

Article

UK productivity flash estimate: July to September 2021

Flash estimate of labour productivity for Quarter 3 (July to September) 2021 based on latest data from GDP first quarterly estimate and labour market statistics.

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1 . Main points

- In Quarter 3 (July to Sept) 2021, output per hour worked was 0.5% above levels prior to the coronavirus (COVID-19) pandemic (the 2019 average) despite a 1.2% quarter-on-quarter fall. See [Section 3](#).
- Output per worker was 1.1% below the 2019 average level despite the recent rise of 0.5%. See [Section 4](#).
- For most industry sections, output per hour worked in Quarter 3 2021 was close to pre-coronavirus levels, with some re-allocation of activity away from lower-productivity industries in favour of higher-productivity industries. See [Section 5](#).
- The within-industry productivity growth contribution increased slightly and remained close to pre-pandemic levels, suggesting there does not yet appear to be a long-lasting negative productivity effect of the pandemic.

2 . Latest statistics

The labour productivity flash estimate uses the [latest labour market statistics](#) and the [gross value added \(GVA\) first quarterly estimates](#) to provide the first look at UK productivity for Quarter 3 (July to Sept) 2021. Movements during 2020 and 2021 have been volatile and so estimates are subject to increased uncertainty. As such, and since productivity is a structural feature of the economy, we recommend looking at longer-term trends in productivity growth.

In this release we compare Quarter 3 2021 with the last stable period prior to the coronavirus (COVID-19) pandemic – the 2019 average. These statistics will provide insight into how the economy has changed during the pandemic. Table 1 shows our latest productivity estimates.

Table 1: The latest productivity statistics

Period	Output per hour worked			Output per worker		
	Quarter vs 2019 pre-pandemic levels (%)	Quarter-on-year (%)	Quarter-on-quarter (%)	Quarter vs 2019 pre-pandemic levels (%)	Quarter-on-year (%)	Quarter-on-quarter (%)
2020 Q1	-0.6	-0.2	-1.0	-3.2	-3.1	-2.9
2020 Q2	-2.5	-2.3	-1.9	-21.2	-21.1	-18.6
2020 Q3	5.5	5.3	8.2	-6.7	-7.0	18.4
2020 Q4	1.0	0.6	-4.3	-5.1	-4.9	1.7
2021 Q1	1.6	2.2	0.6	-6.5	-3.4	-1.4
2021 Q2	1.7	4.3	0.1	-1.6	24.8	5.2
2021 Q3	0.5	-4.8	-1.2	-1.1	6.0	0.5

Source: Office for National Statistics – UK productivity flash estimate

In Quarter 3 2021, coronavirus restrictions continued to be lifted, with many being removed in England on 19 July 2021. However, some restrictions persisted, and furlough levels were still over 1 million at the end of Quarter 3 when the Coronavirus job retention scheme (CJRS) ended. As furlough levels fell, hours worked rose. Furloughed workers were more likely to work in lower-productivity industries, so their return reduced whole economy productivity.

Output per hour worked in Quarter 3 was 0.5% above pre-coronavirus levels, falling back by 1.2% compared with the previous quarter. See [Section 3](#) for more information.

Output per worker was 1.1% below pre-coronavirus levels after a 0.5% increase quarter-on-quarter, reflecting the ongoing impact of the CJRS.

The CJRS affects our two productivity measures differently. However, with the unwinding of restrictions, these two measures are becoming more consistent once again – see [Section 4](#).

More about economy, business and jobs

- All ONS analysis, summarised in our [economy, business and jobs roundup](#).
- Explore the latest trends in employment, prices and trade in our [economic dashboard](#).
- View [all economic data](#).

3 . Output per hour worked

In Quarter 3 (July to Sept) 2021, output per hour worked fell back by 1.2% compared with the previous quarter, but was still 0.5% above pre-coronavirus (2019 average) levels, shown in Figure 1. Hours worked and gross value added (GVA) continued to recover towards pre-coronavirus levels following the initial fall in Quarter 2 (Apr to June) 2020.

Total hours worked in the economy increased by 2.5% quarter-on-quarter because of falling furlough levels, but remained 2.4% below pre-coronavirus levels. With the unwinding of restrictions and the return towards normal economic activity, GVA continued to return towards pre-coronavirus levels, now 2.0% lower, with a 1.3% rise quarter-on-quarter.

