Office for National Statistics

Article

UK productivity flash estimate: April to June 2021

Flash estimate of labour productivity for Quarter 2 (Apr to June) 2021 based on the latest data from the gross domestic product (GDP) first quarterly estimate and labour market statistics.

Contact:
Jack Bolshaw and Stuart Mackenzie
productivity@ons.gov.uk
+44 1633 455086

Release date:
17 August 2021

Next release:
16 November 2021

Table of contents

1 . Main points

- In Quarter 2 (Apr to June) 2021, output per hour worked was 0.6% above levels prior to the coronavirus (COVID-19) pandemic (the 2019 average), despite a quarter-on-quarter fall.
- Output per hour worked in Quarter 2 (Apr to June) 2021 fell by 0.5% when compared with the previous quarter.
- Output per worker was 2.7% below pre-pandemic levels (the 2019 average) despite the recent rise.
- Output per worker rose by 4.5% when compared with the previous quarter.
- Most broadly defined industry sections experienced output per hour growth compared with pre-pandemic levels.

Productivity estimates use the Labour Force Survey (LFS), among other sources. Improved LFS weighting methodology has been implemented from 15 July, for periods from January to March 2020. See Impact of reweighting on Labour Force Survey key indicators, UK: 2020 for more information. This has led to small revisions in our productivity estimates in 2020 that do not greatly change the overall path observed throughout 2020.

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 2 (Apr to June) 2021. Movements during 2020 and 2021 are volatile and 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 2 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 coronavirus pandemic in a meaningful context. Table 1 shows our latest productivity estimates.

Table 1: The latest productivity statistics, UK, Quarter 1 2020 to Quarter 2 2021

	Output per hour worked			Output per worker		
Period	**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	-0.7	-0.2	-1.1	-3.2	-3.2	-3.1
2020 Q2	-2.5	-2.2	-1.8	-21.2	-21.0	-18.5
2020 Q3	5.1	4.8	7.7	-7.1	-7.5	17.9
2020 Q4	0.8	0.3	-4.1	-5.3	-5.2	1.9
2021 Q1	1.1	1.8	0.4	-6.9	-3.8	-1.7
2021 Q2	0.6	3.1	-0.5	-2.7	23.4	4.5

Source: Office for National Statistics – UK productivity flash estimate

Throughout Quarter 2 2021, the government eased coronavirus restrictions in the UK. Output per hour worked was 0.6% above pre-pandemic levels, despite falling 0.5% compared with the previous quarter. Output per hour worked grew by 3.1% quarter-on-year. For more information see section 3.

Output per worker was 2.7% below pre-pandemic levels, reflecting the ongoing impact of the Coronavirus Job Retention Scheme (CJRS). The CJRS affects our two productivity measures differently, see section 4. As Table 1 shows, output per worker rose 4.5% quarter-on-quarter and 23.4% quarter-on-year.

