

Article

# Productivity flash estimate and overview, UK: October to December 2023 and July to September 2023

Productivity flash estimates for Quarter 4 (October to December) 2023, based on the GDP first quarterly estimate and labour market statistics, and productivity overview for Quarter 3 (July to September) 2023.



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To be announced

## Notice

### 15 February 2024

We are merging our "Productivity overview, UK" and "UK productivity flash estimate" releases. This is because of the reintroduction of an LFS-based dataset in the February 2024 UK labour market publication. More information can be found in our [Statement on the Labour Force Survey](#).

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# 1 . Main points

## Flash estimates of labour productivity for Quarter 4 2023

- Preliminary estimates of annual productivity growth, remained flat with 0.0% growth in terms of output per hour and decreased by 0.6%, in terms of output per worker, in 2023, when compared with the previous year.
- Preliminary estimates of output per hour worked decreased by 0.3% in Quarter 4 (Oct to Dec) 2023 compared with the same quarter a year ago, but remained 2.0% above its pre-coronavirus (COVID-19) pandemic levels (2019 average level).
- Preliminary estimates of output per worker decreased by 0.6% in Quarter 4 (Oct to Dec) 2023 compared with the same quarter a year ago, but this was 0.3% above its pre-coronavirus (COVID-19) pandemic levels (2019 average level).

## Labour productivity by industry section for Quarter 3 2023

- The administrative services and manufacturing industries made the biggest upwards contributions to productivity growth, while the finance and insurance industry made the biggest negative contribution, when comparing Quarter 3 (July to Sept) 2023 with the same quarter a year ago.

Labour productivity measures for whole economy or specific industries are not directly comparable with [Public Service Productivity](#) or [Multi-Factor Productivity measures](#). Differences between the productivity measures are described in our [How to compare and interpret ONS productivity measures article](#).

# 2 . Flash estimates of labour productivity for Quarter 4 2023

## Differences between estimates for Quarter 4 and Quarter 3 2023

Estimates in both [Section 2: Flash estimates of labour productivity for Quarter 4 2023](#) and [Section 3: Labour productivity by industry section for Quarter 3 2023](#), are subject to revision because of national accounts and labour market revisions. Flash estimates for Quarter 4 2023 use the [GDP first quarterly estimate](#), which includes revisions from Quarter 1 (Jan to Mar) 2023 onwards and provides the first look at UK productivity for Quarter 4 2023.

Estimates by industry section for Quarter 3 2023 are made using the [GDP quarterly national accounts](#), and hence may differ. This publication does not include labour cost estimates and output per job. These will resume after we have analysed the impact of Labour Force Survey (LFS) reweighting.

This bulletin uses the latest reweighted LFS data. On 13 February 2024, we reinstated reweighted LFS estimates for our [labour market publication](#) . More information can be found in [Section 6: Measuring the data](#).

We continue to transition to the new Transformed Labour Force Survey (TLFS) and we will keep users informed about [future developments of the TLFS](#). We aim to start using TLFS in our productivity outputs from November 2024.

## Flash estimates for Quarter 4 2023

Preliminary estimates of annual productivity growth remained flat, with 0.0% growth in terms of output per hour, and a decrease of 0.6%, in terms of output per worker in 2023, when compared with the previous year. This shows that the number of workers increased more than hours worked, as average hours declined in 2023 compared with 2022.

In Quarter 4 2023, output per hour worked, our headline measure of labour productivity, was 0.3% lower than the same quarter a year ago. Output per hour worked decreased because gross value added (GVA) decreased by 0.3%, while hours worked remained flat with 0.0% growth, compared with the same quarter a year ago.

Output per hour worked was 2.0% above its pre-coronavirus (COVID-19) pandemic levels (2019 average level) in Quarter 4 (Oct to Dec) 2023, although this had fallen compared with the previous quarter. Figure 1 shows that this growth was caused by an increase in GVA of 1.4% since 2019, while the number of hours worked decreased by 0.6% over the period.