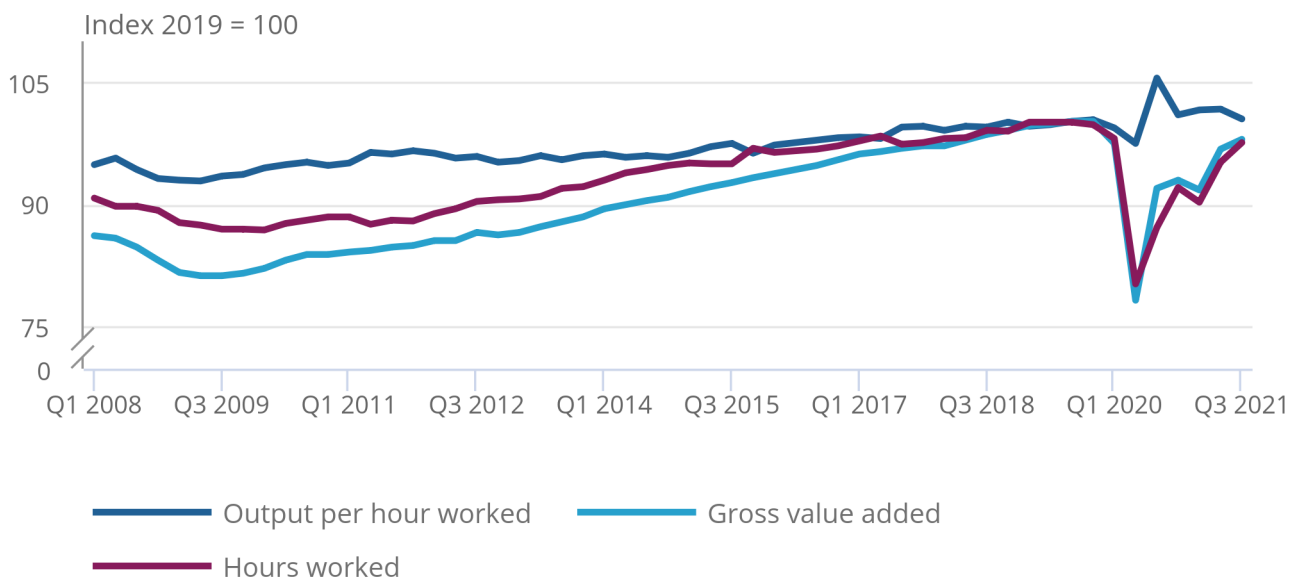
The similar recovery in GVA and hours worked has led to output per hour remaining relatively stable through the pandemic. Since Quarter 3 2020, output per hour worked has remained above pre-coronavirus levels because of positive reallocation effects – see [Section 5](#). However, in Quarter 3 2021, productivity returned towards pre-coronavirus levels, as furloughed workers returning to work were disproportionately in lower-productivity industries.

Figure 1: Output per hour worked was close to pre- coronavirus levels in Quarter 3 2021, now 0.5% above

Output per hour worked, gross value added, hours worked, UK, Quarter 1 (Jan to Mar) 2008 to Quarter 3 (July to Sept) 2021

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Output per hour worked, gross value added, hours worked, UK, Quarter 1 (Jan to Mar) 2008 to Quarter 3 (July to Sept) 2021



Source: Office for National Statistics – UK productivity flash estimate

4 . Output per worker

Productivity can also be measured as output per worker. Historically, output per worker and output per hour worked usually had similar growth rates, because working patterns normally change slowly.

The Coronavirus Job Retention Scheme (CJRS) caused these productivity measures to diverge, because the CJRS sharply reduced hours worked while leaving levels of employment largely unchanged. Furloughed workers work zero hours, but are still counted as workers. When many workers were furloughed in Quarter 2 (Apr to June) 2020, economic output fell sharply and output per worker did too, as shown in Figure 2.

In Quarter 3 (July to Sept) 2021, output per worker was 1.1% below pre-coronavirus levels despite a 0.5% increase quarter-on-quarter. Employment has remained relatively stable throughout the pandemic because of the CJRS, which at the end of Quarter 3 still supported over 1 million furloughed workers.

Gross value added (GVA) continued to recover into Quarter 3, up 1.3% quarter-on-quarter, because of the unwinding of restrictions, with GVA levels now only 2% below pre-coronavirus levels. The CJRS has caused employment to remain closer to pre-coronavirus levels than has GVA, leading to lower output per worker levels.