3 . Output per hour worked

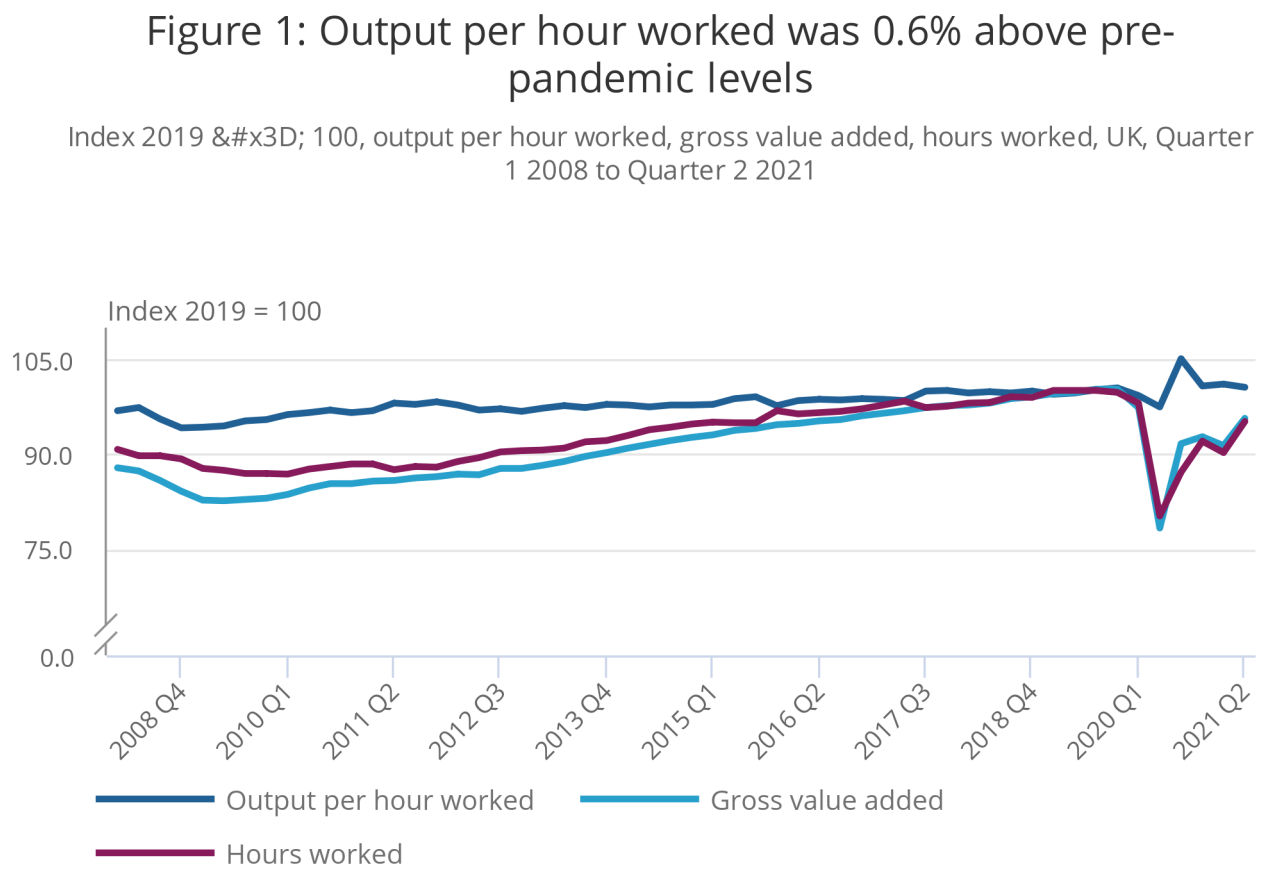
For this and future releases, output per hour worked compared with levels prior to the coronavirus (COVID-19) pandemic will be our preferred measure of productivity. See section 2 for more information. Figure 1 shows how output per hour worked, gross value added (GVA) and hours worked have changed since 2008.

In Quarter 2 (Apr to June) 2021, output per hour worked was 0.6% above pre-pandemic levels. This is because hours worked were 4.8% lower than pre-pandemic levels, while GVA was only 4.3% lower. Although both GVA and hours worked remain below pre-pandemic levels, they have both recovered strongly since their initial falls of 21.6% and 19.7%, respectively, in Quarter 2 2020. Throughout the coronavirus pandemic, hours worked and GVA have followed a similar trend in their recovery, leading output per hour worked to remain relatively stable.

In Quarter 2 2021, output per hour worked fell by 0.5% quarter-on-quarter. This was caused by hours worked rising by 5.4%, which was more than the GVA rise of 4.8% over the same period. This was likely because of the easing of lockdown restrictions across the UK, leading furloughed workers (who are disproportionately employed in less productive industries) to return to work. Output per hour grew by 3.1% quarter-on-year, but this comparison is with the low-point of productivity during the initial effects that the coronavirus pandemic had on the economy.

