Office for National Statistics

Article

Productivity flash estimate and overview, UK: April to June 2024 and January to March 2024

Productivity flash estimates for Quarter 2 (Apr to June) 2024, based on the GDP first quarterly estimate and labour market statistics, and productivity overview for Quarter 1 (Jan to Mar) 2024.

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15 November 2024

Correction

8 October 2024 10:01

In the sub-heading for Figure 3 (Section 3) we wrongly compared to "Quarter 2 (Apr to June) 2023" rather than "Quarter 1 (Jan to Mar) 2023".

We apologise for any inconvenience.

10 October 2024 07:26

We have corrected an error in section 4 in figures 5 and 6. The previous versions used an incorrect indexing for the LFS Output per worker and LFS Output per hour. Figure 5 and 6 have now been updated with the correctly indexed data.

This happened because of a technical fault within the new experimental flash estimates processing system.

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1 . Main points

Flash estimates of labour productivity for Quarter 2 (Apr to June) 2024

- Preliminary estimates based on the Labour Force Survey (LFS) indicate output per hour worked decreased by minus 0.1% in Quarter 2 (Apr to June) 2024 compared with the same quarter a year ago.
- Preliminary estimates of output per worker indicate an increase by 1.1% in Quarter 2 2024 compared with the same quarter a year ago.
- Preliminary estimates of output per hour and output per worker increased by 2.1% and 1.9%, respectively, when compared with pre-coronavirus (COVID-19) pandemic levels (2019 average level).
- The cumulative annual growth rate (CAGR) for output per hour was relatively low at 0.5% between the period of the pre-coronavirus (COVID-19) pandemic (2019 average level) and Quarter 2 2024.

Labour productivity by industry section for Quarter 1 (Jan to Mar) 2024

- The manufacturing industry made the biggest upward contribution to productivity growth and saw the biggest growth in output per hour worked over the last year.

2 . Flash estimates of labour productivity for Quarter 2 2024

Flash estimates using the Labour Force Survey

As reported in our Labour market transformation update, the weighting for the Labour Force Survey (LFS) is being reviewed to reflect the most up-to-date population and migration data.

The results in this article, while consistent with labour market data from our Labour market overview, UK: August 2024 bulletin, should be considered with this, as well as alternative sources of labour market data, in mind.

It should also be noted that, as these latest population estimates may affect the composition of the labour force, there may be corresponding impacts on measures of average hours.

Given these caveats, in Quarter 2 (Apr to June) 2024, output per hour worked, our headline measure of labour productivity, was marginally lower (minus 0.1%) than the same quarter a year ago. Output per hour worked decreased because hours worked increased more (1.0%) than gross value added (GVA) (0.9%) in the same period.

Output per hour worked was 2.1% above its pre-coronavirus (COVID-19) pandemic levels (2019 average level) in Quarter 2 2024. This growth was caused by an increase in GVA of 2.8% since 2019, while the number of hours worked increased by 0.6% over the period, as shown in Table 1. The cumulative annual growth rate (CAGR) for this period was a relatively low (0.5%).

Table 1: Flash estimates of labour productivity
UK, Quarter 2 (Apr to June) 2023 to Quarter 2 (Apr to June) 2024

	Output per hour worked growth rates			Output per worker growth rates		
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 (%)**
2023 Q2	2.2	0.2	0.6	0.8	-0.4	0.1
2023 Q3	3.0	0.5	0.7	0.8	-0.4	0.1
2023 Q4	2.0	-0.3	-0.9	0.3	-0.6	-0.5
2024 Q1	1.8	0.1	-0.2	1.6	0.9	1.3
2024 Q2	2.1	-0.1	0.3	1.9	1.1	0.3