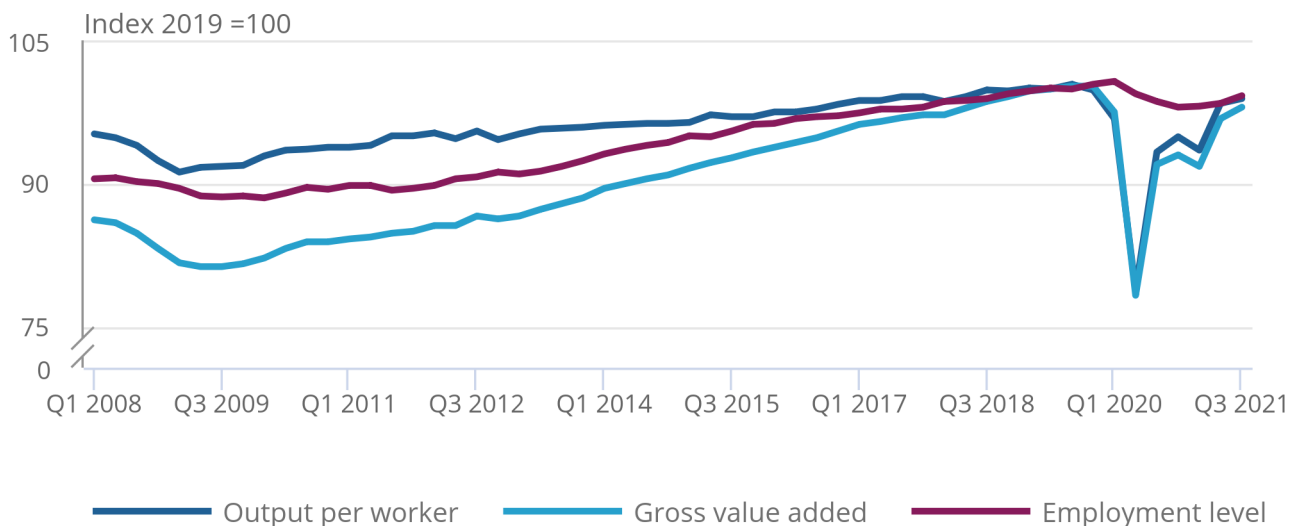
With the ending of the CJRS in September 2021, Quarter 3 2021 is the final quarter affected by furlough so the divergence between output per hour and output per worker should be much smaller from Quarter 4 (Oct to Dec) 2021 onwards.

Figure 2: Output per worker was 1.1% below pre-coronavirus levels in Quarter 3 2021

Output per worker, gross value added, employment, UK, Quarter 1 (Jan to Mar) 2008 to Quarter 3 (July to Sept) 2021

Figure 2: Output per worker was 1.1% below pre-coronavirus levels in Quarter 3 2021

Output per worker, gross value added, employment, UK, Quarter 1 (Jan to Mar) 2008 to Quarter 3 (July to Sept) 2021



Source: Office for National Statistics – UK productivity flash estimate

5 . Output per hour worked by industry

Figure 3 splits the economy into four broad industry categories and shows growth for the level in Quarter 3 (July to Sept) 2021 compared with the average level in 2019. Growth in output per hour worked is decomposed into growth of output (gross value added (GVA)) and growth in hours worked.

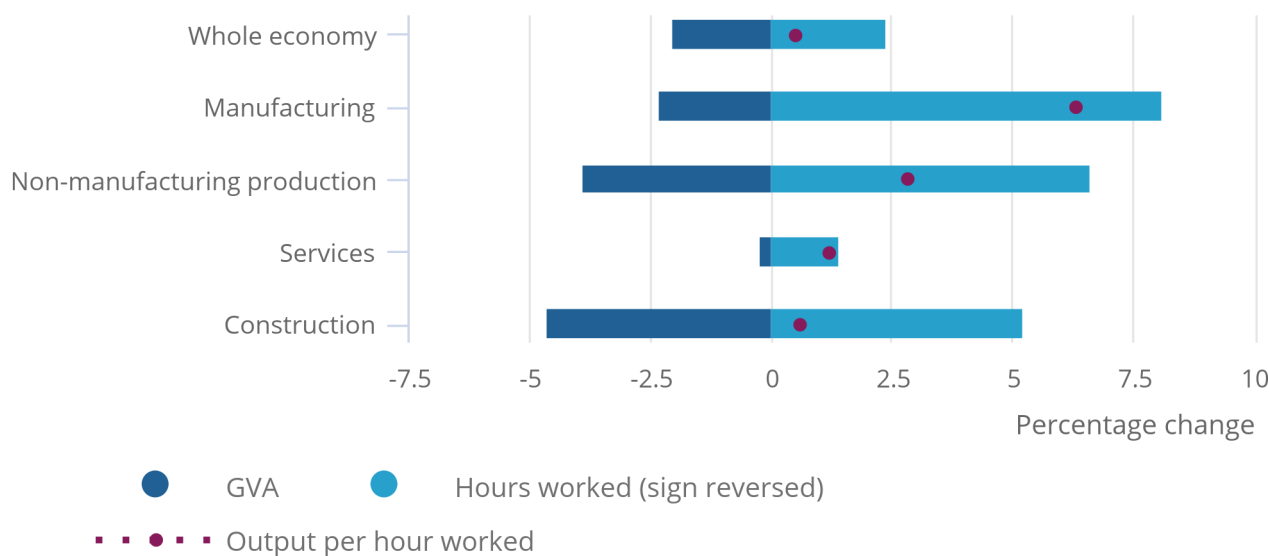
In Quarter 3 2021, all the broadly defined industries saw increases in output per hour worked compared with pre-coronavirus levels. In particular, manufacturing saw a 6.3% increase in output per hour worked, the result of a 2.3% decrease in GVA combined with an even bigger 8.1% decrease in hours worked. The [dataset](#) accompanying this release includes experimental estimates of productivity for a split of the economy into 26 industry sections. Notes on the methodology can be found within the dataset.

