020, output per hour decreased across the UK: most in the North East, falling by 8.8%, and least in Northern Ireland, decreasing by 0.5% compared with the previous quarter.

Quarterly regional productivity estimates for 2020 are experimental. They may be more volatile than the labour productivity estimates and change more over short periods than the labour productivity estimates for the whole of the UK. Caution should be used when interpreting the data. For more details, see [GDP, UK regions and countries: October to December 2020](#).

2 . Productivity growth in different parts of the UK in 2020

In 2020, output per hour worked in six of the UK countries and regions increased more than in the UK as a whole. Output per hour in Wales also grew but to a lesser extent than in the UK as a whole. In the remaining countries and regions output per hour worked decreased.

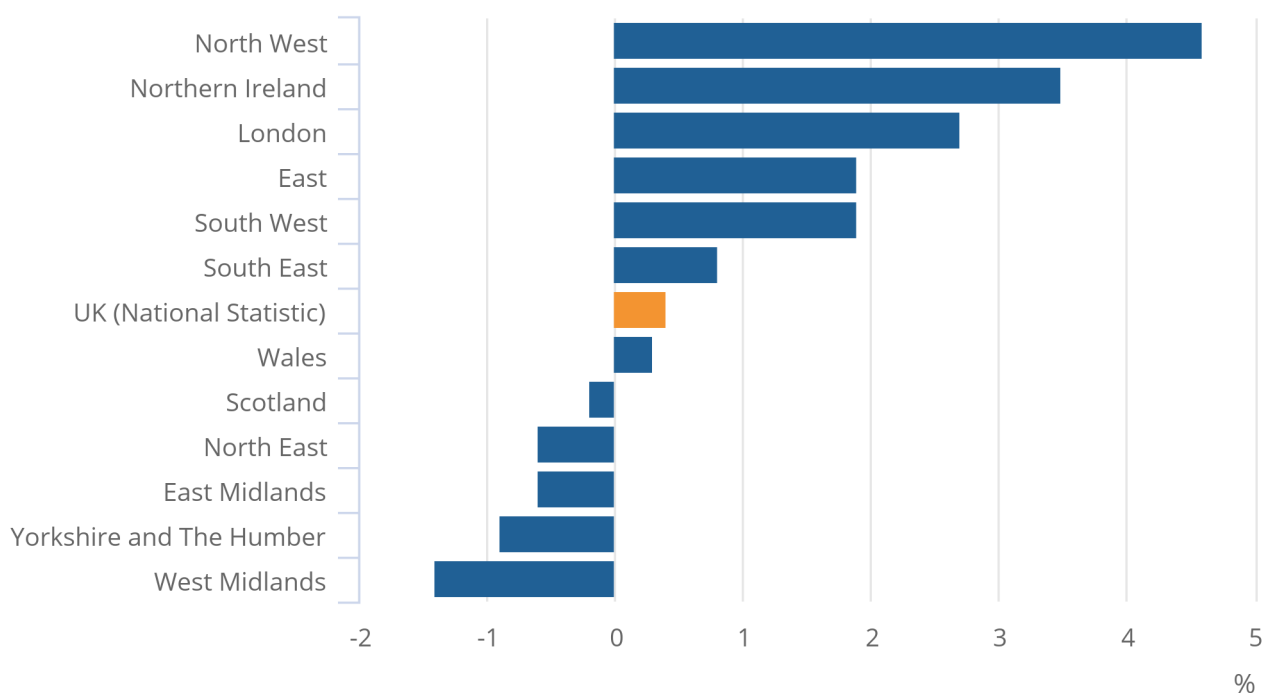
Across the UK as a whole, labour productivity rose by 0.4% in 2020 compared with 2019. Please see the [Productivity economic commentary, UK: January to March 2021 release](#) for more details.

Figure 1: The North West experienced the largest growth in output per hour in 2020, compared to the previous year, while the West Midlands experienced the largest decrease

Output per hour year-on-year growth (2019 to 2020), UK countries and regions

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Output per hour year-on-year growth (2019 to 2020), UK countries and regions



Source: Office for National Statistics – Annual and quarterly labour productivity, gross value added, hours and jobs

Notes:

1. The UK figure is our National Statistic and can be found in [Productivity economic commentary, UK: January to March 2021](#).

The differing productivity growths in 2020 may reflect differences in how the coronavirus (COVID-19) pandemic affected the economies in different regions and countries of the UK, and how restrictions to control the virus varied across the UK. For instance, local lockdowns in some parts of England, and variations in restrictions in Scotland, Wales and Northern Ireland compared with England, might have led to differences in measured productivity.

