Office for National Statistics

Statistical bulletin

Labour productivity, UK: January to March 2019

Output per hour, output per job and output per worker for the whole economy and a range of industries.

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Next release:
8 October 2019

Notice

5 July 2019

The ONS has changed the content of the quarterly labour productivity release. Data and commentary associated with labour productivity will be presented differently from 5 July 2019. More information can be found in Improving the presentation of the labour productivity release: July 2019 article.

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1 . Main points

- Labour productivity for Quarter 1 (Jan to Mar) 2019, as measured by output per hour, decreased by 0.2% compared with the same quarter in the previous year; this was a marginally greater quarter-on-year decrease than the negative 0.1% seen in Quarter 4 (Oct to Dec) 2018.
- Services recorded labour productivity growth of 0.2% compared with the same quarter in the previous year; in contrast, labour productivity growth fell in manufacturing by 0.9% during the same period.
- Output per job grew by 0.8% in Quarter 1 (Jan to Mar) 2019 compared with the same quarter in the previous year, as gross value added (GVA) grew faster (1.8%) than the number of jobs over the same period (1.0%).
- Commentary for unit labour costs are now available in the Unit labour costs bulletin, published on the same day (5 July 2019).

2 . Analysis of labour productivity growth

Labour productivity, as measured on an output per hour basis, decreased by 0.2% compared with Quarter 1 (Jan to Mar) 2018. This is the third consecutive quarter of contraction. In contrast, output per job increased by 0.8% in the same period, as gross value added (GVA) grew faster than the number of jobs in the economy, at 1.8% and 1.1% respectively.

This sustained period of declining labour productivity represents a continuation of the UK's "productivity puzzle", with productivity since the economic downturn in 2008 growing more slowly than during the long period prior to downturn. Despite occasional periods of growth, this sustained general pattern of stagnation contrasts with patterns following previous UK economic downturns, when productivity initially fell, but subsequently recovered in a relatively sustained fashion while returning to the previous trend rate of growth. We will be presenting a summary of the puzzle and analysis that has been undertaken to explain this.

The puzzle is persistent in both productivity measures of output per hour and output per job. Figure 1 shows output per hour growth rates compared with the same quarter in the previous year, noting the 25th, 50th and 75th percentiles of growth. These percentiles indicate the percentage of observations where the growth rates of each quarter were beneath a specified point.

Comparing the two periods, the median average – 50th percentile – of the post-downturn period is one-third of what it was in the pre-downturn period. The weak growth means the performance of the pre-downturn 25th percentile is in broad alignment with the post-downturn 75th percentile. In other words, three-quarters of productivity output per hour growth since the downturn remains lower than the bottom quarter of productivity growth rates in the pre-downturn period, illustrating the sustained nature of weak performance in the UK economy.

Noticeably in the post-downturn period, as shown by the 25th percentile, one-quarter of output per hour growth rate estimates fell below negative 0.2%, when compared with the same quarter a year ago. These are broadly clustered in three time periods: Quarter 2 (Apr to June) 2012 to Quarter 3 (Jul to Sept) 2013, Quarter 4 (Oct to Dec) 2015 to Quarter 3 (July to Sept) 2016, and Quarter 3 2018 to the present. The appearance of these "mini-cycles" in the data is something we continue to explore.

Figure 1: Output per hour decreased by 0.2% from same quarter a year ago, the third consecutive quarter of negative growth

Output per hour, quarter on same quarter a year ago log growth rates, seasonally adjusted, Quarter 1 (Jan to Mar) 1998 to Quarter 1 (Jan to Mar) 2019, UK

Data download

Source: Office for National Statistics

Notes:

1. Percentiles are measurements which indicate the percentage of observations beneath a specified point. The 25th percentile is the value below which 25% of the observations reside.

2. Growth is measured as percentage log changes. Please see section 6 for further information.

Figure 2 presents output per job growth rates compared with the same quarter in the previous year.

Since the downturn, one-quarter of the recorded output per job quarter-on-year growth rates are beneath 0.1% growth. Comparing the post-downturn median average with the pre-downturn counterpart has similar results to that found for output per hour, where output per job post-downturn median growth is one-third of what it was in the pre-downturn period. Output per job delivers results that show the highest recorded growth rate for output per job in the post-downturn period, which fails to reach the median average of the pre-downturn period; the best of the last decade is no better than the average of the decade before.

However, the differences between the 25th and 75th percentiles remain unchanged at 1.1 percentage points during both the pre- and post-downturn periods, and the “mini-cycles” in the output per hour data are not so easily observable, given there are far fewer instances of negative growth in these data.

Figure 2: Output per job increased by 0.8% from same quarter a year ago, the eleventh quarter of positive or null growth

Output per job, quarter on same quarter a year ago log growth rates, seasonally adjusted,Quarter 1 (Jan to Mar) 1998 to Quarter 1 (Jan to Mar) 2019, UK

Data download

Source: Office for National Statistics

Notes:

1. Percentiles are measurements which indicate the percentage of observations beneath a specified point. The 25th percentile is the value below which 25% of the observations reside.