Figure 3: Output per hour worked increased in all broadly defined industries

Output per hour worked, hours worked and gross value added, quarter versus 2019 average, percentage change, UK, Quarter 3 (July to Sept) 2021

Figure 3: Output per hour worked increased in all broadly defined industries

Output per hour worked, hours worked and gross value added, quarter versus 2019 average, percentage change, UK, Quarter 3 (July to Sept) 2021



Source: Office for National Statistics – UK productivity flash estimate

Notes:

1. Estimates of 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. Bars are not weighted by size in the economy, so do not represent contributions to growth.

The coronavirus (COVID-19) pandemic has affected every part of the economy, but in different ways and to different extents. Activity was dramatically curtailed in some lower-productivity industries, and higher-productivity industries came to make up a proportionately larger share of the economy. This relative reallocation of economic activity lifted aggregate productivity for the economy as a whole, producing a positive “allocation effect”.

Overall productivity growth in 2020 and 2021, compared with the pre-coronavirus period, was largely because of a positive allocation effect, shown in Figure 4. Within-industry productivity growth was negative through most of the pandemic, reflecting challenges and costs that the pandemic placed on businesses.

In Quarter 3 2021, within-industry productivity increased slightly and boosted overall productivity growth by 0.1 percentage points. This suggests that there does not yet appear to be a long-lasting negative productivity effect of the pandemic. A long-lasting hit to productivity would constitute economic scarring from the pandemic, which could limit future growth prospects.

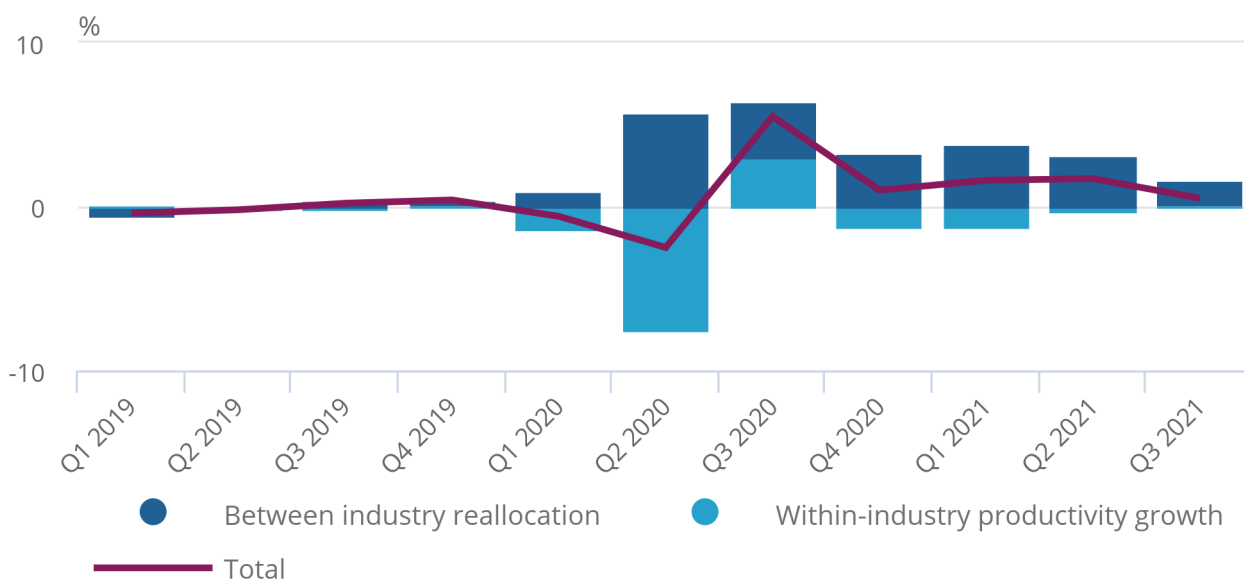
The between-industry reallocation effect for Quarter 3 boosted overall productivity growth by 1.5 percentage points compared with the pre- coronavirus period. This was smaller than in any of the five previous quarters, but still much larger than within-industry productivity growth. This positive reallocation effect is unwinding as the economy reopens, and may reduce further in Quarter 4 (Oct to Dec) 2021 following the end of the furlough scheme.

