Office for National Statistics

Article

Productivity flash estimate and overview, UK: January to March 2025 and October to December 2024

Productivity flash estimates for Quarter 1 (Jan to Mar) 2025, based on the GDP first quarterly estimate and labour market statistics, and productivity overview for Quarter 4 (Oct to Dec) 2024.

Contact:
Productivity team
productivity@ons.gov.uk
+44 1633 582563

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1 . Main points

Flash estimate of labour productivity for Quarter 1 (Jan to Mar) 2025

- Estimates based on the Labour Force Survey (LFS) indicate that output per hour worked in Quarter 1 (Jan to Mar) 2025 was 2.1% higher, compared with pre-coronavirus (COVID-19) pandemic levels (2019 average level), while output per worker was 1.4% higher compared with the same period.

- Estimates produced using experimental methods, incorporating Pay As You Earn (PAYE) Real Time Information (RTI) and LFS data sources, indicate output per hour and output per worker were 2.4% and 1.7% higher, respectively, compared with pre-coronavirus pandemic levels (2019 average level); this suggests there is consistency in trends over the longer term.

Labour productivity by industry section for Quarter 4 (Oct to Dec) 2024

- In comparison with the 2019 (average level), the construction industry made the biggest upward contribution to productivity growth, caused by both an increase in gross value added (GVA) and a decrease in the number of hours worked.

- In comparison with the 2019 (average level), the health industry made the biggest negative contribution to productivity growth, caused by an increase in the number of hours worked.

- In comparison with the 2019 (average level), output per hour growth of the two largest industries, in terms of GVA current prices, was flat for wholesale and retail and slightly positive for manufacturing.

Productivity measures using RTI data are statistics produced using experimental methods and published for comparison purposes. Users should note the added assumptions for these comparable estimates and use caution.

2 . Flash estimate of labour productivity for Quarter 1 2025

Flash estimate using the Labour Force Survey

We have planned continued improvements to the Labour Force Survey (LFS) throughout 2025 and into 2026, once new sub-national population projections are available. The results in this article, while consistent with labour market data from our Labour market overview, UK: May 2025 bulletin, should be considered with this forthcoming revision in mind.

We recommend users place less weight on the quarter-on-year metric for this quarter because the base period Quarter 1 (Jan to Mar) 2024 is affected by low response rates in the LFS. Subsequent periods will benefit from strengthening LFS sample sizes and we will keep users informed of the relative quality of quarter-on-year comparisons. Our Labour Force Survey quality update: May 2025 article provides users with information to better understand the current quality of the data, and guidance on how best to use the data in their analysis.

Following a seasonal adjustment review to our input data, and to our section and division level industry, users should expect revisions to productivity data that affect the back series.

Output per hour worked was 2.1% above its pre-coronavirus (COVID-19) pandemic levels (2019 average level) in Quarter 1 2025, as shown in Table 1. This growth was caused by an increase in gross value added (GVA) of 4.7% and an increase in hours worked by 2.5% over the period.

Output per hour worked was lower (negative 0.2%) in Quarter 1 2025 than in the same quarter a year ago. This is because hours worked increased more than GVA (1.5% and 1.2% respectively).

Table 1: Flash estimate of labour productivity
UK, Quarter 1 (Jan to Mar) 2024 to Quarter 1 2025

	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 (%)**
2024 Q1	2.4	-0.2	0.0	2.1	0.6	1.0
2024 Q2	2.3	-0.5	0.0	2.1	0.7	0.0
2024 Q3	1.1	-2.1	-1.2	1.3	-0.1	-0.8
2024 Q4	1.9	-0.5	0.7	1.1	0.0	-0.2
2025 Q1	2.1	-0.2	0.2	1.4	-0.7	0.4