2. Growth is measured as percentage log changes. Please see section 6 for further information.

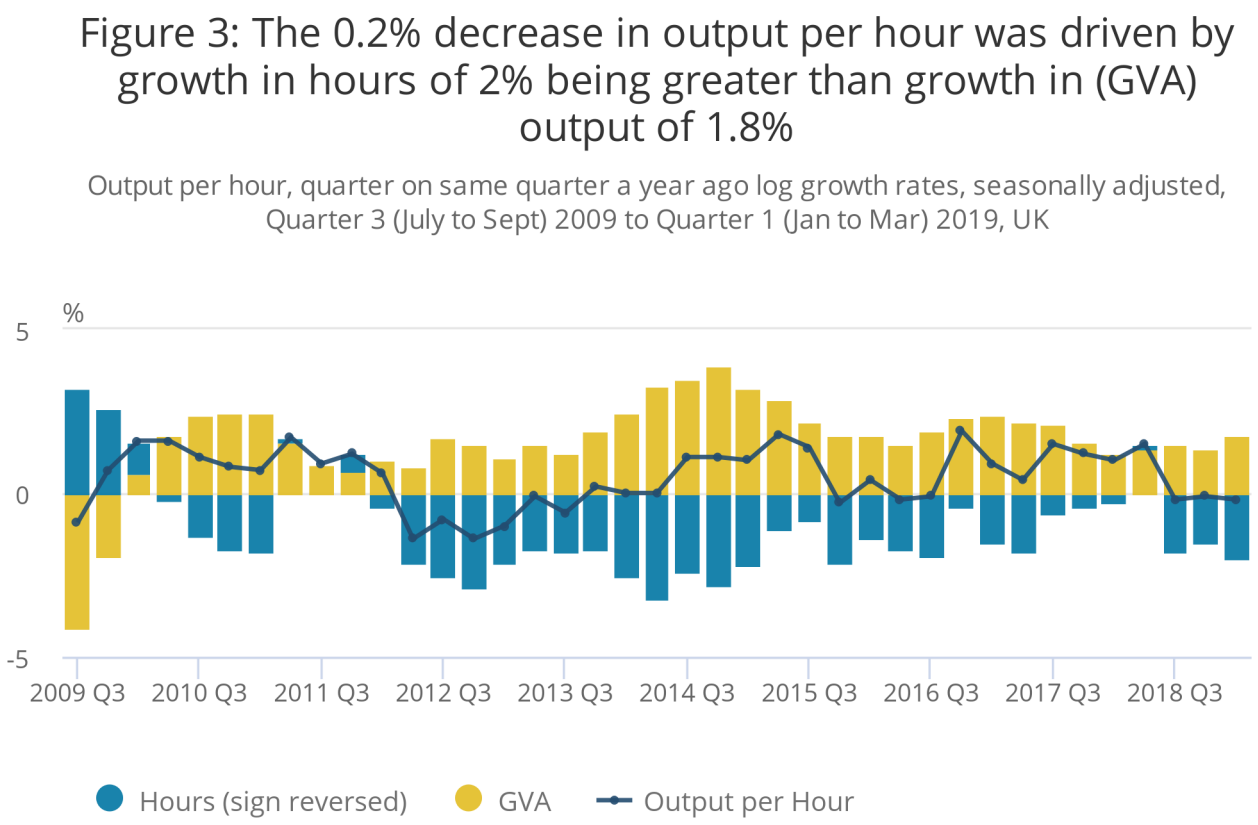
Figure 3 breaks down the quarter-on-year growth in productivity from Quarter 3 2009 comparing the split of hours, which have had the sign reversed to reflect their effect on productivity, and gross value added (GVA). Since the downturn, quarter-on-year growth in GVA averaged 1.6%, slightly higher than the average growth rate of hours worked of 1.2%. As a result, productivity has seen weak growth, averaging 0.5%, with brief instances of high growth most noticeably in the initial post-downturn years.

Subsequent years experienced a slump in productivity recording consecutive negative growth between the period of Quarter 2 2012 to Quarter 3 2013. Since the end of this period, productivity remained somewhat weak, having brief instances of high growth in Quarter 2 2015 and Quarter 4 2016. The latter was the highest quarter-on-year growth recorded since the downturn.

Productivity continued to grow, experiencing consecutive periods of growth until Quarter 2 2018, while in the latest three periods it recorded consecutive quarters of negative growth. The fall in output per hour growth was driven by a fall in manufacturing output per hour of 0.9%, which was partially offset by a 0.2% increase in services.

Figure 3: The 0.2% decrease in output per hour was driven by growth in hours of 2% being greater than growth in (GVA) output of 1.8%

Output per hour, quarter on same quarter a year ago log growth rates, seasonally adjusted, Quarter 3 (July to Sept) 2009 to Quarter 1 (Jan to Mar) 2019, UK



Source: Office for National Statistics

Notes:

1. Estimates of hours worked have had their sign reversed to reflect how they affect output per hour. An increase in hours worked will contribute negatively to output per hour; while a decrease in hours worked will contribute positively to output per hour.