Table 1: Flash estimates of labour productivity  
UK, Quarter 4 (Oct to Dec) 2022 to Quarter 4 (Oct to Dec) 2023

Period	Output per hour worked growth rates			Output per worker growth rates		
	Quarter vs 2019 pre-pandemic level (%)	Quarter-on-year ago (%)	Quarter-on-quarter (%)	Quarter vs 2019 pre-pandemic level (%)	Quarter-on-year ago (%)	Quarter-on-quarter (%)
<b>Q4 2022</b>	2.3	-0.6	-0.2	0.9	-0.5	-0.3
<b>Q1 2023</b>	1.7	-0.3	-0.6	0.8	-0.9	-0.2
<b>Q2 2023</b>	2.3	0.2	0.6	0.8	-0.4	0.1
<b>Q3 2023</b>	3.0	0.5	0.7	0.9	-0.4	0.0
<b>Q4 2023</b>	2.0	-0.3	-1.0	0.3	-0.6	-0.6

Source: Productivity flash estimate and overview, UK from the Office for National Statistics

### Notes

1. Comparisons with pre-coronavirus (COVID-19) pandemic levels use average 2019 levels as the base period.

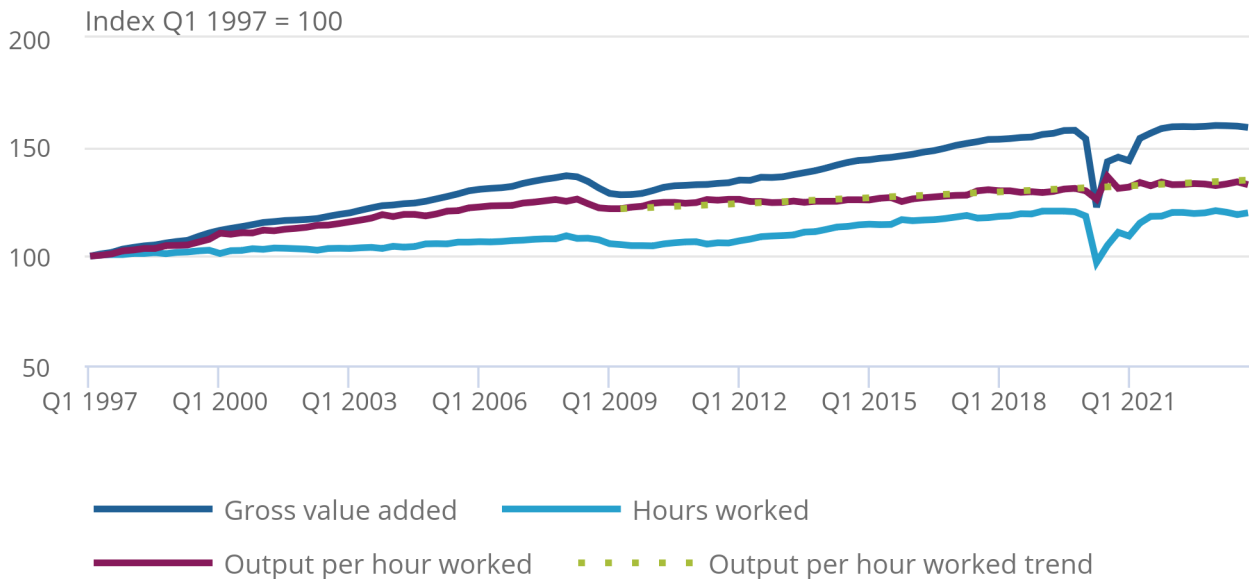
Figure 1 shows that while the coronavirus (COVID-19) pandemic had a significant short-term effect on the growth rate of productivity, unlike most "standard" recessions (such as the financial downturn in 2008 to 2009) which demonstrate a subsequent fall in productivity, the trend rate has been unaffected when taken from 2009 onwards. This trend is historically weak and is recognised as the "productivity puzzle", which suggests that an underlying weakness in the causes of productivity growth remain. While the post-coronavirus pandemic trend may appear slightly weaker in recent quarters compared with this trend, this remains within the range seen around this trend during the period between the great financial crisis, and the pandemic, therefore it is too early to suggest a material change to this trend rate.

**Figure 1: Output per hour worked was 0.3% lower than a year ago, and 2.0% higher than in 2019**

Gross value added, hours worked, output per hour worked, UK, index 1997 Q1 = 100, Quarter 1 (Jan to Mar) 1997 to Quarter 4 (Oct to Dec) 2023

Figure 1: Output per hour worked was 0.3% lower than a year ago, and 2.0% higher than in 2019

Gross value added, hours worked, output per hour worked, UK, index 1997 Q1 = 100, Quarter 1 (Jan to Mar) 1997 to Quarter 4 (Oct to Dec) 2023



Source: Productivity flash estimate and overview, UK from the Office for National Statistics

Notes:

1. The output per hour trendline is constructed by calculating the average growth between Quarter 2 2009 (the GVA low point of the 2008 economic downturn) and Quarter 4 2019 (the GVA high point before the coronavirus (COVID-19) pandemic).