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

Notes

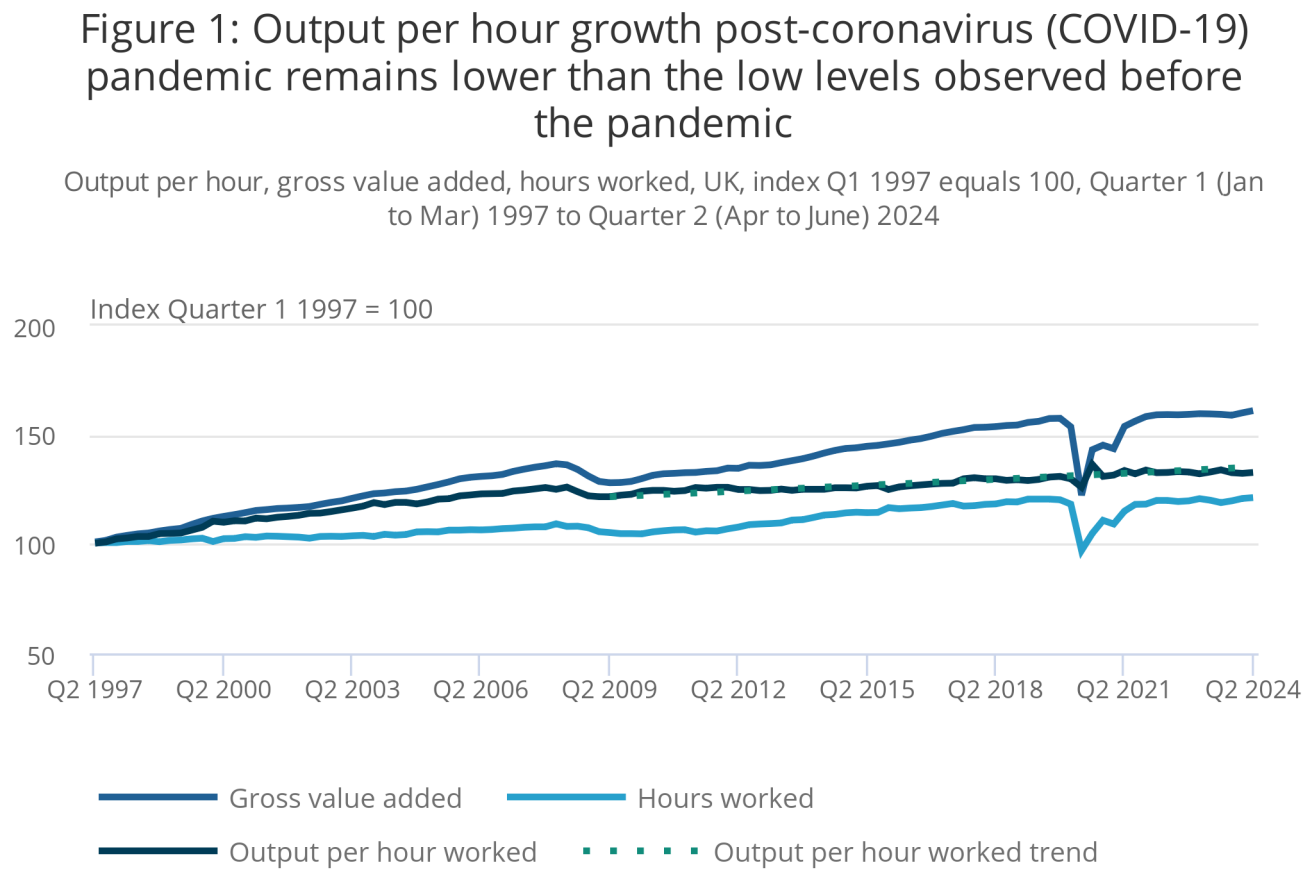
1. Comparisons with pre-coronavirus (COVID-19) pandemic levels use average 2019 levels as the base period.

While the pandemic had a substantial short-term effect on the growth rate of productivity, unlike most "standard" recessions that show a subsequent fall in productivity (such as the financial downturn in 2008 to 2009), the growth rate bounced back to the trend rate.

However, in more recent quarters it has slowed and begun to diverge from the trend extrapolated from the 2009 to 2019 period, as shown in Figure 1. This latter trend was historically weak and recognised as the "productivity puzzle". The recent movements in productivity since the pandemic suggest this underlying weakness in UK productivity growth remains.