2. Growth is measured as percentage log changes. Please see section 6 for further information.

3 . Analysis of output per hour in services and manufacturing

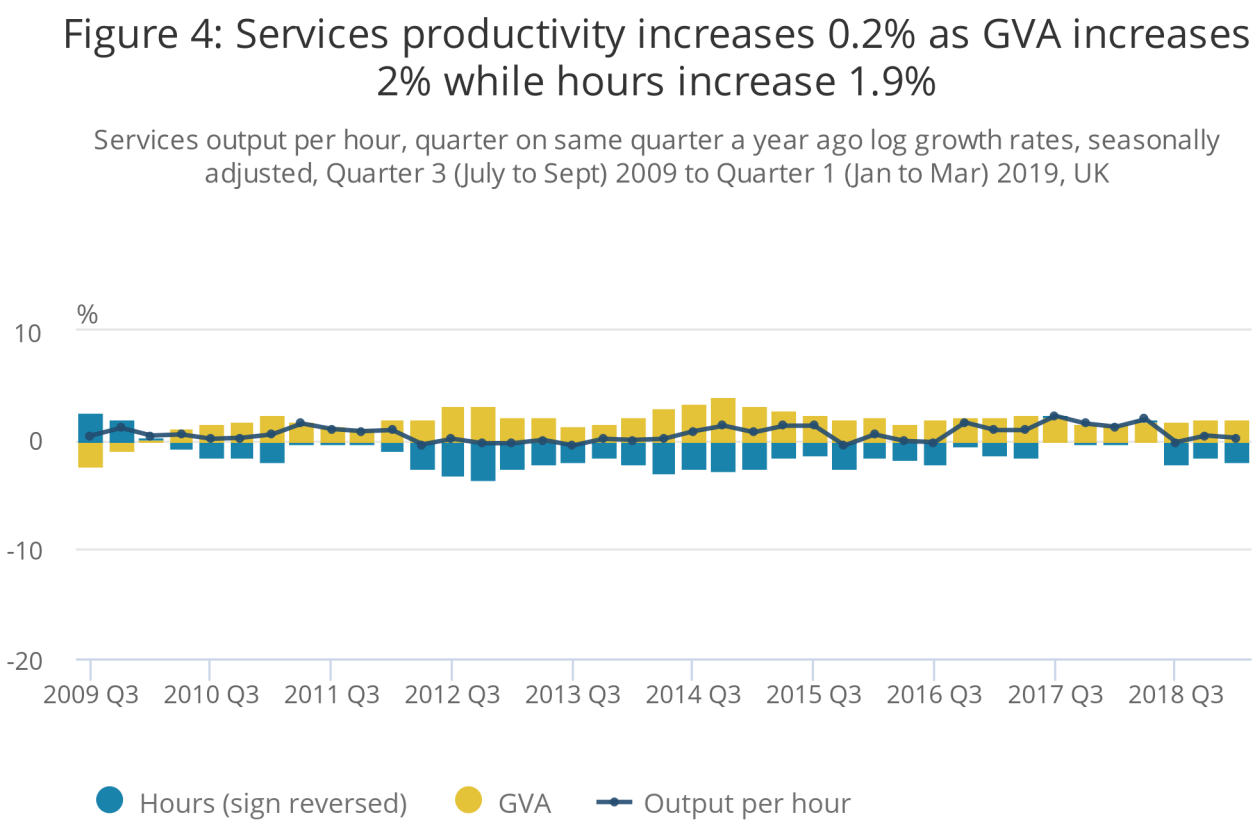
Services output per hour, compared with the same period a year ago, increased by 0.2% in the latest quarter (Quarter 1 (Jan to Mar) 2019), with output increasing faster than hours worked at 2.0% and 1.9% respectively. During the same period, labour productivity in manufacturing decreased by 0.9%, with total average hours worked growing twice as fast as output at 1.8% and 0.9% respectively.

Compared with the previous quarter, output per hour in services and manufacturing both decreased by 0.5%.

Figure 4 shows the quarter-on-year growth rates of output per hour and its components for services since Quarter 3 (July to Sept) 2009. During this period, output per hour for services has generally shown moderate growth, with gross value added (GVA) usually growing a little faster than hours worked.

Figure 4: Services productivity increases 0.2% as GVA increases 2% while hours increase 1.9%

Services output per hour, quarter on same quarter a year ago log growth rates, seasonally adjusted, Quarter 3 (July to Sept) 2009 to Quarter 1 (Jan to Mar) 2019, UK



Source: Office for National Statistics

Notes:

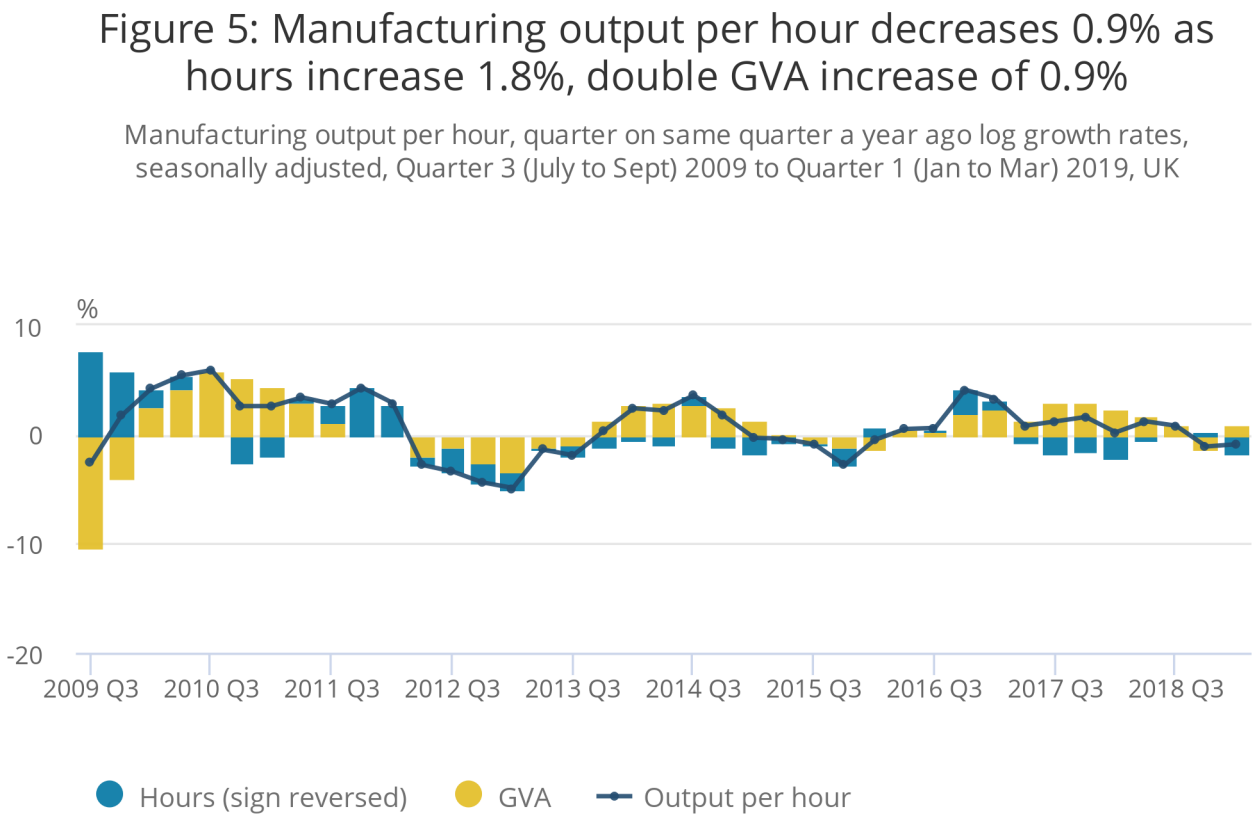
1. Estimates of hours worked have had their sign reversed to reflect how they affect output per hour. An increase in hours worked will contribute negatively to output per hour; while a decrease in hours worked will contribute positively to output per hour.