Output per worker was 0.6% below its equivalent Quarter 4 (Oct to Dec) 2022. This is because GVA decreased by 0.3%, while the number of workers grew by 0.3%.

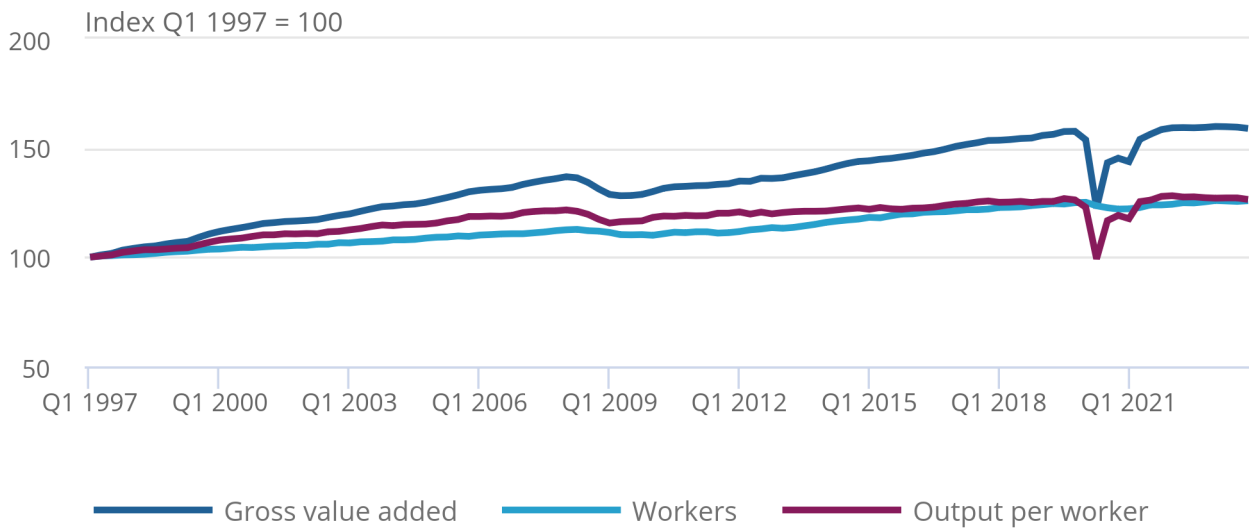
Output per worker was 0.3% above its pre-coronavirus pandemic level. This was caused by the growth in GVA of 1.4%, which was higher than the growth in the number of workers of 1.1%

**Figure 2: Output per worker was 0.6% lower in Quarter 4 2023 than a year ago, and 0.3% higher than in 2019**

Output per worker, gross value added, employment, UK, index Q1 1997 = 100, Quarter 1 (Jan to Mar) 1997 to Quarter 4 (Oct to Dec) 2023

Figure 2: Output per worker was 0.6% lower in Quarter 4 2023 than a year ago, and 0.3% higher than in 2019

Output per worker, gross value added, employment, UK, index Q1 1997 = 100, Quarter 1 (Jan to Mar) 1997 to Quarter 4 (Oct to Dec) 2023



Source: Productivity flash estimate and overview, UK from the Office for National Statistics

### 3 . Labour productivity by industry section for Quarter 3 2023

The labour productivity by industry section for Quarter 3 (July to Dec) 2023 uses the reweighted Labour Force Survey (LFS) data and [GDP quarterly national accounts](#). More information can be found in [Section 6: Measuring the data](#)

Figure 3 shows the contribution to growth in output per hour worked for 19 industries in Quarter 3 2023, relative to the same quarter a year ago.

The administrative services and manufacturing industries made the biggest upwards contributions to productivity growth over the last four quarters. By contrast, over the same period, the finance and insurance industry made the biggest negative contribution to productivity growth. The energy, hotels and catering, health, transport and storage and public administration and defence industries did not make any substantive contribution to productivity growth over the same period.