[Productivity for the UK](#) was pushed up substantially by a large positive “allocation effect”. This is caused by a (temporary) shift in the share of economic activity towards industries that have relatively higher levels of productivity since shutdown industries tend to have lower levels of productivity. Regions with a greater share of the workforce in the industries that were forced to close for parts of the year (such as accommodation and food services, and arts and entertainment) may have experienced stronger positive allocation effects. The ability to [work from home](#) also varies substantially across the UK.

3 . Regional patterns of output, hours worked and productivity during the coronavirus (COVID-19) pandemic

Movements in output per hour worked during 2020 for the countries and regions of the UK broadly follow one of three patterns because of differing changes in gross value added (GVA) and hours worked. In each of the following figures (Figure 2, Figure 3 and Figure 4) one of the 12 UK countries and regions is displayed as an example of one of those patterns of change. The dataset linked in this article ([see Section 4](#)) can be used to create charts for all 12 countries and regions.

The variation in movements in output per hour during 2020 is mostly because of variation in hours worked. In all regions and countries, the pattern of change in GVA is similar.

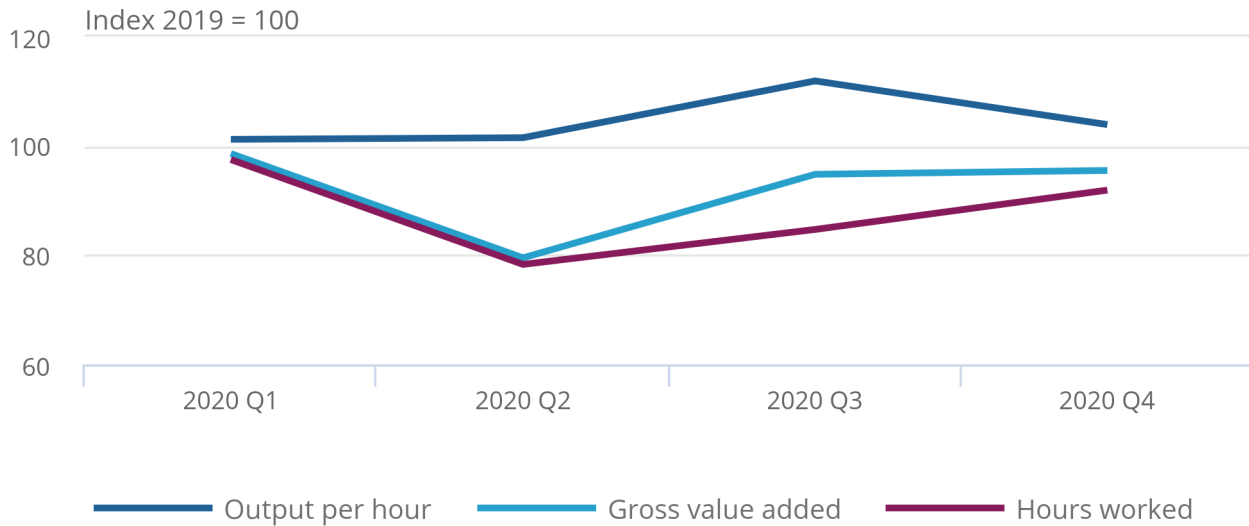
The first pattern of change, illustrated by the North West, shows output per hour remaining stable in 2020 between Quarter 1 (Jan to Mar) and Quarter 2 (Apr to June) (when coronavirus restrictions were introduced), followed by an increase in Quarter 3 (July to Sept) (when restrictions were lifted), and subsequent fall in Quarter 4 (Oct to Dec) (when restrictions were reintroduced). This pattern can be explained by a large decrease in both GVA and hours worked in Quarter 2, a faster recovery in GVA than hours worked in Quarter 3 (more output produced per hour worked), followed by a stronger recovery of hours worked than GVA in Quarter 4. As well as the North West, regions showing a similar pattern include the North East, Yorkshire and The Humber, South East, South West and Scotland.