2. Growth is measured as percentage log changes. Please see section 6 for further information.

In contrast to services, output per hour in manufacturing has been more volatile, with periods of negative as well as positive productivity growth, and with GVA and hours often growing in different directions so that GVA growth and sign-reversed growth in hours worked appear on the same side of the horizontal axis in Figure 5.

Figure 5: Manufacturing output per hour decreases 0.9% as hours increase 1.8%, double GVA increase of 0.9%

Manufacturing output per hour, quarter on same quarter a year ago log growth rates, seasonally adjusted, Quarter 3 (July to Sept) 2009 to Quarter 1 (Jan to Mar) 2019, UK



Source: Office for National Statistics

Notes:

1. Estimates of hours worked have had their sign reversed to reflect how they affect output per hour. An increase in hours worked will contribute negatively to output per hour; while a decrease in hours worked will contribute positively to output per hour

2. Growth is measured as percentage log changes. Please see section 6 for further information.

4 . Labour productivity data

Labour productivity: Tables 1 to 8 and R1

Dataset | Released 5 July 2019

Estimates of main productivity metrics, corresponding to tables from the PDF version of the statistical bulletin, UK.

[Productivity jobs, productivity hours, market sector workers, market sector hours](#)

Dataset | Released 5 July 2019

Underlying labour inputs behind the labour productivity estimates by industry and industrial sector as defined by the Standard Industrial Classification (SIC), UK. Contains statistics of productivity jobs, productivity hours, market sector workers and total market sector hours. These statistics are important intermediates in producing output per worker and output per hour statistics.

[Breakdown of contributions, whole economy and sectors](#)

Dataset | Released 5 July 2019

Provides estimates of contributions to labour productivity (measured as output per hour (OPH)) using the Generalised Exactly Additive Decomposition (GEAD) methodology as described in Tang and Wang (2004), UK. Contains data on total hours worked, gross value added estimates, output per hour series and prices deflators. Includes disaggregated by sector. Also contains quarter-on-quarter or quarter on same quarter last year and annual formats for selected outputs.

[Labour productivity by industry division](#)

Dataset | Released 5 July 2019

Contains the statistics for productivity hours, output per hour and output per hour at current prices. Productivity hours measures the whole economy and sectoral hours worked. Output per hour equals gross value added (GVA) divided by productivity hours in an index format. Output per hour at current prices are displayed in pounds sterling. Experimental Statistics, UK.

[Labour productivity: revisions triangles](#)

Dataset | Released 5 July 2019

Revisions triangles for the main labour productivity variables. Data present the first estimates of chosen statistics used in the labour productivity publication against later revised estimates. Includes output per worker, output per job and output per hour, first estimates and revisions.

[Labour productivity time series](#)

Time series| Released 5 July 2019

Quarterly output per hour, output per job and output per worker for the whole UK economy and a range of industries.

[Quarterly regional productivity hours and jobs (NUTS1)](#)

Dataset | Released 5 July 2019

Quarterly UK productivity hours and jobs for the Nomenclature of Units for Territorial Statistics: NUTS1 regions. Seasonally adjusted and non-seasonally adjusted experimental statistics, UK.

5 . Glossary

Labour productivity

Labour productivity is calculated by dividing output by labour input.

Labour inputs

Labour inputs in this release are measured in terms of workers, jobs (“productivity jobs”) and hours worked (“productivity hours”).

Output

Output refers to 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

The measure of output used in these statistics is the chained volume (real) measure of gross value added (GVA) at basic prices.

Labour input measures used in this bulletin are known as “productivity jobs” and “productivity hours”.

Productivity jobs differ from the workforce jobs (WFJ) estimates, published in Table 6 of our Labour market overview, in three ways:

- to achieve consistency with the measurement of GVA, the employee component of productivity jobs is derived on a reporting unit basis, while the employee component of the WFJ estimates is on a local unit basis
- productivity jobs are scaled so industries sum to total Labour Force Survey (LFS) jobs – note that this constraint is applied in non-seasonally adjusted terms; the nature of the seasonal adjustment process means that the sum of seasonally adjusted productivity jobs and hours by industry can differ slightly from the seasonally adjusted LFS totals
- productivity jobs are calendar quarter average estimates, whereas WFJ estimates are provided for the last month of each quarter

Productivity hours are derived by multiplying employee and self-employed jobs at an industry level (before seasonal adjustment) by average actual hours worked from the LFS at an industry level. Results are scaled so industries sum to total unadjusted LFS hours and then seasonally adjusted.