Figure 1: Output per hour growth post-coronavirus (COVID-19) pandemic remains lower than the low levels observed before the pandemic

Output per hour, gross value added, hours worked, UK, index Q1 1997 equals 100, Quarter 1 (Jan to Mar) 1997 to Quarter 2 (Apr to June) 2024



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

Notes:

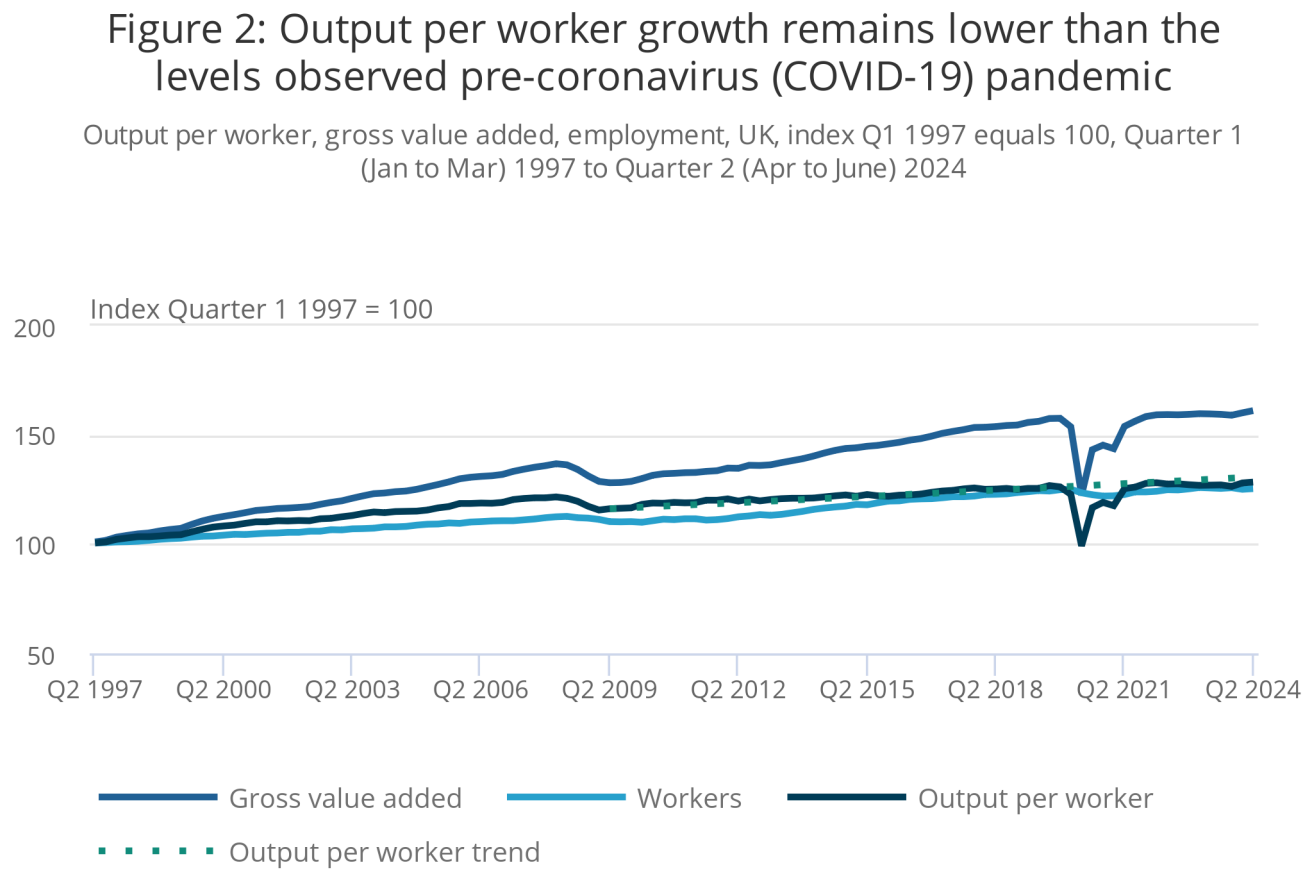
1. The output per hour trendline is constructed by calculating the average growth between Quarter 2 (Apr to June) in 2009 (the GVA low point of the 2008 economic downturn) and Quarter 4 (Oct to Dec) in 2019 (the GVA high point before the coronavirus (COVID-19) pandemic).

Output per worker was 1.1% above its equivalent in Quarter 2 2023, as shown in Figure 2. This is because GVA increased by 0.9%, while the number of workers, as measured by the LFS, fell by minus 0.2%.