Figure 2: In the North West, output and hours worked decreased sharply in Quarter 2 (Apr to June), but gross value added (GVA) grew faster in Quarter 3 (July to Sept) with hours worked catching up in Quarter 4 (Oct to Dec)

GVA, hours worked and output per hour, North West, Quarter 1 (Jan to Mar) to Quarter 4 2020, index relative to 2019=100

Figure 2: In the North West, output and hours worked decreased sharply in Quarter 2 (Apr to June), but gross value added (GVA) grew faster in Quarter 3 (July to Sept) with hours worked catching up in Quarter 4 (Oct to Dec)

GVA, hours worked and output per hour, North West, Quarter 1 (Jan to Mar) to Quarter 4 2020, index relative to 2019=100



Source: Office for National Statistics – Annual and quarterly labour productivity, gross value added, hours and jobs

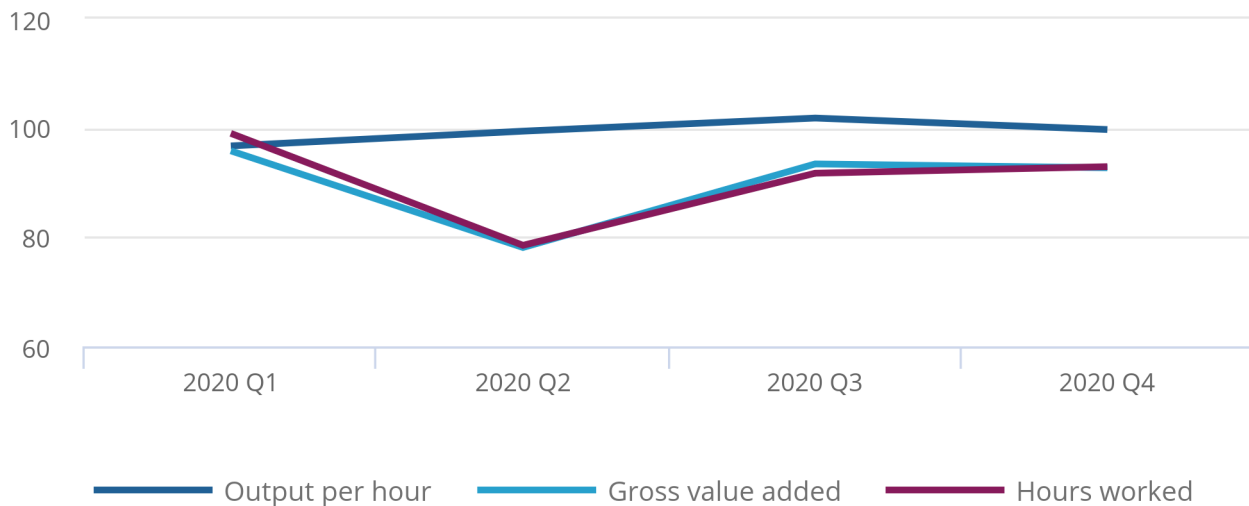
The second pattern of change, illustrated by the East Midlands, shows a muted increase in output per hour in Quarter 3 compared with the pattern illustrated in Figure 2. Here both GVA and hours worked show similar declines and recoveries throughout 2020. As well as the East Midlands, other regions showing this pattern include the East of England and the West Midlands.

Figure 3: In the East Midlands, both gross value added (GVA) and hours worked follow a similar pattern of decline and recovery but continue to remain below their Quarter 1 (Jan to Mar) 2020 levels

GVA, hours worked and output per hour, East Midlands, Quarter 1 to Quarter 4 (Oct to Dec) 2020, index relative to 2019=100

Figure 3: In the East Midlands, both gross value added (GVA) and hours worked follow a similar pattern of decline and recovery but continue to remain below their Quarter 1 (Jan to Mar) 2020 levels

GVA, hours worked and output per hour, East Midlands, Quarter 1 to Quarter 4 (Oct to Dec) 2020, index relative to 2019=100



Source: Office for National Statistics – Annual and quarterly labour productivity, gross value added, hours and jobs