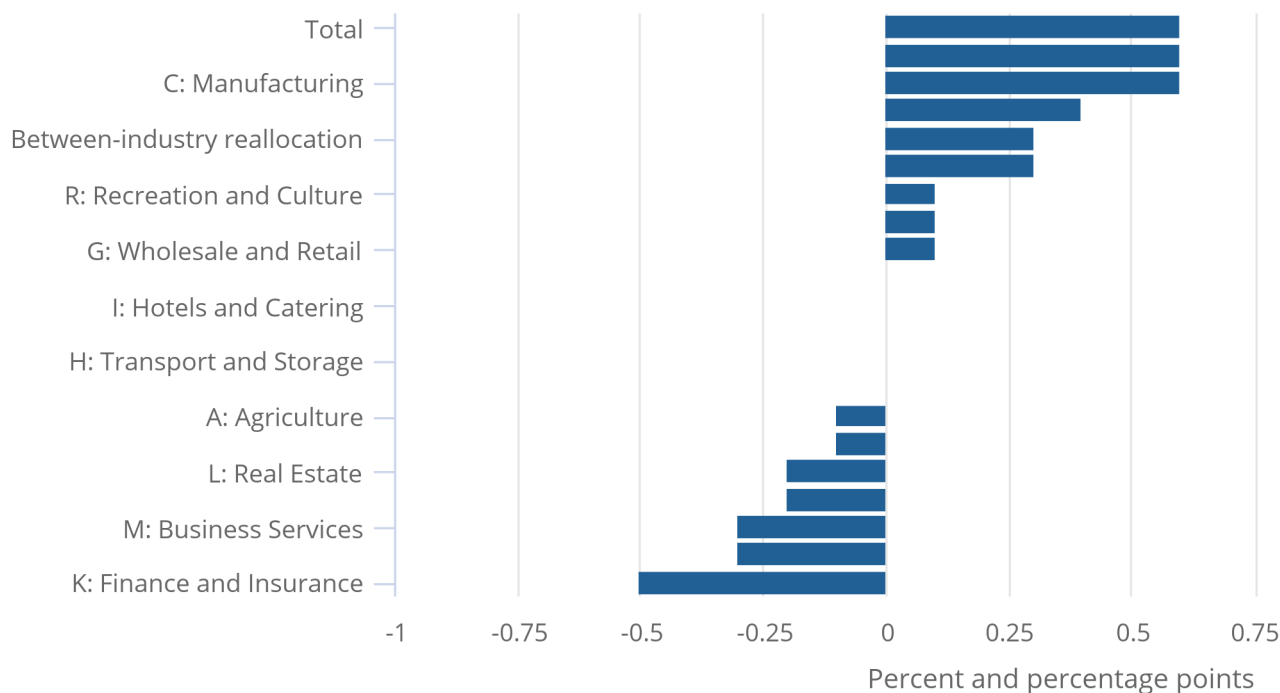
Whole-economy growth in productivity is affected by reallocation of economic activity between industries (the between-industry effect). The between-industry reallocation made a positive contribution to productivity growth over the past year, showing that on average, economic activity tended to shift from industries with lower productivity to industries with higher productivity.

**Figure 3: Administrative services and manufacturing industries made the biggest upwards contribution over the last year**

Contribution to growth of output per hour worked, percentage points, relative to Quarter 3 (July to Sept) 2022

**Figure 3: Administrative services and manufacturing industries made the biggest upwards contribution over the last year**

Contribution to growth of output per hour worked, percentage points, relative to Quarter 3 (July to Sept) 2022



Source: Productivity flash estimate and overview, UK from the Office for National Statistics

Notes:

1. Imputed rental is excluded from the real estate industry.
2. The industry contributions may not add up to the total growth in output per hour. This is because of the exclusion of [imputed rental](#) from real estate. Also, because of the National Accounts balancing value and the impact of rounding.
3. "Other services" industry includes: activities of households as employers, undifferentiated goods and services producing activities of households for own use, activities of membership organisations, repair of computers and personal and household goods and a variety of personal service activities not covered elsewhere in our [Standard Industrial Classification \(SIC\) 2007](#).

Figure 4 shows the decomposition of growth of output per hour worked. In the administrative services industry, growth in output per hour worked was caused by an increase in gross value added (GVA) and a fall in hours worked. In recent quarters we suppressed certain industries in reaction to the quality of data. These issues have been sufficiently addressed to permit a return to the publication of all industries.