Figure 1: Output per hour worked was 0.6% above pre-pandemic levels

Index 2019 = 100, output per hour worked, gross value added, hours worked, UK, Quarter 1 2008 to Quarter 2 2021



Source: Office for National Statistics – UK productivity flash estimate

4 . Output per worker

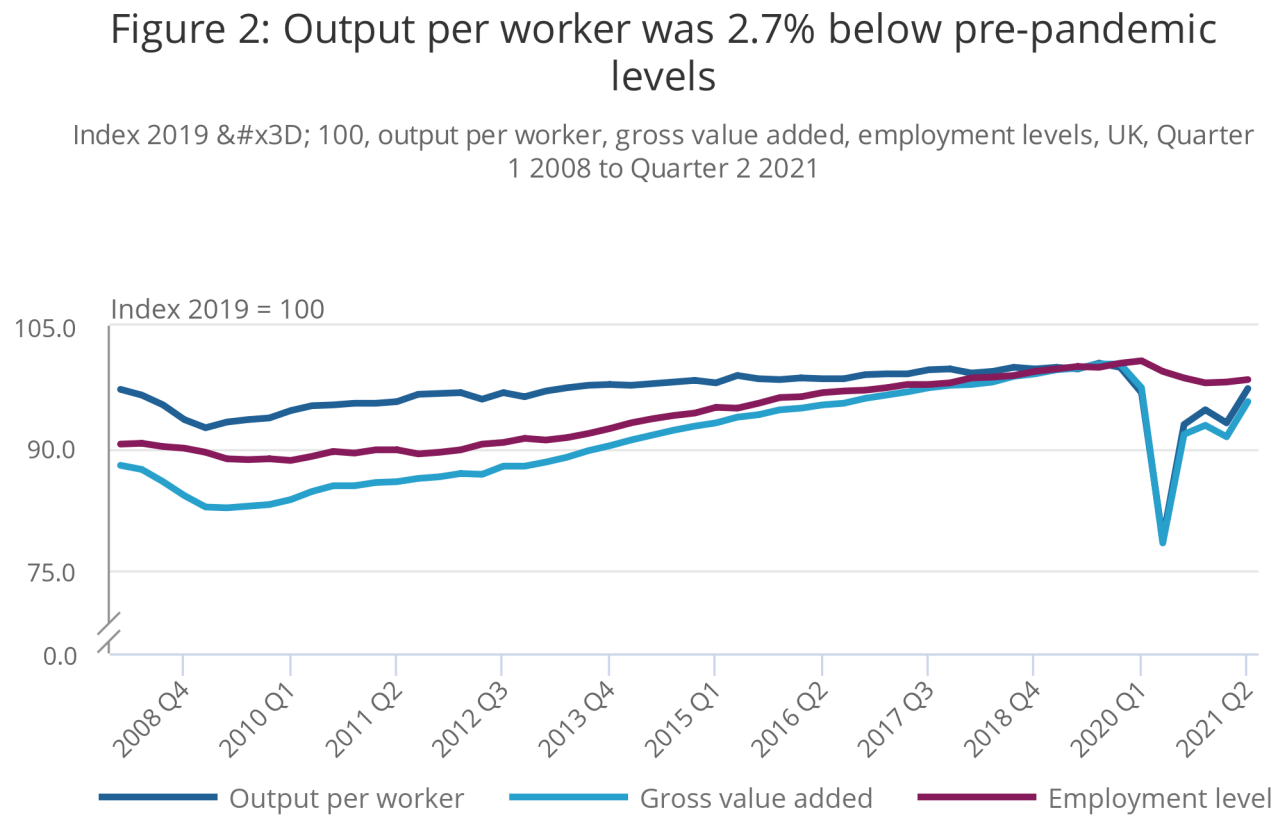
An alternative measure of productivity is output per worker, which historically had similar growth rates to output per hour worked, as normally working patterns change only slowly. The Coronavirus Job Retention Scheme (CJRS) caused rapid changes to hours worked, but not to employment, which caused a divergence between these productivity measures. Furloughed workers work zero hours (total hours worked decreases), but they are still counted as workers (number of workers is unchanged). If total hours worked falls, but the number of workers does not fall, growth in output per hour will be higher than growth in output per worker.

In Quarter 2 (Apr to June) 2021, output per worker was 2.7% below the level prior to the coronavirus (COVID-19) pandemic, largely because the CJRS allowed employment figures to remain relatively stable, only 1.6% below pre-pandemic levels, while gross value added (GVA) was 4.3% below. GVA has continued to recover after a sharp decline in Quarter 2 (Apr to June) 2020. Meanwhile employment has experienced a steady decline between Quarter 2 and 4 (Oct to Dec) 2020, but now seen a slight increase in the last two quarters.