Output per worker was 1.9% above its pre-coronavirus level. This was caused by the growth in GVA of 2.8% being higher than the growth in the LFS number of workers of 0.8%.

Figure 2: Output per worker growth remains lower than the levels observed pre-coronavirus (COVID-19) pandemic

Output per worker, gross value added, employment, UK, index Q1 1997 equals 100, Quarter 1 (Jan to Mar) 1997 to Quarter 2 (Apr to June) 2024



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

3 . Labour productivity by industry section for Quarter 1 2024

The contribution to growth in output per hour worked for 19 industries in Quarter 1 (Jan to Mar) 2024, relative to the same quarter a year ago, is shown in Figure 3.

The manufacturing industry made the largest upward contribution to productivity growth over the last four quarters. By contrast, over the same period, the water supply industry made the largest negative contribution to productivity growth. However, estimates for this industry are known to be volatile. The recreation and culture, mining and quarrying, IT, real estate, construction, hotel and catering, and energy sectors did not make any substantive contribution to productivity growth over the same period.

Even if every industry sees zero productivity growth, the whole economy can see growth if higher productivity sectors grow, and weaker productivity sectors shrink. This movement, or "between-industry effect" has made a negative contribution to productivity growth over the past year. This shows that, on average, economic activity tended to shift from industries with higher productivity to industries with lower productivity. This is the second consecutive quarter a negative re-allocation effect has been measured.

Figure 3: The manufacturing industry made the biggest upward contribution to output per hour over the last year

Contribution to growth of output per hour worked, percentage points, relative to Quarter 1 (Jan to Mar) 2023

Notes:

1. Imputed rental is excluded from the real estate industry and the total.

2. The industry contributions may not add up to the total growth in output per hour. This is due to the National Accounts balancing value and the impact of rounding.

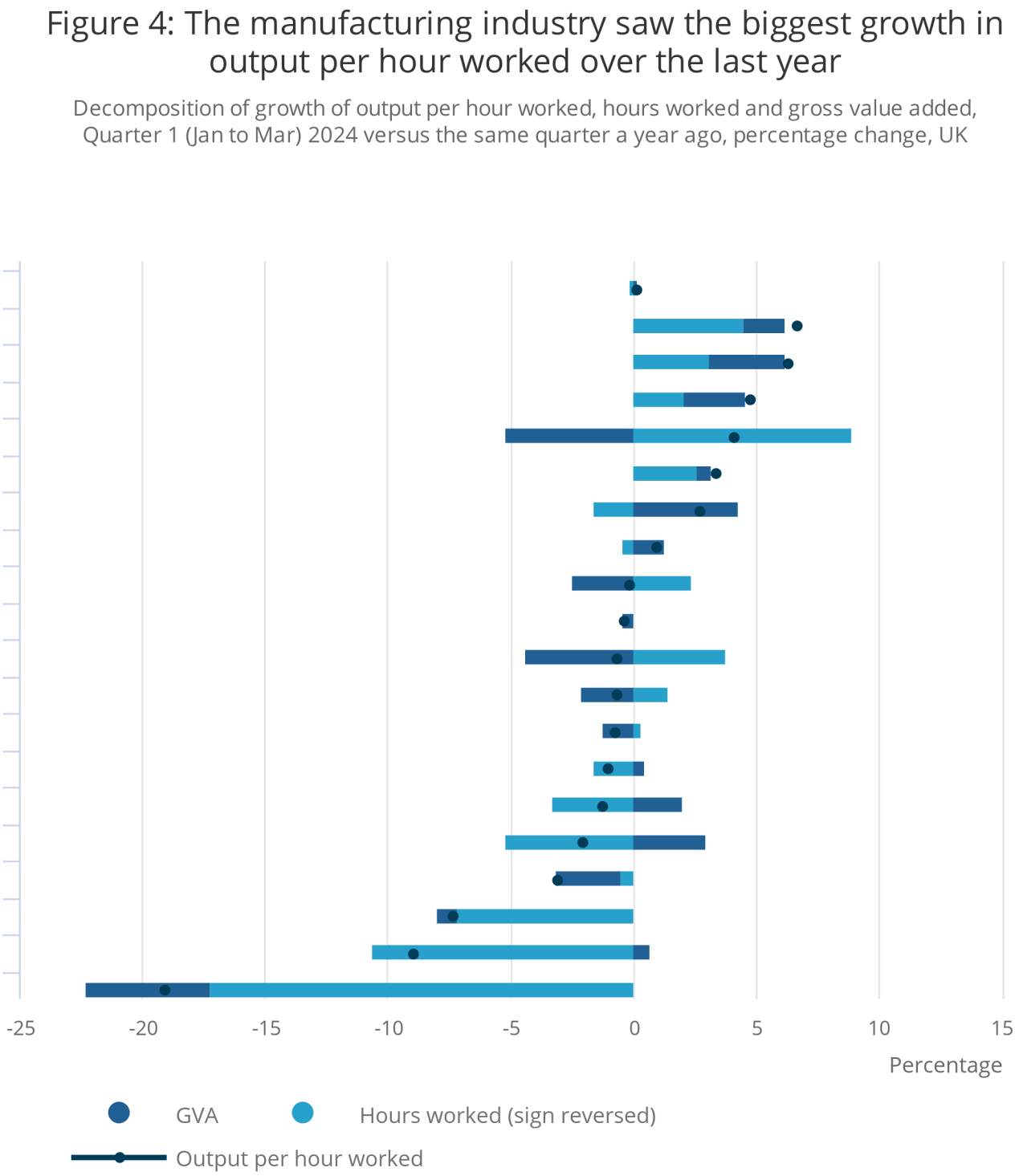
3. "Other services" industry includes: activities of households as employers, undifferentiated goods and services producing activities of households for own use, activities of membership organisations, repair of computers and personal and household goods and a variety of personal service activities not covered elsewhere in ourStandard Industrial Classification (SIC) 2007.