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

Notes

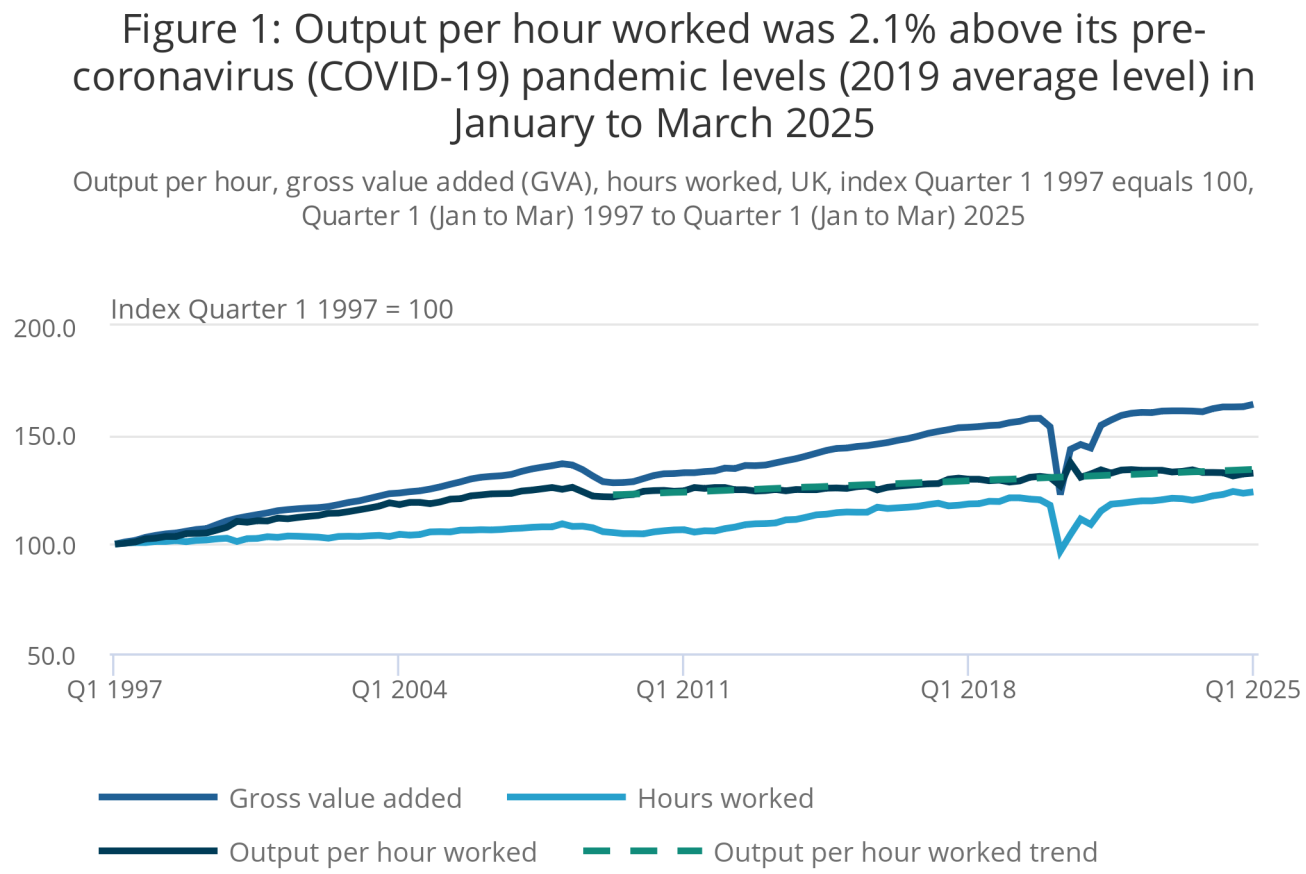
1. Comparisons with pre-coronavirus (COVID-19) pandemic levels use average 2019 levels as the base period.

The coronavirus 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, as shown in Figure 1 and Figure 2. This latter trend was historically weak and described 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 worked was 2.1% above its pre-coronavirus (COVID-19) pandemic levels (2019 average level) in January to March 2025

Output per hour, gross value added (GVA), hours worked, UK, index Quarter 1 1997 equals 100, Quarter 1 (Jan to Mar) 1997 to Quarter 1 (Jan to Mar) 2025