Output per worker grew by 4.5% quarter-on-quarter because of gross value added (GVA) rising by 4.8%, which was more than the employment rise of 0.3% over the same period. The CJRS has caused employment to remain closer to pre-pandemic levels than GVA, leading to lower output per worker levels. Output per worker rose 23.4% quarter-on-year, but this comparison is with the low-point of productivity during the initial effects that the coronavirus pandemic had on the economy.

Figure 2: Output per worker was 2.7% below pre-pandemic levels

Index 2019 = 100, output per worker, gross value added, employment levels, UK, Quarter 1 2008 to Quarter 2 2021



Source: Office for National Statistics – UK productivity flash estimate

5 . Output per hour by industry

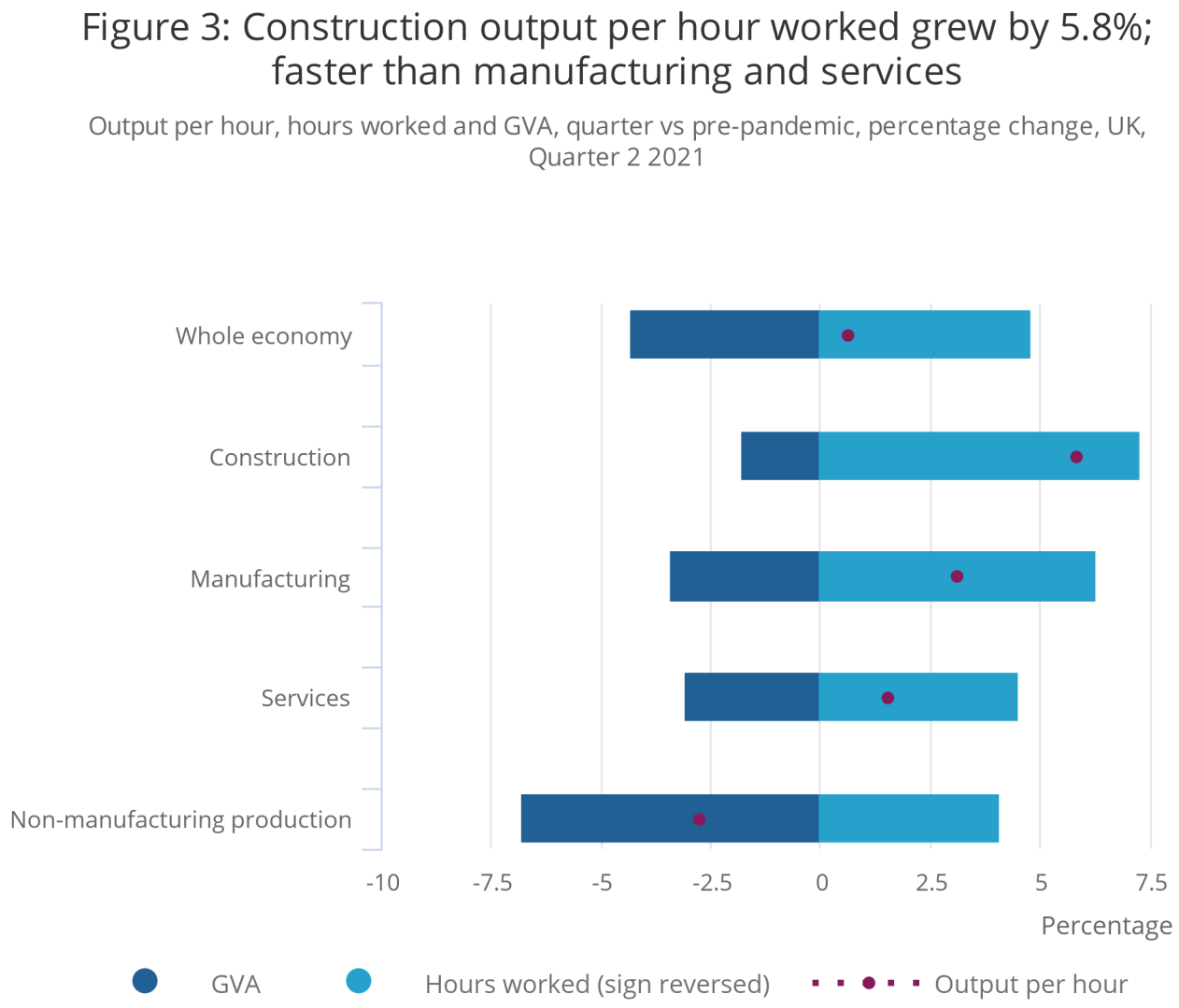
In Quarter 2 (Apr to June) 2021, the construction industry experienced output per hour growth of 5.8% compared with levels prior to the coronavirus (COVID-19) pandemic, which was the largest of all the broadly defined industries in Figure 3. This is because of a 1.8% fall in gross value added (GVA), while hours worked fell by 7.3% over the same period.