Download the data

The decomposition of growth of output per hour worked is shown in Figure 4. In the manufacturing, transport and storage, and administrative services industries, growth in output per hour worked was caused by an increase in gross value added (GVA) and a decrease in hours worked.

Figure 4: The manufacturing 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 1 (Jan to Mar) 2024 versus the same quarter a year ago, percentage change, UK



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

4 . Experimental flash estimates with different data sources

These are not official statistics and are published as research comparing data sources producing productivity statistics. Users should note the additional assumptions applied to produce comparable estimates, so we advise caution when using the data. These statistics are still in development and we expect changes to occur between now and the next publication.

The Pay As You Earn (PAYE) Real Time Information (RTI) is an estimate of employees on the PAYE scheme from HM Revenue and Customs (HMRC). It does not include those who are employed, but are not part of the scheme or the self-employed.

Therefore, to generate a comparable estimate of total hours worked we add back in the self-employed as estimated by the Labour Force Survey (LFS) EMP01. No adjustment is made for those that are employed but not part of PAYE for example a domestic worker employed directly by a private household.

The addition of LFS self-employed introduces an element of double-counting into the estimates because of self-employed individuals who are employees of their own firm, known as a working proprietor.

Self-employment, generally accounting for around 5% of the total workforce, will be provided by LFS self-employed data, with working proprietors (forming approximately 10% of total self-employed workers) subtracted to avoid any potential double-counting. It should also be noted that Real Time Information (RTI) workers data are available only from Quarter 3 (July to Sept) 2014 onwards.

As the PAYE RTI counts individuals on PAYE, those individuals with two jobs on the PAYE scheme will be counted as one employee. Any individual who has a main job outside of the PAYE scheme, and a second job on the PAYE scheme, will be indistinguishable from a main job.