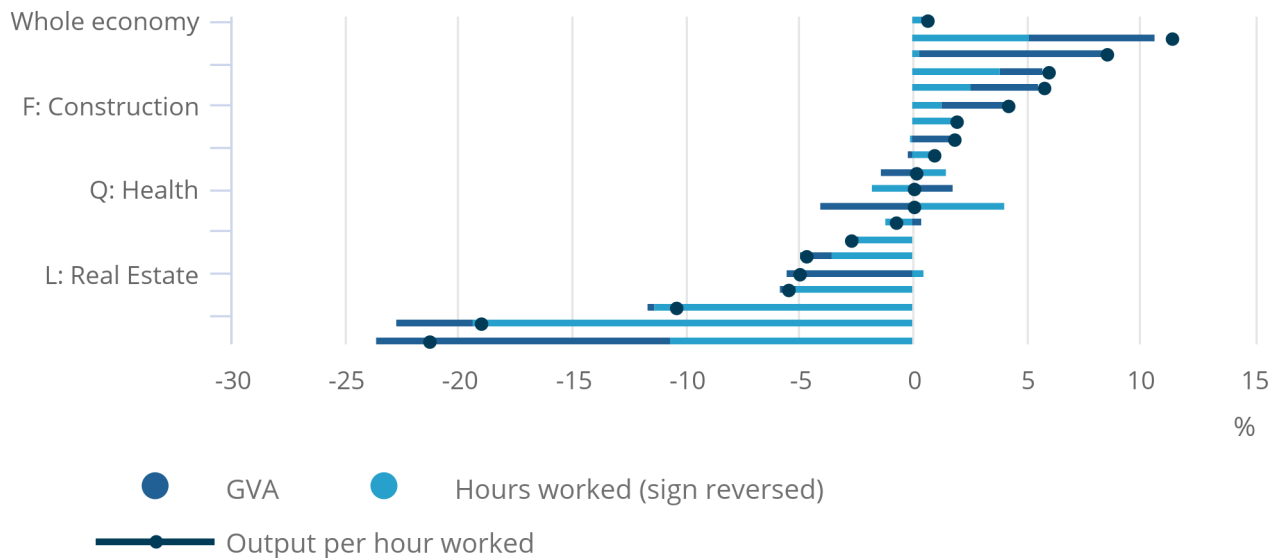


**Figure 4: Administrative services industry saw the biggest growth in output per hour worked over the last year**

Decomposition of growth of output per hour worked, hours worked and gross value added, Quarter 3 (July to Sept) 2023 versus the same quarter a year ago (Quarter 3 2022), percentage change, UK

**Figure 4: Administrative services industry saw the biggest growth in output per hour worked over the last year**

Decomposition of growth of output per hour worked, hours worked and gross value added, Quarter 3 (July to Sept) 2023 versus the same quarter a year ago (Quarter 3 2022), percentage change, UK



Source: Productivity flash estimate and overview, UK from the Office for National Statistics

## 4 . Productivity overview data

[Output per hour worked, UK](#)

Dataset | Released 15 February 2024

Estimates for gross value added (GVA), hours worked and output per hour worked for whole economy and section level industries, as defined by the Standard Industrial Classification (SIC) 2007. Contains annual and quarterly statistics. Includes estimates for industry quarter on quarter, year on year and quarter on year contributions to whole economy output per hour worked.

[Output per worker, UK](#)

Dataset | Released 15 February 2024

Estimates for gross value added (GVA), workers, and output per worker for the whole economy. Contains annual and quarterly statistics.

## 5 . Glossary

## **Gross value added (GVA)**

The value generated by any unit engaged in production and the contributions of individual sectors or industries to gross domestic product (GDP).

## **Labour productivity**

Labour productivity measures how many units of output are produced for each unit of labour input 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 by an industry and in aggregate for the UK.

# **6 . Measuring the data**

We welcome feedback about our publication changes. To help us meet user needs, please email [productivity@ons.gov.uk](mailto:productivity@ons.gov.uk).

## Methodological information

Productivity estimates and their inputs are produced to a number of decimal points as reported in the [accompanying datasets](#). However, within the bulletin we have rounded to one decimal point.