Output per hour worked fell by 2.8% compared with pre-pandemic levels in the non-manufacturing production industry, making it the only broadly defined industry to have a productivity decrease. This was caused by GVA falling 6.8% compared with pre-pandemic levels, while hours worked only fell by 4.1%. The mining and quarrying industry was the largest negative contributor in the non-manufacturing production industry.

Figure 3 shows the growth in output per hour worked compared with pre-pandemic levels for broadly defined industries. It breaks this down into the growth of output and hours worked. The Flash productivity dataset accompanying this release breaks down the data by industry, and includes detailed notes on the methodology.

Figure 3: Construction output per hour worked grew by 5.8%; faster than manufacturing and services

Output per hour, hours worked and GVA, quarter vs pre-pandemic, percentage change, UK, Quarter 2 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 represented contributions to growth.

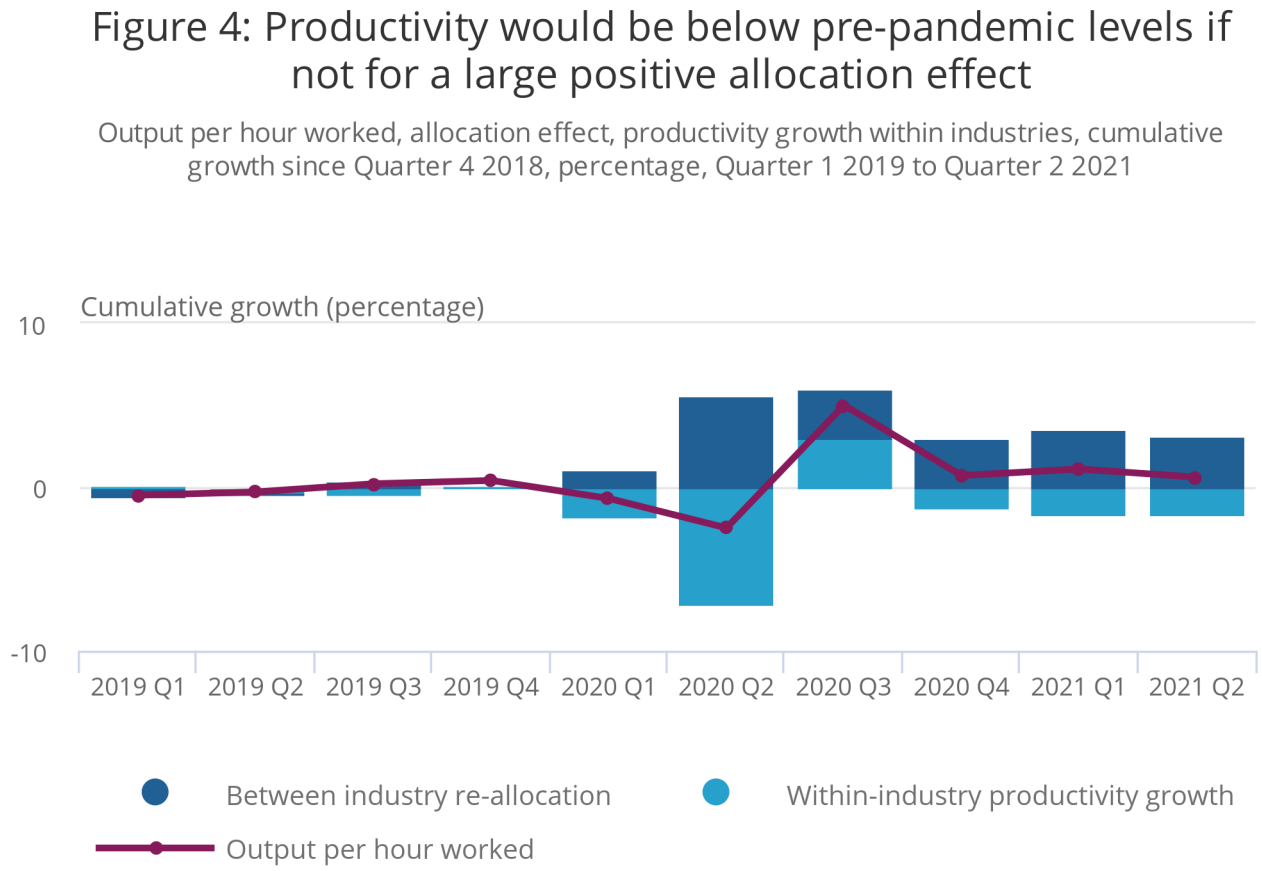
The allocation effect accounts for changes in productivity because of changes in the relative size of industries in the economy. The coronavirus pandemic has led to some less-productive industries shrinking. Meanwhile, more-productive industries now make up a proportionately larger share of the economy. This increases aggregate productivity in the economy.