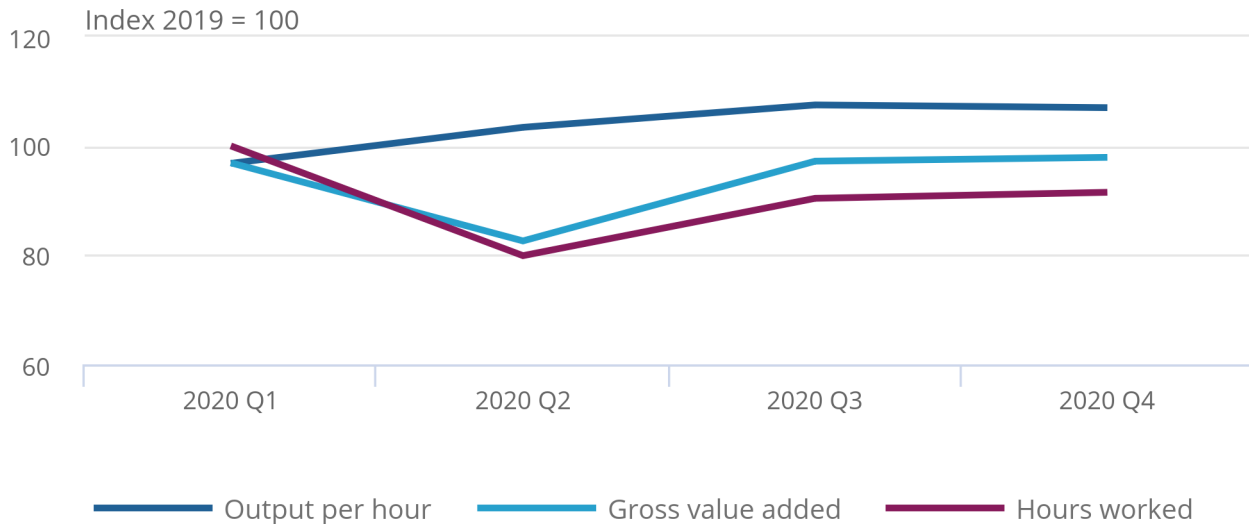
The final pattern of change, illustrated by Northern Ireland, shows a similar increase in output per hour during Quarter 3 to the patterns in Figure 2 and 3, but without a notable decline in Quarter 4. As with the pattern in Figure 2, both GVA and hours worked decline in Quarter 2 with GVA recovering faster into Quarter 3. However, in this case, hours worked do not recover to a similar level as GVA in Quarter 4, leading to a persistently higher level of productivity. As well as Northern Ireland, other regions following this pattern include Wales and London.

Figure 4: In Northern Ireland, gross value added (GVA) recovered to its Quarter 1 (Jan to Mar) 2020 value, but hours worked continued to lag behind into Quarter 3 (July to Sept) and Quarter 4 (Oct to Dec)

GVA, hours worked and output per hour, Northern Ireland, Quarter 1 2020 to Quarter 4 2020, index relative to 2019=100

Figure 4: In Northern Ireland, gross value added (GVA) recovered to its Quarter 1 (Jan to Mar) 2020 value, but hours worked continued to lag behind into Quarter 3 (July to Sept) and Quarter 4 (Oct to Dec)

GVA, hours worked and output per hour, Northern Ireland, Quarter 1 2020 to Quarter 4 2020, index relative to 2019=100



Source: Office for National Statistics – Annual and quarterly labour productivity, gross value added, hours and jobs, Northern Ireland Statistical Research Agency – Northern Ireland Composite Economic Index

4 . Labour productivity for UK countries and regions, quarterly data

[Quarterly regional labour productivity, gross value added, hours and jobs](#)

Dataset | Released on 4 August 2021

Annual and quarterly data exploring regional labour productivity, gross value added, hours and jobs.

5 . Glossary

Labour productivity

Labour productivity measures how many units of labour input is needed to produce a unit of output, and is calculated by dividing output by labour input.

Labour inputs

The preferred measure of labour input is hours worked ("productivity hours"), but workers and jobs ("productivity jobs") are also used.

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).

Regions and countries

For statistical purposes, the UK is divided into twelve geographical regions. For the list of regions and their definitions, see [England Regions and Codes](#) and [UK Countries and Codes](#).

6 . Measuring the data

Like other estimates of labour productivity, the data in this publication have been calculated by dividing real gross value added (GVA) by hours worked (for output per hour) and dividing real GVA by jobs (for output per job).

GVA estimates for Wales and the nine English regions is taken from the latest publication of [GDP, UK regions and countries: October to December 2020](#). The estimates for quarterly labour productivity for Scotland are not consistent with those published by [Scottish Government](#). This is because the two series use different data sources.

GVA estimates for Scotland are taken from the [GDP quarterly national accounts: 2020 quarter 4 \(October to December\)](#) published by the Scottish Government. Background information for these data can be found in the accompanying [GDP background documents](#).

GVA estimates for Northern Ireland are from the Northern Ireland Composite Economic Index from the [Northern Ireland Statistics and Research Agency \(NISRA\)](#). Note that processing of data can result in very small rounding differences between estimates. Background information for these data can be found in the accompanying [GDP background documents](#).