Figure 4: As furlough unwound, productivity was close to pre-coronavirus levels

Output per hour worked growth, decomposed into between- and within-industry effects, quarter versus 2019 average, percentage, Quarter 1 (Jan to Mar) 2019 to Quarter 3 (July to Sept) 2021

Figure 4: As furlough unwound, productivity was close to pre-coronavirus levels

Output per hour worked growth, decomposed into between- and within-industry effects, quarter versus 2019 average, percentage, Quarter 1 (Jan to Mar) 2019 to Quarter 3 (July to Sept) 2021



Source: Office for National Statistics – UK productivity flash estimate

Notes:

1. The allocation effect is calculated across 17 industry sections. Slightly different results may be obtained depending on the industry granularity entered into the analysis.
2. The allocation effect and growth within industries may not add up to the output per hour total. This is because of the exclusion of the National Accounts balancing value. See our Labour productivity by industry division [dataset](#) for more information.

6 . UK productivity flash estimate data

[Flash productivity by section](#)

Dataset | Published 16 November 2021

Flash estimate of labour productivity by section. The latest data are from the gross domestic product (GDP) first quarterly estimate and labour market statistics.

7 . Glossary

Labour productivity

Labour productivity measures how many units of labour input are 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 sometimes workers or jobs (“productivity jobs”) are also used.

Output

Output is measured by gross value added (GVA) in chained volume measures (CVM), which is an estimate of the volume of goods and services produced for final use by an industry, and in aggregate for the UK, after adjusting for price changes. It is calculated as turnover (sales) minus purchases (intermediate consumption).

Allocation effect

An allocation effect represents changes in the mix of activities in the economy between firms or industries that have various levels of productivity. Resources moving from low to high productivity industries creates a positive allocation effect while movement from high to low productivity industries creates a negative allocation effect.

8 . Data sources and quality

This release uses the first available information on output and labour input for Quarter 3 (July to September) 2021. These data may be revised when we release the more detailed [Productivity Overview](#).

This release uses gross value added (GVA) from the [gross domestic product \(GDP\) first quarterly estimate](#) to determine output. [Labour market data are from the Labour market overview, UK](#). Estimates of the productivity data time series for previous time periods have been revised and therefore may not be consistent with the [Labour productivity](#) National Statistics.

Data in this release are consistent with Blue Book 2021 (BB21), which implements double deflation for the first time. See [Impact of Blue Book 2021 changes on quarterly and monthly volume estimates of gross domestic product by industry](#) for more information about the Blue Book-related changes to GVA and see [Impact of double deflation on labour productivity: 1997 to 2018](#) for more information about changes to our labour productivity estimates because of BB21 changes.

New estimates of GVA are more volatile on a quarterly basis than previously, especially in production industries. This reflects the use of new data and methods, but also [challenges in reconciling quarterly and annual data](#). As productivity is a structural feature of the economy, we continue to advise users to focus on long-term trends of productivity.

At the industry level, the hours worked in each industry are revised in line with the revised whole economy total hours worked. Further revisions will be forthcoming on 14 January 2022 in our Productivity overview, to fully reflect the new Labour Force Survey (LFS) weights in the distribution of hours worked across industries.

9 . Related links

[Productivity overview, UK: April to June 2021](#)

Bulletin | Released 7 October 2021

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

[GDP first quarterly estimate, UK: July to September 2021](#)

Bulletin | Released 11 November 2021

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: November 2021](#)

Bulletin | Released 16 November 2021

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