Productivity growth in 2020 and 2021 was almost entirely because of a positive allocation effect, while within-industry productivity growth was negative through most of the coronavirus pandemic. Figure 4 shows that productivity was 0.6% higher in Quarter 2 (April to June) 2021 compared with the end of 2018, only because of a positive allocation effect of 3.1%. The within-industry productivity growth contributed negative 1.6%. This reflects the challenges and costs that the coronavirus pandemic has placed on business operations, meaning that many industries have experienced a decline in productivity.

If the less productive industries which have been closed during the coronavirus pandemic (such as retail and hospitality) recover their share of the economy in future, then the allocation effect could reverse and drag on aggregate productivity growth. If, however, they remain a permanently smaller share of the UK economy, the positive allocation effects shown in Figure 4 could provide a positive step-change in the level of productivity in the UK.

Figure 4: Productivity would be below pre-pandemic levels if not for a large positive allocation effect

Output per hour worked, allocation effect, productivity growth within industries, cumulative growth since Quarter 4 2018, percentage, Quarter 1 2019 to Quarter 2 2021



Source: Office for National Statistics – UK productivity flash estimate

Notes:

1. 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 division dataset for more information.

6 . UK productivity flash estimate data

Flash productivity by section
Dataset | Published 17 August 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 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 sometimes workers or jobs ("productivity jobs") are also used.

Output

Output is measured by gross value added (GVA) in chained volume measures (CVM). This 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 2 (Apr to June) 2021. These data may be revised when we release the more detailed Productivity economic commentary, UK statistical bulletin.

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: August 2021 statistical bulletin. Estimates of the productivity time series for previous time periods have been revised and therefore may not be consistent with the Labour productivity National Statistics.

We have previously published an implementation plan for adjusting the weighting methodology for the Labour Force Survey, which will better reflect population change during 2020. This release is the first productivity article to be affected by this methodology change. Briefly, the new methodology resulted in a small downward revision to employment in 2020, increasing whole economy productivity slightly.