Hours worked and jobs used in these statistics are those published as quarterly regional labour metrics since April 2017. These are known as "productivity hours" and "productivity jobs" to differentiate them from other labour market estimates produced by the Office for National Statistics (ONS). The labour metrics used in this release are aligned to regions on a Local Unit basis, consistent with the allocation basis used in regional output data. They use a range of sources including the Short-Term Employment Survey and the Labour Force Survey. For more details see [Introducing quarterly regional labour metrics](#).

The annual data for years before 2020 is not the same series as the quarterly data for 2020. These data are the "All Industries" series published in the [Region by industry tables](#) on 7 July 2021. They are provided to enable longer-term analysis.

7 . Strengths and limitations

Strengths

The new quarterly regional gross value added (GVA) data for Wales and the nine English regions means that regional GVA estimates now exist for 2020 for the first time. This is the timeliest regional GVA data available. Combining this data with quarterly hours worked and jobs data, and earlier annual regional labour productivity estimates, allows analysis of regional productivity performance in 2020. Previously, regional productivity estimates were annual only and available two years after the reference period. This means that this analysis would have been possible only in 2022 and that even then, no analysis of quarterly growth would have been possible. Analysis of quarterly growth allows for assessment of performance in Quarter 1 (Jan to Mar) 2020, when lockdown measures were first introduced, and Quarter 3 (July to Sept) 2020, when England partially re-opened. This dataset therefore represents a significant improvement in timeliness and ability to analyse the short-term economic effect of the pandemic in different areas of the UK.

The quarterly regional GVA estimates also meet the technical requirements to be combined with the hours worked and jobs estimates to calculate labour productivity. These are that:

- they cover exactly the same time periods as the hours worked and jobs estimates
- they cover exactly the same geographical regions as the hours worked and jobs estimates
- their calculation methodology allocates GVA to different sites within the same business in the same way as the hours worked and jobs calculation methodology allocates hours and jobs: on a Local Unit basis ([see Section 6](#))

Limitations

The quarterly regional GVA estimates used to calculate the productivity statistics in this publication are [experimental](#), and accordingly these quarterly regional productivity estimates in this release are also classed as experimental. This differs to the annual regional productivity estimates, and quarterly UK productivity estimates, which are both badged as [National Statistics](#).

The nature of these statistics mean that they may be more volatile and change more over short periods than [labour productivity for the UK](#). For longer-term analysis of productivity in different parts of the UK, we encourage use of the [annual regional productivity estimates](#), since these are less volatile and more robust.

The quarterly regional GVA estimates are not fully consistent with the regional economic activity by gross domestic product, UK: 1998 to 2019, see GDP, UK regions and countries: October to December 2020 for more information. This is in contrast to the [annual regional productivity estimates](#), including those used in this release, which do use data from the [regional economic activity by gross domestic product, UK: 1998 to 2019](#). For this reason, we have published quarterly regional labour productivity only for 2020, for which there are currently no annual regional accounts data.

The quarterly output estimates used to calculate labour productivity for Scotland and Northern Ireland in this publication are those published by the [Scottish Government](#) and the [Northern Ireland Statistics and Research Agency](#). These estimates are not consistent with the annual estimates published in the [regional economic activity by gross domestic product, UK: 1998 to 2019](#). This is because the regional accounts are based on different data sources than the quarterly output estimates, and because they are adjusted based on a balancing process across the different regions and industrial sectors in the UK, while the quarterly output estimates are adjusted based on a Supply-Use balancing process across the different industries and products within Scotland and Northern Ireland (separately for each of the two countries). However, for Northern Ireland, the annual Regional Accounts industry GVA(B) values are used to weight the relevant industries and the overall NICEI is weighted using the total NI GVA (B) annual values.

8 . Related links

[Regional labour productivity, including industry by region, UK: 2019](#)

Bulletin | Released 7 July 2021

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.

[Productivity economic commentary, UK: January to March 2021](#)

Article | Released 7 July 2021

The main findings from official statistics and analysis of UK productivity, presenting a summary of recent developments.

[GDP, UK regions and countries: October to December 2020](#)

Bulletin | Released 3 August 2021

Quarterly economic activity within the countries of the UK (England, Wales, Scotland and Northern Ireland) and the nine English regions (North East, North West, Yorkshire and The Humber, East Midlands, West Midlands, East of England, London, South East, and South West).

The estimates for quarterly labour productivity for Scotland are not consistent with those published by [Scottish Government](#). This is because the two series use different data sources.