Industry estimates of average hours derived in this process differ from published estimates (found in Table HOUR03 in the Labour market overview release), as the HOUR03 estimates are calculated by allocating all hours worked to the industry of main employment, whereas the productivity hours system takes account of hours worked in first and second jobs by industry.

Labour productivity is then derived using growth rates for GVA and labour inputs in line with the following equation:

$$\Delta Labour\ \Pr oductivity = \Delta\left(\frac{Output\,in\,Gross\,Value\,Added\,(GVA)\,terms}{Labour\,Inputs(hours, wor\ker s\,or\,jobs}\right) \approx \Delta GVA - \ \Delta Labour\,Input$$

Presentation of growth rates in log percentage changes

In this release charts and associated text measure growth in terms of percentage log changes and we will continue to use this presentation in future releases. The datasets will still contain the percentage growth rates and it is these statistics that hold the National Statistics status.

For typical rates of change for labour productivity and labour inputs, this change will not make much difference to the result. For example, a 2.0% percentage change translates to a 1.98% log change. We are adopting the approach because a log change between two observations has the same numerical value regardless of which observation is the starting point. This is not true for a percentage change. For illustrative purposes, in the following example, log changes are substantially different from percentage changes.

Suppose a series starts at 7, doubles to 14, then halves back to 7. The log change from 7 to 14 is 69%, and the log change from 14 to 7 is negative 69%. But the percentage change from 7 to 14 is 100%, while the percentage change from 14 to 7 is negative 50%. The log change reflects the fact that the second change reverses the first (and so has the same value), while the percentage change series appears to be very different in the first period compared with the second.

This approach is the same as that used by the Office for National Statistics (ONS) to compile multi-factor productivity.

Revisions

This release reflects revisions to jobs and hours data since Quarter 4 (Oct to Dec) 2018 resulting from revised data inputs of the Short Term Employment Survey (STES) published on 11 June 2019. Estimates of quarterly regional productivity hours and jobs, (NUTS1) have been revised as a result of the Ministry of Defense (MoD) correcting data process errors. These revisions have been made to various locations from April 2016 onwards.

Revisions resulting from seasonal adjustment affect all periods, where seasonal adjustment is applied.

7 . Strength and limitations

This release reports labour productivity estimates for Quarter 1 (Jan to Mar) 2019 for the whole economy. Productivity is important as it is considered to be a driver of long-run changes in average living standards.

This edition forms part of our quarterly productivity bulletin, which also includes unit labour costs, an overarching commentary, quarterly estimates of public service productivity, quarterly estimates of multi-factor productivity and articles on productivity-related topics and data.

The output statistics in this release are consistent with the latest Quarterly national accounts published on 28 June 201928 June 201928 June 2019. Note that productivity in this release does not refer to gross domestic product (GDP) per person, which is a measure that includes people who are not in employment.

The labour input measures used in this release are consistent with the latest labour market statistics as described further in the Strengths and limitations and Measuring the data sections of this bulletin.

Unless otherwise stated all figures are seasonally adjusted.

A research note, sources of revisions to labour productivity estimates, is available and further commentary on the nature and sources of the revisions introduced in this quarter is available in the UK productivity bulletin – introduction.

Data quality

The Labour productivity Quality and Methodology Information report contains important information on:

- the strengths and limitations of the data and how it compares with related data
- uses and users of the data
- how the output was created
- the quality of the output including accuracy of the data

8 . What's changed in this release?

Changes to the presentation of the labour productivity bulletin

We recently published an article detailing our plans to split the commentary we publish and associated datasets to help users more easily find the information relevant to them. This possibility was discussed at the productivity user forum on 13 March 2019 and user views were also invited in Labour productivity, UK: October to December 2018.

The three main changes to the presentation of the labour productivity bulletin are detailed in this section.

Commentary on experimental unit labour costs by industry sections

The bulletin will no longer contain information pertaining to changes in unit labour costs or sectional unit labour costs. Instead, those two estimates have been allocated their own article that is published concurrently alongside the quarterly productivity release.

Commentary on relative productivity for regions and nations within the UK

The bulletin will no longer contain information pertaining to changes in regional labour productivity or industry by region labour productivity, which will be published in their own article in February 2020.

Dataset transformation

Three existing datasets will be affected by these changes. They are Labour productivity: Tables 1 to 10 and R1 (LPROD01), Labour productivity time series (PRDY), and Labour productivity: revisions triangles (LPRODREV). Some data series will move out of these datasets to appear in separate newly-created datasets. Other existing datasets will remain unchanged.

Details of these changes can be found in our recent article Improving the presentation of the labour productivity release: July 2019.

9 . You may also be interested in

Productivity economic commentary: January to March 2019
Article | Released 5 July 2019
Draws together the main findings from official statistics and analysis of UK productivity to present a summary of recent developments.

Unit labour costs, UK: January to March 2019
Article | Released 5 July 2019
Unit labour costs and sectional unit labour costs estimates for the whole economy and a range of industries.

Industry by region estimates of labour productivity: 2017
Article | Released 6 February 2019
Annual productivity estimates for 16 industries in Standard Industrial Classification 2007 section groups for each of the NUTS1 regions from 1997 to 2017. It compares annual productivity growth by region, as output per hour, relative to the UK and explains how manufacturing and services have grown across the regions.

Regional and sub-regional productivity in the UK
Article | Released 6 February 2019
Estimates for measures of labour productivity using a balanced gross value added (GVA) approach for NUTS1, NUTS2 and NUTS3 sub-regions of the UK, selected city regions and English local enterprise partnerships (LEPs) up to 2017. Estimates are in both real and nominal terms.

Multi-factor productivity estimates: Experimental estimates January to March 2019
Article | Released 5 July 2019
Presents quarterly estimates of multi-factor productivity (MFP), capital services and quality-adjusted labour input (QALI), including a range of industry breakdowns and analysis.