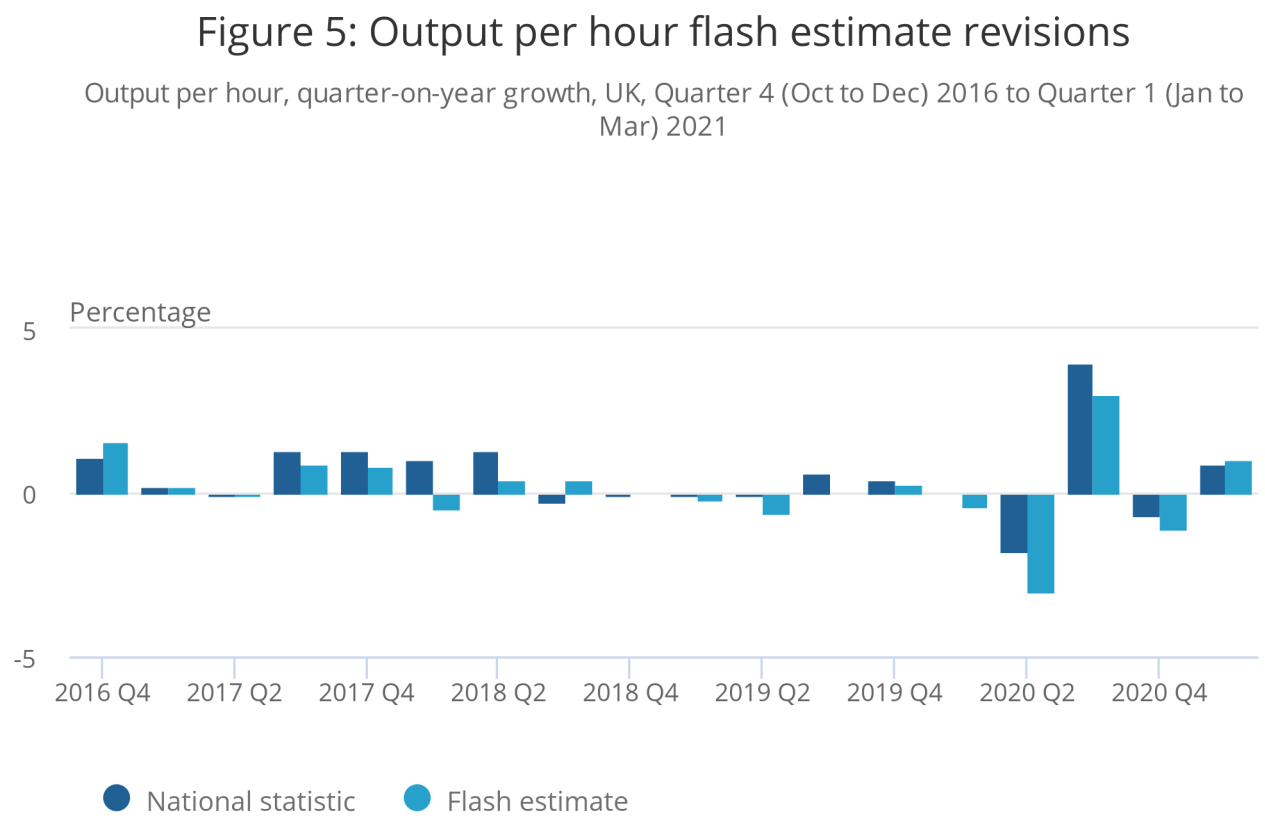
At the industry level, the hours worked in each industry are revised in line with the revised whole economy total hours worked. Further revisions will be forthcoming on 7 October 2021 in our Productivity Economic Commentary, to fully reflect the new Labour Force Survey (LFS) weights in the distribution of hours worked across industries. A separate article (to be released on 9 September 2021) will describe the impact of the LFS methodological changes on labour productivity estimates.

Contributions to growth within and between industries is based on output GVA, but total whole economy output per hour is based on average (balanced) GVA. More information on the difference between the three approaches to GDP can be found in the UK National Accounts - a short guide (PDF, 137KB).

Figure 5 shows revisions to quarter-on-year growth rates when comparing preliminary whole economy flash estimates with the subsequent National Statistic measures of output per hour. In all but two instances, Quarter 1 (Jan to Mar) and Quarter 3 (July to Sept) 2018, our flash estimate has correctly indicated the direction of productivity growth. This gives us confidence that our flash estimate provides an accurate and timely indication of productivity growth.

Figure 5: Output per hour flash estimate revisions

Output per hour, quarter-on-year growth, UK, Quarter 4 (Oct to Dec) 2016 to Quarter 1 (Jan to Mar) 2021



Source: Source: Office for National Statistics – UK productivity flash estimate

9 . Related links

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

GDP first quarterly estimate, UK: April to June 2020
Bulletin | Released 12 August 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: August 2021
Bulletin | Released 17 August 2021
Estimates of employment, unemployment, economic inactivity, and other employment-related statistics for the UK.