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

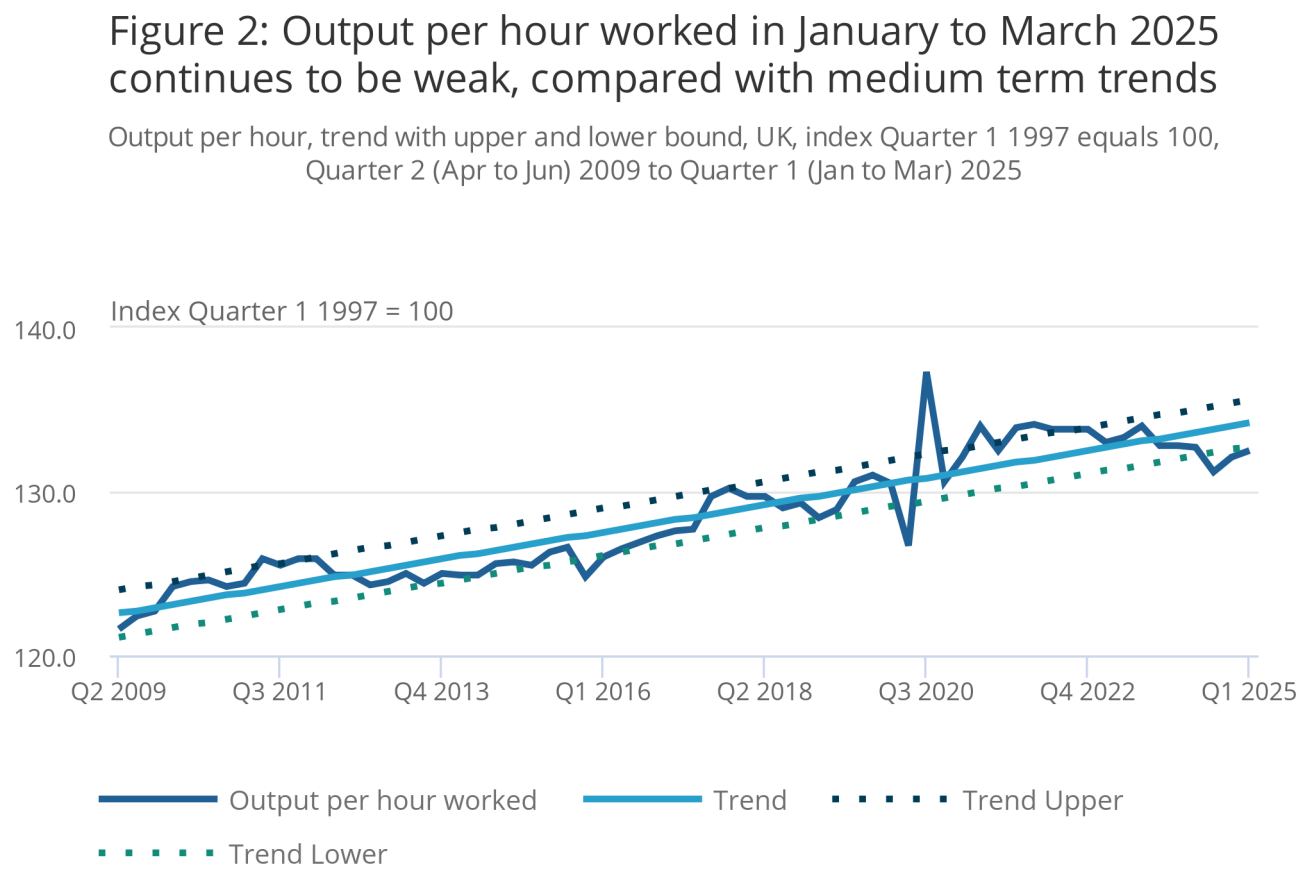
Notes:

1. The output per hour trendline was constructed using a linear regression after using the Cochrane-Orcutt (CO) estimation as described in our article Productivity trends in the UK: July to September 2024. These trendlines are for visualisation purposes only and statistical inference should be treated with caution. These trendlines differ to the compound annual growth rate (CAGR) trendlines published in previous publications

Recognising the break in the trend rate of growth around the time of the global financial crisis in 2008, we have extrapolated the 95% confidence interval around the trend in the period between Quarter 1 2009 and Quarter 1 2025 to contextualise growth. Output per hour worked is outside the lower bound of the 95% confidence interval for the third consecutive quarter. However, it is worth noting that in the period after the pandemic the series also exceeded the upper confidence interval for prolonged periods (up to five quarters), which may imply greater volatility in the series in more recent quarters.

Figure 2: Output per hour worked in January to March 2025 continues to be weak, compared with medium term trends

Output per hour, trend with upper and lower bound, UK, index Quarter 1 1997 equals 100, Quarter 2 (Apr to Jun) 2009 to Quarter 1 (Jan to Mar) 2025



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

Notes:

1. The trendline is constructed as in Figure 1.

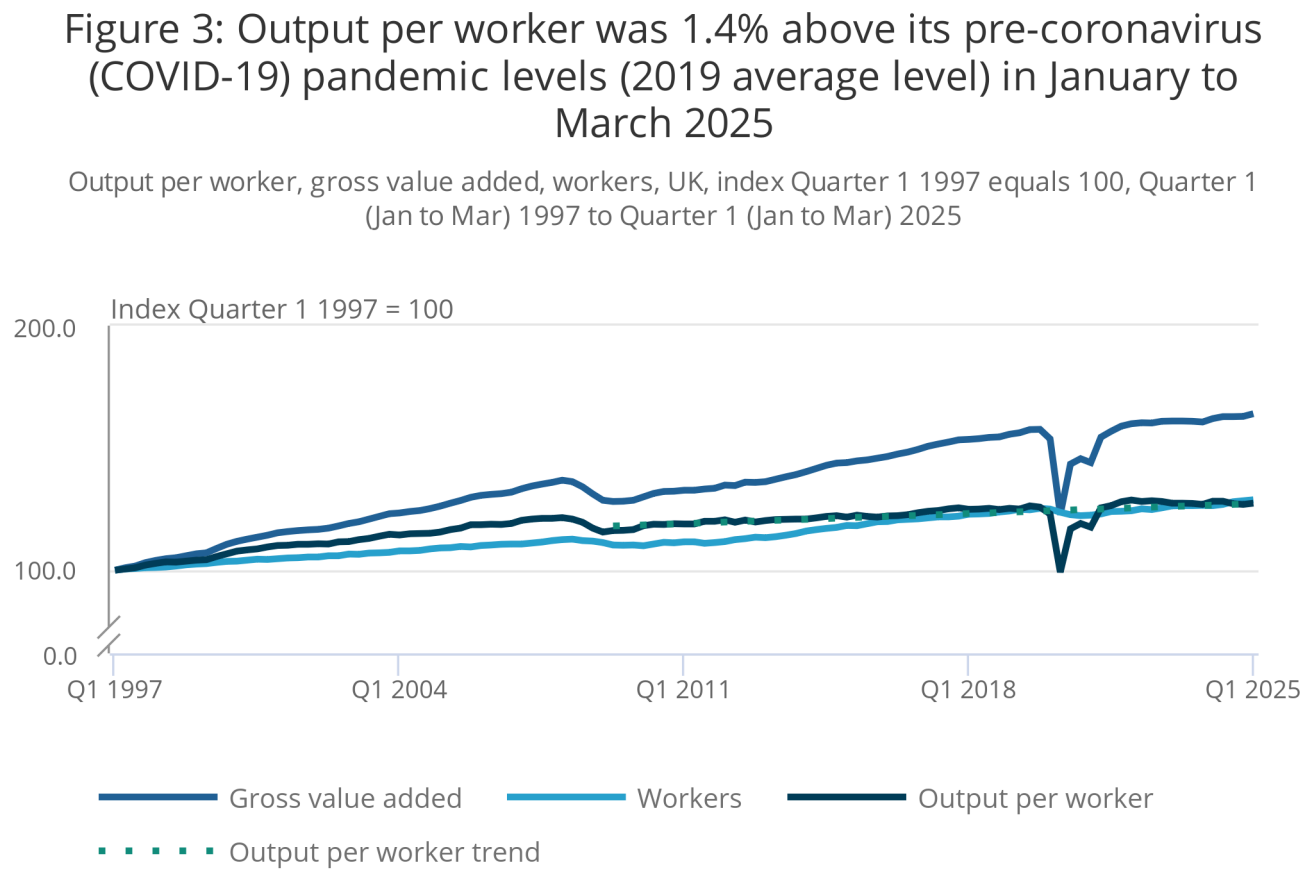
2. For information about how we construct confidence intervals in our figures, see Section 7: Data sources and quality.

Output per worker was 1.4% above its pre-coronavirus pandemic levels (2019 average level) in Quarter 1 2025, as shown in Table 1. This growth was caused by an increase in gross value added (GVA) of 4.7% and an increase in workers by 3.2% over the period.

Output per worker was lower (negative 0.7%) in Quarter 1 2025 than in the same quarter a year ago. This is because the number of workers increased more than GVA (1.9% and 1.2% respectively).

Figure 3: Output per worker was 1.4% above its pre-coronavirus (COVID-19) pandemic levels (2019 average level) in January to March 2025

Output per worker, gross value added, workers, UK, index Quarter 1 1997 equals 100, Quarter 1 (Jan to Mar) 1997 to Quarter 1 (Jan to Mar) 2025



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

Notes:

1. The trendline is constructed as in Figure 1.

3 . Flash estimates, produced using experimental methods, with different data sources

The Pay As You Earn (PAYE) Real Time Information (RTI) published in ourEarnings and employment from Pay As You Earn Real Time Information, UK: May 2025 bulletin 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. Please note that data on RTI workers are available only from Quarter 3 (Oct to Dec) 2014 onwards.