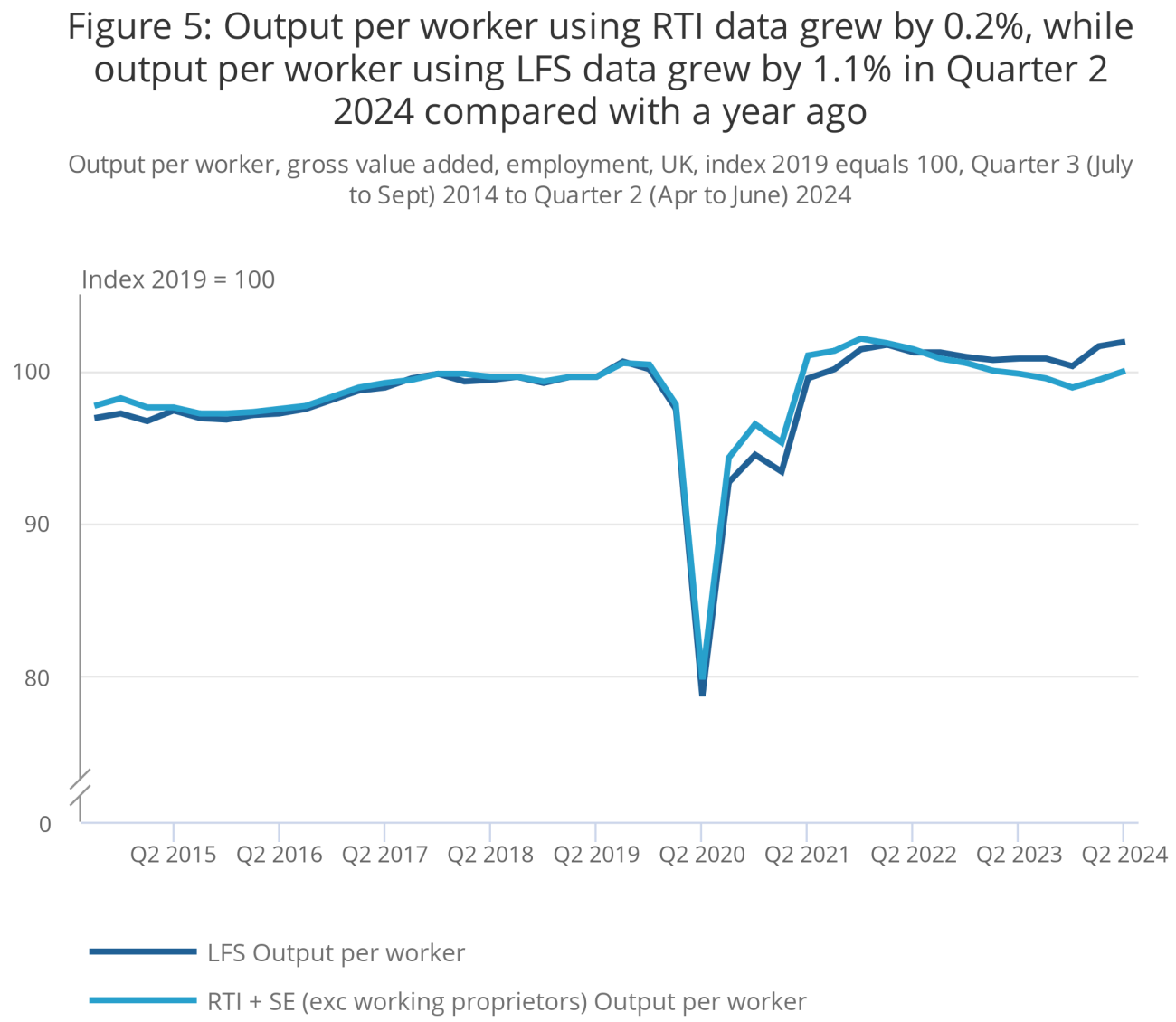
Therefore, the estimate of RTI workers will inherently include both main and second job counts.

Given the introduction of self-employed from LFS, an individual with a main income source of self-employment and a secondary income of employment will be counted as self-employed by the LFS and as an employee by the RTI. It should be noted that this double-count has not been adjusted for.

Quarterly estimates of output per worker shows a divergence between output per worker calculated using the LFS or the RTI series after the coronavirus (COVID-19) pandemic, as seen in figure 5, with the RTI series experiencing a sustained drop from Quarter 4 (Oct to Dec) 2021 onwards. When comparing Quarter 2 (Apr to June) 2024 for each series with the same quarter a year ago, the RTI increased by 0.2%, while the LFS increased by 1.1%.