A simple guide to multi-factor productivity
Article | Released 5 October 2018
Explains the concept and measurement of multi-factor productivity through simple stylised examples.

Quarterly UK public service productivity (Experimental Statistics): January to March 2019
Article | Released 5 July 2019
Contains the latest experimental estimates for quarterly UK total public service productivity, inputs and output.

Public service productivity: total, UK, 2016
Article | Released 9 January 2019
Presents updated measures of output, inputs and productivity for public services in the UK between 1997 and 2015, in addition to new estimates for 2016.

Public service productivity: healthcare, UK, 2016
Article | Released 9 January 2019
Presents updated estimates of output, inputs and productivity for public service healthcare in the UK between 1995 and 2015, and new estimates for 2016.

Public service productivity: healthcare, England: financial year ending 2017
Article | Released 9 January 2019
Presents estimates of output, inputs and productivity for public service healthcare in England on a financial year basis up to financial year ending 2017.

Improving estimates of labour productivity and international comparisons
Article | Released 9 January 2019
Discusses recent Organisation for Economic Co-operation and Development findings showing that the methodologies, data sources and adjustments used to estimate the number of persons, jobs and hours worked varied significantly across countries, and explores these differences and the impact on our ICP.

How productive is your business?
Article | Released 6 July 2018
An interactive tool that aids businesses to calculate their productivity and compare their performance with other businesses in Great Britain.

1 Labour productivity key measures
United Kingdom

Seasonally adjusted (2016=100)

	Whole economy			Production		Manufacturing		Services	
	Output per worker	Output per job	Output per hour	Output per job	Output per hour	Output per job	Output per hour	Output per job	Output per hour
Section	A-U	A-U	A-U	B-E	B-E	C	C	G-U	G-U
Indices									
	A4YM	LNNN	LZVB	DJ4M	DJK3	DJ4P	DJK6	DJE3	DJP9
2015	99.6	99.4	99.5	98.8	98.3	99.4	98.8	99.4	99.5†
2016	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2017	101.1	101.1	101.0	100.1	100.6	100.8†	101.7	101.5	101.4
2018	101.3	101.4	101.5	99.0	100.3	100.2†	102.0	102.1	102.2
2015 Q2	100.0	99.8	99.9	99.2	98.7	99.6	99.4	99.5	99.8
Q3	99.6	99.5	100.2	98.9	99.4	99.3	99.5	99.5	100.2
Q4	99.5	99.4	98.7	99.1	97.0	99.4	97.1†	99.7	99.0
2016 Q1	99.7	99.7	99.5	99.1	98.5†	99.5	98.7	99.9	99.7
Q2	99.6	99.6	99.7	100.1	100.4	99.6	100.0	99.4	99.7
Q3	100.0	99.9	100.1	100.1	100.6	99.7	100.1	99.9	100.0
Q4	100.8	100.8	100.6	100.7	100.6	101.2	101.2	100.8	100.6
2017 Q1	100.9	100.9	100.4	100.9	101.0	101.5	102.0	101.2	100.6
Q2	100.7	100.8	100.1	100.0	99.8	100.4	100.7	101.2	100.6
Q3	101.3	101.3	101.6	99.8	100.6	100.1	101.3	101.8	102.2
Q4	101.4	101.4	101.8	99.8	100.9	101.3	102.9	101.8	102.1†
2018 Q1	100.8	100.9	101.4	99.4	100.6	100.5	102.2	101.5	101.8
Q2	101.1	101.2	101.6	98.7	99.8	100.0	102.0	102.0	102.5
Q3	101.7	101.8	101.4	99.1	100.3	100.0	102.1	102.5	102.0
Q4	101.4	101.5	101.7	98.8	100.5	100.1	101.8	102.4	102.5
2019 Q1	101.6	101.7	101.2	100.1	99.0	102.2	101.3	102.4	102.0
Per cent change on quarter a year ago									
	A4YN	LNNP	LZVD	DJ4O	DJK5	DJ4R	DJK8	DJE5	DJQ3
2015 Q2	1.6	1.7	1.8	–	0.7	–1.1	–0.4	1.4	1.3
Q3	0.6	0.8	1.5	0.4	1.0	–0.9	–0.9	0.8	1.3
Q4	–0.1	0.1	–0.3	0.6	–0.9†	–0.8	–2.7	0.2	–0.5
2016 Q1	0.4	0.8	0.4	1.0	0.4	0.2	–0.5	0.9	0.5
Q2	–0.5	–0.2	–0.2	0.9	1.7	–	0.5	–0.1	–0.1
Q3	0.4	0.4	–0.1	1.2	1.1	0.4	0.6	0.4	–0.2
Q4	1.3	1.4	1.9	1.6	3.7	1.8	4.2†	1.1	1.6
2017 Q1	1.2	1.3	0.9	1.8	2.6	2.0	3.3	1.3	0.9
Q2	1.2	1.3	0.4	–0.1†	–0.6	0.8	0.8	1.8	0.9
Q3	1.3	1.4	1.5	–0.4	–	0.5	1.2	1.9	2.3
Q4	0.6	0.6	1.2	–0.8	0.3	0.1	1.7	1.0	1.4
2018 Q1	–	–	1.0	–1.5	–0.5	–1.0	0.2	0.3	1.2
Q2	0.4	0.4	1.5	–1.3	0.1	–0.4	1.2	0.8	1.9
Q3	0.4	0.4	–0.2	–0.7	–0.3	–0.1	0.8	0.7	–0.2
Q4	–	0.1	–0.1	–1.0	–0.3	–1.1†	–1.1	0.6	0.4
2019 Q1	0.7	0.8	–0.2	0.7	–1.5	1.7	–0.9	0.9	0.2
Per cent change on previous quarter									
	A4YO	DMWR	TXBB	DJ4N	DJK4	DJ4Q	DJK7	DJE4	DJQ2
2015 Q2	0.8	0.9	0.8	1.2	0.7†	0.3	0.2†	0.5	0.5
Q3	–0.4	–0.3	0.3	–0.3	0.7	–0.3	0.1	–	0.4
Q4	–0.2	–0.1	–1.5	0.2	–2.5	0.1	–2.4	0.2	–1.2
2016 Q1	0.2	0.3	0.8	–†	1.5	0.1	1.6	0.3	0.7
Q2	–0.1	–0.1	0.2	1.0	2.0	0.1	1.2	–0.5	–0.1†
Q3	0.4	0.4	0.4	–	0.2	–	0.1	0.5	0.3
Q4	0.8	0.9	0.5	0.5	–	1.5	1.2	0.9	0.7
2017 Q1	0.1	0.1	–0.2	0.2	0.5	0.3	0.8	0.4	–
Q2	–0.1	–0.1	–0.3	–0.9	–1.2	–1.0	–1.3	–	–
Q3	0.5	0.5	1.5	–0.2	0.8	–0.3	0.5	0.5†	1.6
Q4	0.1	0.1	0.2	0.1	0.3	1.1	1.6	–	–0.1
2018 Q1	–0.5	–0.5	–0.4	–0.5	–0.3	–0.8	–0.7	–0.3	–0.2
Q2	0.3	0.3	0.2	–0.7	–0.7	–0.4	–0.2	0.5	0.6
Q3	0.6	0.5	–0.2	0.4	0.4	–	0.1	0.5	–0.5
Q4	–0.3	–0.2	0.3	–0.3	0.2	0.1†	–0.3	–0.1	0.5
2019 Q1	0.2	0.2	–0.6	1.3	–1.5	2.1	–0.5	–	–0.5

†indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised

2 Output per job: Manufacturing subsections
United Kingdom

Seasonally adjusted (2016=100)

	Food, beverages & tobacco	Textiles, wearing apparel & leather	Wood & paper products, & printing	Chemicals, Pharmaceutic-als	Rubber, plastics & non-metallic minerals	Basic metals & metal products	Computer etc products, Electrical equipment	Machinery & equipment	Transport equipment	Coke & refined petroleum, Other manufacturing
Divisions	10-12	13-15	16-18	20-21	22-23	24-25	26-27	28	29-30	19,31-33
Level (£k)										
2016	61.3	57.0	46.5	170.2	54.0	56.1	63.1	57.7	82.8	59.7
Indices										
	DJ54	DJ57	DJ5F	DJ5I	DJ5L	DJB2	DJB7	DJC2	DJC5	DJD3
2015	101.5	104.7	100.2	98.0	95.8	99.1	96.8	98.1	101.9	98.4
2016	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2017	98.7	105.2	104.5	90.4	94.3	99.0	99.6	105.0	109.3	105.7
2018	98.4†	106.0†	108.4†	90.1†	91.1†	96.7†	97.9	101.4†	108.6	106.1
2015 Q2	100.8	105.8	99.3	97.6	93.8	101.1	98.3	98.2†	103.9	98.8
Q3	101.7	108.2	100.3	97.9	96.7	96.5	98.0	97.0	101.3	98.0
Q4	101.4	104.0	100.9	98.5	97.4	97.9	97.2	96.0	100.5	98.8
2016 Q1	100.3	108.6	98.5	98.1	100.1	101.4	97.5	96.1	99.2	98.4
Q2	100.4	97.8	100.1†	102.3	101.1	98.8	100.1	97.1	101.1	96.4
Q3	100.2	97.0	99.9	98.2	98.4	99.9	99.1	102.5	98.3	102.2
Q4	99.0	96.6	101.4	101.3	100.3	99.9	103.4	104.2	101.4	103.0
2017 Q1	99.2	102.6	105.5	90.4	97.6	98.1	101.9	108.2	106.1	108.3
Q2	98.0	103.5	103.0	92.1	95.1	98.2	99.8	104.0	107.1	105.9
Q3	99.0	105.7	104.4	89.0	92.2	97.8	98.3	103.6	111.5	102.9
Q4	98.8†	109.0	105.0	90.0	92.2	101.8	98.1	104.4	112.5	105.6†
2018 Q1	98.0	98.6	106.1	89.9	89.8	100.4	99.7	104.8	111.2	104.8
Q2	98.7	105.8	108.8	90.0	90.7	95.7	97.8	101.1	108.6	105.1
Q3	98.5	105.9	107.2	87.2	91.5	97.3	96.7	99.8	109.3	108.0
Q4	98.4	113.7†	111.3	93.4†	92.3†	93.3†	97.4†	99.8	105.2†	106.6
2019 Q1	100.8	115.1	112.8	95.5	96.8	95.6	103.6	96.9	105.9	106.3
Per cent change on quarter a year ago										
	DJ56	DJ5E	DJ5H	DJ5K	DJ5N	DJB6	DJB9	DJC4	DJD2	DJD7
2015 Q2	–4.2	4.3	–0.3	7.3	–6.1	0.3	4.0	–15.4	1.6	–0.9
Q3	–1.8	16.9	0.6	4.2	–1.2	–5.3	3.2	–16.2	1.1	–3.1
Q4	–1.7	9.4	0.9	2.5	2.2	–2.7	2.6	–14.8†	–1.6	–3.4
2016 Q1	–1.6	7.6	–1.7†	0.3	5.1	0.6	4.2	–5.1	–2.8	0.3
Q2	–0.3	–7.6	0.8	4.8	7.7	–2.3	1.8	–1.1	–2.7	–2.5
Q3	–1.5†	–10.3	–0.3	0.4	1.9	3.5	1.0	5.7	–2.9	4.3
Q4	–2.4	–7.1	0.5	2.8	3.0	2.0	6.4	8.5	0.8	4.2
2017 Q1	–1.1	–5.5	7.1	–7.8	–2.5	–3.3	4.5	12.6	6.9	10.0†
Q2	–2.4	5.8	2.9	–10.0	–5.9	–0.6	–0.2	7.1	6.0	9.9
Q3	–1.2	9.0	4.5	–9.4	–6.3	–2.1	–0.7	1.0	13.5	0.7