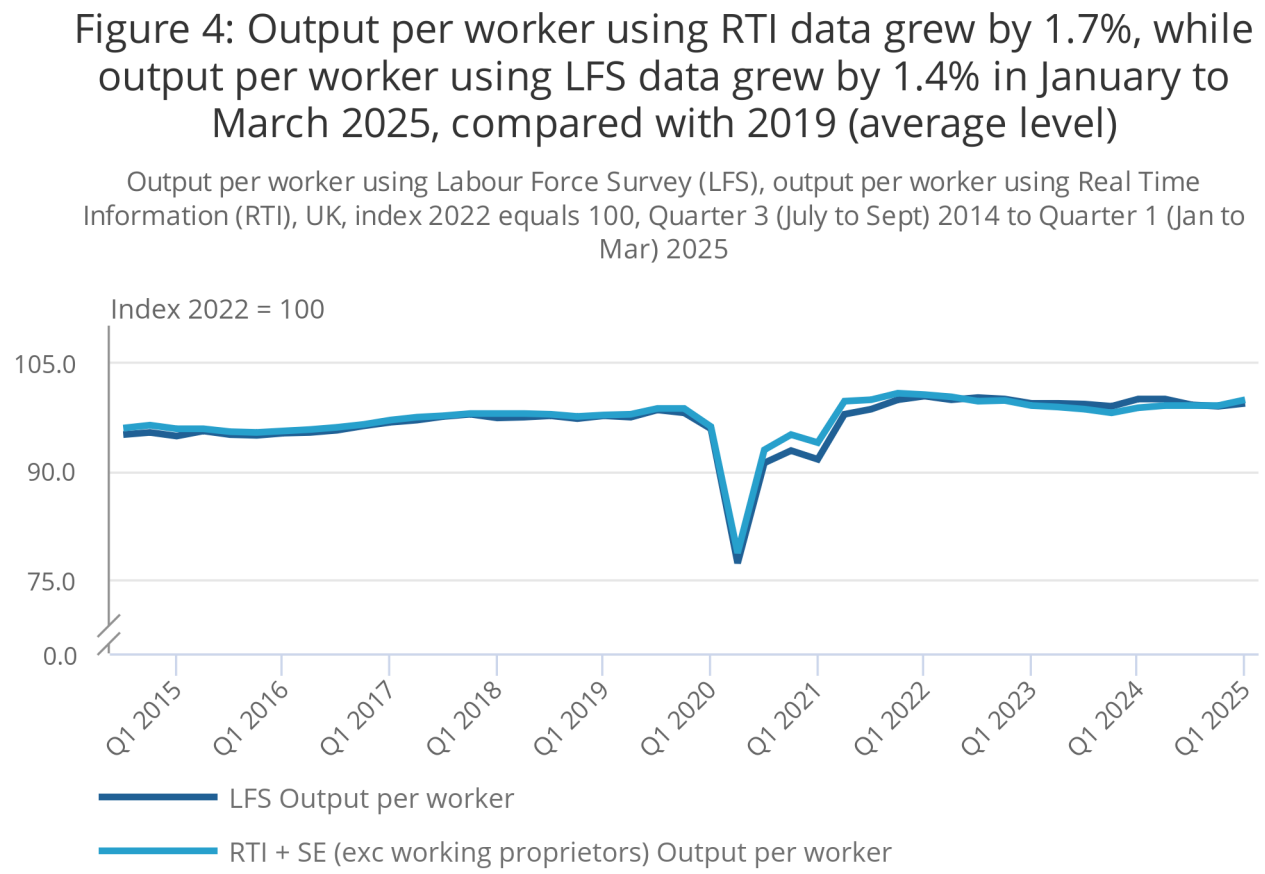
To generate a comparable estimate of total hours worked, we add the self-employed, as estimated by the Labour Force Survey (LFS) and published in ourFull-time, part-time and temporary workers dataset. No adjustment is made for those that are employed but not part of PAYE, for example a domestic worker employed directly by a private household.

The addition of the self-employed from the LFS introduces a risk of double counting. This is because self-employed individuals who are employees of their own firm, known as working proprietors, make up around 10% of total self-employed workers. To address this, we subtract the working proprietors.

PAYE RTI data count individuals who are paid via PAYE by at least one employer. Those individuals with two jobs on the PAYE scheme will only be counted as one worker. Any individual who has a main job outside the PAYE scheme and a second job on the PAYE scheme will be categorised as having only a main job on the PAYE scheme. Given the definition of self-employment in the LFS, an individual whose main income source is "self-employment" and whose secondary income is from "employment" will be counted as self-employed by the LFS and as an employee by the RTI. It should be noted that this double counting has not been adjusted for.

Figure 4: Output per worker using RTI data grew by 1.7%, while output per worker using LFS data grew by 1.4% in January to March 2025, compared with 2019 (average level)

Output per worker using Labour Force Survey (LFS), output per worker using Real Time Information (RTI), UK, index 2022 equals 100, Quarter 3 (July to Sept) 2014 to Quarter 1 (Jan to Mar) 2025



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 categorised as only having a main job.