Flash estimates for Quarter 4 (Oct to Dec) 2023 in this release use the first available information from our [GDP first quarterly estimate bulletin](#) to determine output, and labour market data from our [Labour market overview, UK: February 2024 bulletin](#) for Quarter 4 2023. These data may be revised when we release the next publication. The labour productivity estimates by industry section and the datasets are produced by using the [GDP quarterly national accounts](#) and reweighted LFS data up to Quarter 3 (July to Sept) 2023.

More information on the differences between flash estimates for Quarter 4 2023 and data for Quarter 3 2023 can be found in our [Labour productivity Quality and Methodology Information \(QMI\)](#). Information on the National Accounts revision policy can be found in our [National Accounts Revisions Policy: updated December 2023 methodology](#). Further information on the labour market revision policy can be found in our [Revisions policies for labour market statistics methodology](#).

On 2 November 2023, the Office for National Statistics (ONS) published our [Labour Force Survey: planned improvements and its reintroduction methodology](#) to enable the reintroduction of the Labour Force Survey (LFS) following its suspension in October, when falling response rates led to increased data uncertainty. Following the development plan, we published our [Impact of reweighting on Labour Force Survey key indicators: 2024 article](#) on 5 February 2024. On 13 February 2024, the [labour market publication](#) reinstated reweighted LFS. This publication uses the latest reweighted LFS data.

The reweighting exercise has improved the representativeness of our LFS estimates for the period July to September 2022 onwards, reducing potential bias in our estimates. The ongoing challenges with falling number of responses to the LFS, and increased sampling variability, mean that LFS-based labour market statistics will be badged as [official statistics in development](#) until further review. However, our [GDP first quarterly estimate, UK bulletin](#) and our [GDP quarterly national accounts, UK bulletin](#), are accredited official statistics.

Productivity data in this release reflect reweighted LFS data consistent with our [Labour market overview, UK: February 2024 bulletin](#). Whole economy estimates of workers are in line with the [A05SA dataset](#) released on 13 February 2024 in our [Labour market overview, UK: February 2024 bulletin](#). Whole economy estimates of total hours have been adjusted back to mid-2011 to ensure that headline productivity statistics can be assessed without a discontinuity, therefore total hours have been adjusted for the purposes of the productivity estimates and are not part of the labour market release. The adjusted productivity hours worked diverge slightly from estimates of hours worked in the [EMP01SA dataset](#), in time periods from 2011 to 2022.

We have also taken a new approach to reduce volatility in our industry estimates. We only include industry sections, there is no division level and bespoke industry level. The imputed rental is excluded from "Industry L: real estate" and for "Industry B: mining and quarrying", employee average hours are calculated at section level.

New estimates of gross value added (GVA) are more volatile on a quarterly basis, especially in production industries. This reflects the use of new data and methods, but also challenges in reconciling quarterly and annual data, as explained in our [Recent challenges of balancing the three approaches of GDP article](#). As productivity is a structural feature of the economy, we continue to advise users to focus on long-term trends of productivity.

## Authors

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## 7 . Strengths and limitations

Information on the strengths and limitations of the labour productivity data, as well as the quality and accuracy of the data, is available in our [Labour productivity Quality and Methodology Information \(QMI\)](#).

## 8 . Related links

### [GDP first quarterly estimate, UK: July to September 2023](#)

Bulletin | Released 15 February 2023

First quarterly estimate of gross domestic product (GDP). Contains current and constant price data on the value of goods and services to indicate the economic performance of the UK.

### [Labour market overview, UK: February 2023](#)

Bulletin | Released 13 February 2023

Estimates of employment, unemployment, economic inactivity, and other employment-related statistics for the UK.

### [GDP quarterly national accounts, UK: July to September 2023](#)

Bulletin | Released 15 February 2024

Revised quarterly estimate of gross domestic product (GDP) for the UK. Uses additional data to provide a more precise indication of economic growth than the first estimate.

### [Public service productivity, quarterly, UK: July to September 2023](#)

Bulletin | Released 15 January 2024

UK total public service productivity, inputs and output to provide a short-term, timely indicator of annual productivity estimates. These are official statistics in development.

### [UK productivity flash estimate: July to September 2023](#)

Article | Released 21 November 2023

Labour productivity for Quarter 3 (July to September) 2023 based on data from the gross domestic product (GDP) first quarterly estimate and labour market statistics.

## 9 . Cite this statistical bulletin

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