Figure 5: Output per worker using RTI data grew by 0.2%, while output per worker using LFS data grew by 1.1% in Quarter 2 2024 compared with a year ago

Output per worker, gross value added, employment, UK, index 2019 equals 100, Quarter 3 (July to Sept) 2014 to Quarter 2 (Apr to June) 2024



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

Notes:

1. Real Time Information (RTI) worker estimate supplemented by Labour Force Survey (LFS) Self-employed data.

2. No adjustment is made for those that are employed but not part of Pay As You Earn (PAYE).

3. Any individual who has a main job outside of the PAYE scheme and a second job on the PAYE scheme will be indistinguishable from main job.

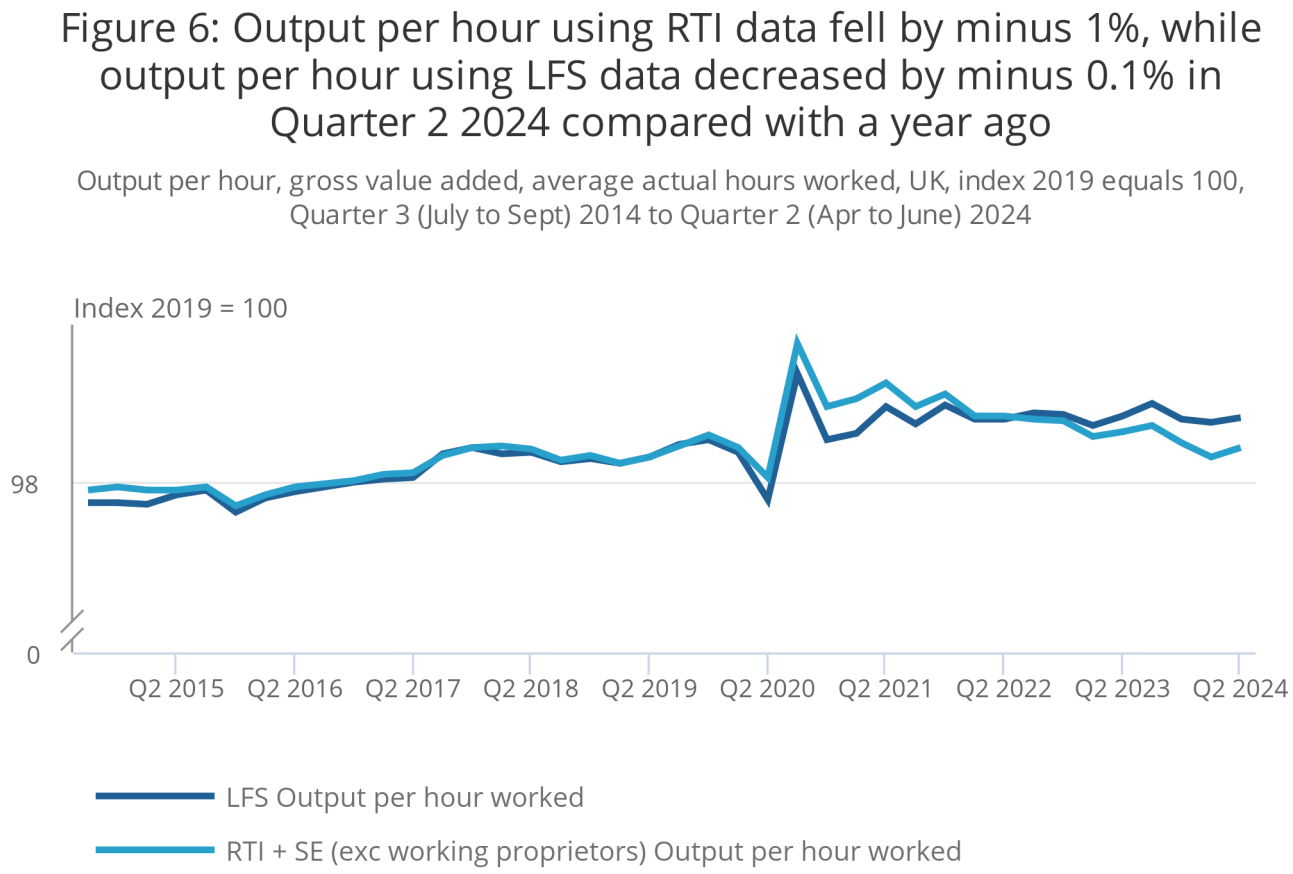
The whole economy hours worked for both the RTI and the LFS is calculated by multiplying LFS average hours worked with the number of workers estimated within the economy, as shown in Figure 5. By varying the data source for workers between the LFS and the RTI, the impact on output per hour can be observed, given the differences in worker counts reported by each source.