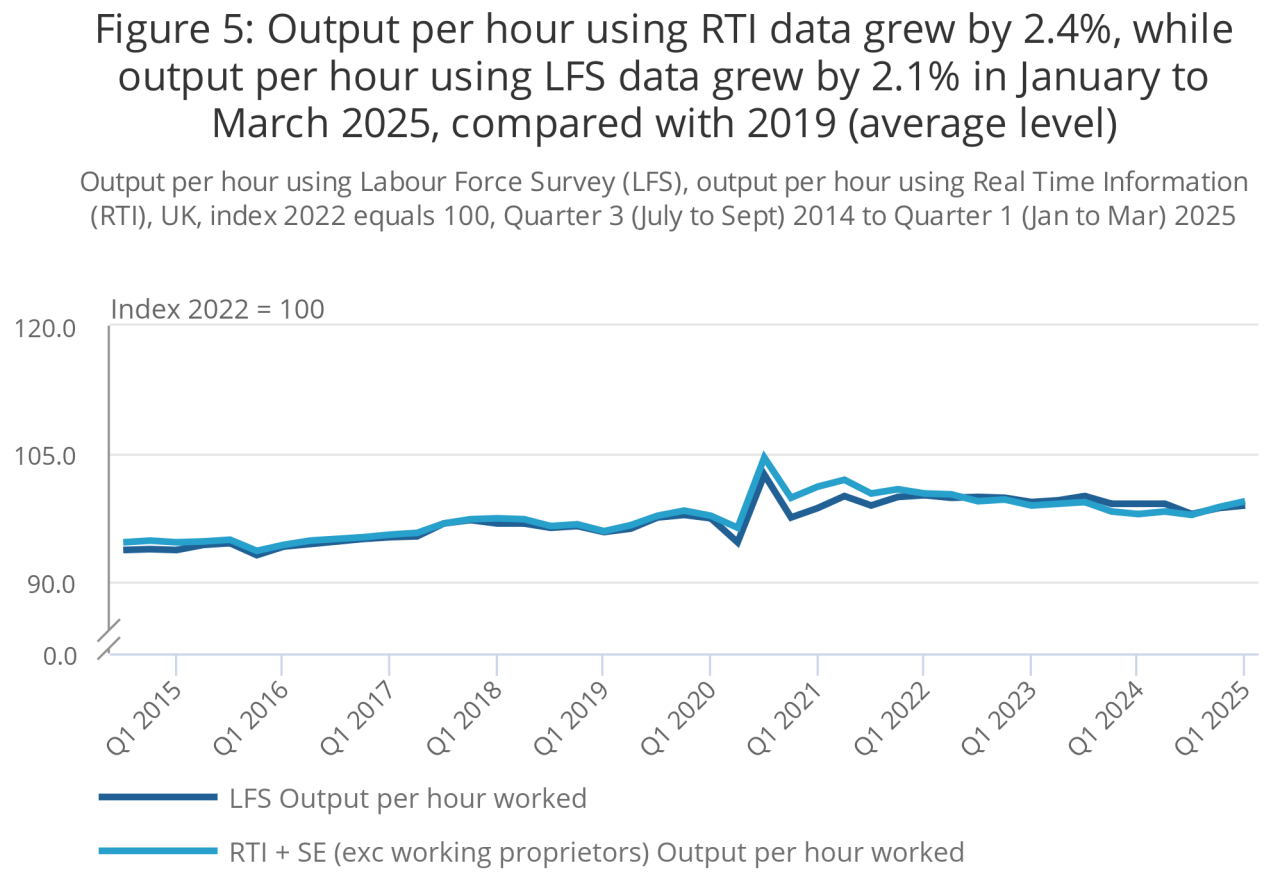
As RTI does not collect actual hours worked, the whole economy hours worked for both the RTI and the LFS is calculated by multiplying LFS average hours worked with the number of workers, as shown in Figure 5. By varying the data source for workers, the impact on output per hour can be observed, given the differences in worker counts reported by each source.

We have seen a convergence between output per hour calculated using the LFS and output per hour calculated using RTI in the tail end of 2024. In the latest quarter we begin to see some minimal divergence between the RTI and LFS sourced estimates.

These estimates provide some evidence of these two series moving around similar underlying trends leading to short-term variations between the two, although the two series share similar volatility patterns. For example, in the latest quarter, the RTI-based measure is demonstrating a more pronounced decline over the period than estimates only from the LFS.

Figure 5: Output per hour using RTI data grew by 2.4%, while output per hour using LFS data grew by 2.1% in January to March 2025, compared with 2019 (average level)

Output per hour using Labour Force Survey (LFS), output per hour using Real Time Information (RTI), UK, index 2022 equals 100, Quarter 3 (July to Sept) 2014 to Quarter 1 (Jan to Mar) 2025



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

4 . Labour productivity by industry section for Quarter 4 2024

Figure 6 shows the contribution to growth in output per hour worked for 19 industries in 2024, relative to the 2019 (average level).

The construction and IT industries made the largest upward contribution to productivity growth in comparison with the 2019 (average level). The health industry made the largest negative contribution to productivity growth over the same period.

Even when every industry experiences zero growth, it is possible for the whole economy to grow if higher productivity sectors grow and weaker productivity sectors shrink. This movement, or "between-industry effect", has made a positive contribution to productivity growth in comparison with the 2019 (average level). This shows that economic activity has shifted from industries with lower productivity to industries with higher productivity on average. However, when comparing quarter-on-year, this is the fifth consecutive quarter that a negative reallocation effect has been measured.

Figure 6: In 2024 the construction industry made the biggest upward contribution to output per hour in comparison with 2019 (average level)

Contribution to growth of output per hour worked, percentage points, 2024 compared with 2019 (average level)

Notes:

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

2. The "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.

3. The relative size of an industry shown is based on the current price (CP) value from 2019 (average level).

Figure 7 shows the decomposition of growth of output per hour worked in the comparison between 2024 and 2019 (average level). In the agriculture industry, growth in output per hour worked was caused by a decrease in the number of hours worked. In the construction industry the growth was caused by a decrease in the number of hours worked and an increase in gross value added (GVA). In the IT and administrative services industries the growth was caused by an increase in gross value added (GVA).

Figure 7: In 2024 the agriculture and construction industries output per hour grew by 18.4% and 16.2% respectively in comparison with 2019

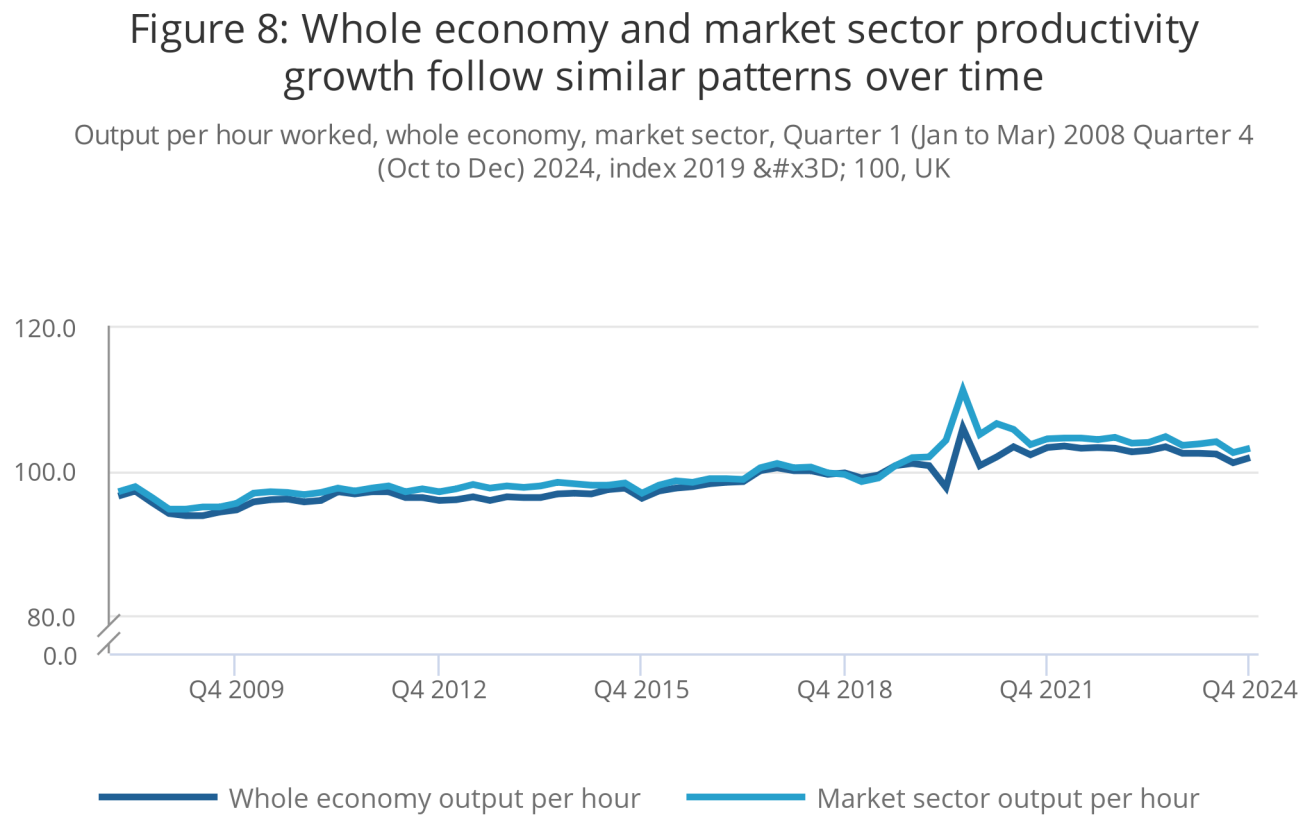
Decomposition of growth of output per hour worked, hours worked and gross value added (GVA), 2024 compared with 2019 (average), percentage change, UK

Figure 8 shows whole economy and market sector labour productivity generally follow similar patterns over time. However, a noticeable divergence occurred around the coronavirus (COVID-19) pandemic period. This reflected both an increase in market productivity and a decrease in non-market productivity. This is consistent with the fall in public service productivity over the same period, as shown in our[Public service productivity, quarterly, UK: October to December 2024 bulletin](#).

Users should note that the definitions of market and non-market do not equate to public services and non-public services. Some public services are provided by the market sector (including imputed rental on owner-occupied housing) and not all non-market activities are public services, including the non-profit institutions serving households (NPISH) sector (charities and universities). In the past three years, the two metrics have closely tracked each other once again, though some of the gap that emerged during the pandemic remains.