Figure 6 compares output per hour calculated using LFS and RTI employment with LFS average hours. A widening gap between LFS and the RTI can be seen starting in Quarter 2 2022. Comparing Quarter 2 2024 for each series with the same quarter a year ago, the output per hour calculated using RTI fell by minus 1%, while output per hour calculated using the LFS saw a smaller decrease of minus 0.1%.

These experimental estimates provide some evidence of alternative trends, with RTI demonstrating a more pronounced decline over the period than estimates resulting purely from the LFS. The two series share similar volatility patterns despite differences in trend growth rates.

Figure 6: Output per hour using RTI data fell by minus 1%, while output per hour using LFS data decreased by minus 0.1% in Quarter 2 2024 compared with a year ago

Output per hour, gross value added, average actual hours worked, UK, index 2019 equals 100, Quarter 3 (July to Sept) 2014 to Quarter 2 (Apr to June) 2024



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

5 . Data on productivity flash estimate overview

Output per hour worked, UK
Dataset | Released 15 August 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 August 2024
Estimates for gross value added (GVA), workers, and output per worker for the whole economy and bespoke industry (market sector). Contains annual and quarterly statistics.

Output per job, UK
Dataset | Released 15 August 2024
Estimates for gross value added (GVA), jobs and output per job for the whole economy and by section industry, as defined by the Standard Industrial Classification (SIC) 2007. Contains annual and quarterly statistics. Contains estimates for industry quarter on quarter, year on year, and quarter on year contributions to output per job.

Labour costs and labour income, UK
Dataset | Released 15 August 2024
Unit labour cost, average labour compensation per hour worked, labour share and unit wage cost for the whole UK economy, and unit wage cost for manufacturing.

6 . Glossary

Gross value added

Gross value added (GVA) is 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.

7 . Data sources and quality

We welcome feedback about our publication changes. To help us meet user needs, please email 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 2 (Apr to June) 2024 in this release use the first available information from our GDP first quarterly estimate bulletin and labour market data from our Labour market overview, UK: August 2024 bulletin . 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 Labour Force Survey (LFS) data up to Quarter 1 (Jan to Mar) 2024.

More information on the differences between flash estimates for Quarter 2 2024 and data for Quarter 1 2024 can be found in our Labour productivity Quality and Methodology Information (QMI). Information on the National Accounts Revisions Policy can be found in our National Accounts Revisions Policy: updated May 2024 methodology. Further information on the Labour Market Revisions 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. Our Labour market overview bulletin reinstated reweighted LFS on 18 July 2024. This bulletin 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.

Productivity data in this release reflect reweighted LFS data consistent with our Labour market overview, UK: August 2024 bulletin. Whole economy estimates of workers are in line with the A05 SA dataset released on 14 May 2024 in our Labour market overview, UK: August 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, 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 HOUR01 SA 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 ourRecent 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.

The Pay As You Earn (PAYE) Real Time Information (RTI) comes from a monthly publication with estimates of payrolled employees and their pay from HM Revenue and Customs' (HMRC's). More information on the methods used to derive monthly employee and earnings estimates from PAYE RTI administrative data can be found in our New methods for monthly earnings and employment estimates from Pay As You Earn Real Time Information (PAYE RTI) data: December 2019 article.

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: April to May 2024
Bulletin | Released 15 August 2024
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 2024
Bulletin | Released 13 August 2024
Estimates of employment, unemployment, economic inactivity, and other employment-related statistics for the UK.

GDP quarterly national accounts, UK: January to March 2024
Bulletin | Released 28 June 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: January to March 2024
Bulletin | Released 15 July 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.

Earnings and employment from Pay As You Earn Real Time Information, UK: July 2024
Bulletin | Released 13 August 2024
Monthly estimates of payrolled employees and their pay from HM Revenue and Customs' (HMRC's) Pay As You Earn (PAYE) Real Time Information (RTI) data. This is a joint release between HMRC and the Office for National Statistics (ONS). These are official statistics in development.

9 . Cite this statistical bulletin

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