Figure 8: Whole economy and market sector productivity growth follow similar patterns over time

Output per hour worked, whole economy, market sector, Quarter 1 (Jan to Mar) 2008 Quarter 4 (Oct to Dec) 2024, index 2019 = 100, UK



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

Notes:

1. The index 2019 = 100 in this figure has been chosen to show how the two series have performed, relative to their pre-coronavirus (COVID-19) pandemic levels.

5 . Data on productivity flash estimate and overview

Output per hour worked, UK
Dataset | Released 15 May 2025
Estimates for gross value added (GVA), hours worked and output per hour worked for whole economy and section level industry, 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 May 2025
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 May 2025
Estimates for gross value added (GVA), jobs and output per job for the whole economy and by section level 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 May 2025
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.

Output per job by division, UK
Dataset | Released 15 May 2025
Estimates for gross value added (GVA), jobs and output per job for bespoke industries and division level industry, as defined by the Standard Industrial Classification (SIC) 2007. Contains annual and quarterly statistics.

Output per hour worked by division, UK
Dataset | Released 15 May 2025
Estimates for gross value added (GVA), hours worked and output per hour worked for bespoke industries and division level industry, as defined by the Standard Industrial Classification (SIC) 2007. Contains annual and quarterly statistics.

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

Information on methods for the labour productivity data, its strengths and limitations, as well as the quality and accuracy of the data, is available in ourLabour productivity Quality and Methodology Information (QMI).

Labour Force Survey reweighting

We published ourLabour Force Survey: planned improvements and its reintroduction methodologyon 2 November 2023. This enabled 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 ourImpact of reweighting on Labour Force Survey key indicators: December 2024 article. Our Labour market overview, UK: November 2024 bulletin reinstated reweighting of the LFS on 18 July 2024. This article uses the latest published reweighted LFS data.

The reweighting exercise has improved the representativeness of our LFS estimates for the period January to March 2019 onwards, reducing potential bias in our estimates.

Productivity data in this release reflect reweighted LFS data consistent with ourLabour market overview, UK: May 2025 bulletin.Whole-economy estimates of workers are in line with our Employment, unemployment and economic inactivity by age group datasetreleased inourLabour market overview, UK: May 2025 bulletin.

Whole-economy estimates of second jobs and total hours have been adjusted back to mid-2011. This will ensure that headline productivity statistics can be assessed without a discontinuity, for the purposes of the productivity estimates; they are not part of the labour market release. Therefore, the adjusted productivity jobs and the adjusted productivity hours worked diverge slightly from the estimates in ourFull-time, part-time and temporary workers dataset and ourActual weekly hours worked datasetfrom 2011 to 2022.

Imputed rental is excluded from "Industry L: real estate". 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 and the 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 our monthly Earnings and employment from Pay As You Earn Real Time Information, UK bulletin, with estimates of payrolled employees and their pay from HM Revenue and Customs (HMRC). More information on the methods used to derive monthly employee and earnings estimates from PAYE RTI administrative data can be found in ourNew methods for monthly earnings and employment estimates from PAYE RTI data: December 2019 article.

To help us meet user needs, please emailproductivity@ons.gov.ukwith any feedback about our publication changes.

Trendlines and confidence intervals

We construct the 95% confidence intervals around the trendlines in our figures by first calculating the standard error (SE) by dividing the standard deviation of residuals by the square root of the number of periods. Then, we determine the critical value corresponding to the 95% confidence level (1.96) and multiply it by the SE. Finally, we use this value to create the interval by adding and subtracting the result from the predicted trendline value at each point, providing the upper and lower bounds of the confidence interval.

We have now updated our trendlines, based on research we published in ourProductivity trends in the UK: July to September 2024 article. Please emailproductivity@ons.gov.ukwith your comments and views.

Accredited official statistics

Our gross valued added (GVA) estimates are accredited official statistics. These accredited official statistics were independently reviewed by the Office for Statistics Regulation in March 2015. They comply with the standards of trustworthiness, quality, and value in the Code of Practice for Statisticsand should be labelled "accredited official statistics".

Official statistics in development

The labour market and productivity statistics in this article are labelled as "official statistics in development". Until October 2023, these were called "experimental statistics". Read more about the change in ourGuide to official statistics in development.

8 . Related links

GDP first quarterly estimate, UK: January to March 2025
Bulletin | Released 15 May 2025
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: May 2025
Bulletin |Released 13 May 2025
Estimates of employment, unemployment, economic inactivity, and other employment-related statistics for the UK.

GDP quarterly national accounts, UK: October to December 2024
Bulletin | Released 28 March 2025
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.

Earnings and employment from Pay As You Earn Real Time Information, UK: May 2025
Bulletin | Released 13 May 2025
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.

Public service productivity, quarterly, UK: October to December 2024
Bulletin | Released 8 May 2025
UK total public service and healthcare productivity, inputs, and output, to provide a short-term, timely indicator of annual productivity estimates. These are official statistics in development.

9 . Cite this statistical bulletin

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