Q4	–0.3	12.8	3.5	–11.1	–8.1	1.9	–5.1	0.2	11.0	2.5
2018 Q1	–1.2	–3.9	0.6	–0.6	–8.0	2.4	–2.2	–3.1	4.8	–3.2
Q2	0.7	2.2	5.6	–2.3	–4.6	–2.6	–2.0	–2.8	1.4	–0.7
Q3	–0.5	0.2	2.7	–2.0	–0.8	–0.5	–1.7	–3.6	–2.0	4.9
Q4	–0.3	4.3†	6.1	3.8†	–†	–8.4†	–0.7†	–4.4	–6.5†	1.0
2019 Q1	2.9	16.7	6.3	6.3	7.9	–4.8	3.8	–7.5	–4.8	1.4
Per cent change on previous quarter										
	DJ55	DJ58	DJ5G	DJ5J	DJ5M	DJB3	DJB8	DJC3	DJC6	DJD4
2015 Q2	–1.1	4.9	–1.0†	–0.2	–1.6	0.3	5.0	–3.1	1.8	0.7
Q3	0.9	2.2	1.0	0.3	3.0	–4.6	–0.3	–1.2	–2.5	–0.9
Q4	–0.3	–3.8	0.6	0.6	0.8	1.4	–0.9	–1.0†	–0.7	0.9
2016 Q1	–1.1	4.4	–2.3	–0.4	2.8	3.6	0.4	0.1	–1.3	–0.4
Q2	0.1	–9.9	1.6	4.3	0.9	–2.6	2.6	1.1	1.9	–2.1
Q3	–0.2	–0.8	–0.2	–4.0	–2.6	1.1	–1.0	5.6	–2.7	6.1†
Q4	–1.2	–0.4	1.4	3.1	1.9	–	4.3	1.7	3.1	0.8
2017 Q1	0.1	6.2	4.1	–10.7	–2.7	–1.8	–1.4	3.8	4.7	5.1
Q2	–1.2	0.9	–2.4	1.8	–2.6	0.2	–2.1	–3.8	1.0	–2.2
Q3	1.0†	2.2	1.4	–3.3	–3.0	–0.5	–1.5	–0.4	4.1	–2.8
Q4	–0.2	3.1	0.5	1.1	–	4.1	–0.2	0.8	0.9	2.5
2018 Q1	–0.7	–9.5	1.1	–0.2	–2.7	–1.4	1.6	0.4	–1.2	–0.7
Q2	0.7	7.3	2.5	0.1	1.0	–4.7	–1.9	–3.5	–2.3	0.3
Q3	–0.2	0.1	–1.5	–3.1	0.9	1.7	–1.2	–1.3	0.6	2.7
Q4	–0.1	7.3†	3.8	7.1†	0.9†	–4.1†	0.8†	–	–3.8†	–1.3
2019 Q1	2.4	1.2	1.3	2.2	4.9	2.5	6.3	–2.9	0.7	–0.3

†indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

3 Output per hour worked: Manufacturing subsections
United Kingdom

Seasonally adjusted (2016=100)

	Food, beverages & tobacco	Textiles, wearing apparel & leather	Wood & paper products, & printing	Chemicals, Pharmaceutic-als	Rubber, plastics & non-metallic minerals	Basic metals & metal products	Computer etc products, Electrical equipment	Machinery & equipment	Transport equipment	Coke & refined petroleum, Other manufacturing
Divisions	10-12	13-15	16-18	20-21	22-23	24-25	26-27	28	29-30	19,31-33
Level (£)										
2016	33.4	33.1	24.9	94.8	28.1	29.4	34.6	30.7	43.6	32.3
Indices										
	DJK9	DJL4	DJL7	DJM4	DJM7	DJN4	DJN7	DJO5	DJO8	DJP3
2015 Q2	102.0†	103.0	98.6	99.7†	88.4	100.5	98.4†	98.6	100.2	105.0†
Q3	99.1	110.9	97.4†	99.5	92.6	97.3	101.7	98.5†	100.8†	103.8
Q4	98.4	108.5	94.5	97.3	93.6	92.5†	99.1	93.2	98.5	100.9
2016 Q1	99.0	105.4†	95.2	100.2	98.0†	100.0	98.0	97.6	98.8	98.9
Q2	98.1	99.8	99.4	102.3	100.7	100.8	100.5	96.0	103.4	98.2
Q3	102.2	98.1	103.5	97.4	98.7	100.5	99.5	100.4	97.8	100.7
Q4	100.6	96.7	101.8	100.1	102.6	98.7	101.9	106.1	100.1	102.2
2017 Q1	100.5	101.3	103.2	89.6	96.8	102.8	101.8	108.3	104.7	109.7
Q2	101.9	103.2	101.8	89.2	91.4	98.3	103.7	105.6	105.0	107.1
Q3	102.0	102.8	102.8	94.0	88.0	100.3	102.6	106.1	110.1	105.8
Q4	99.9	105.4	107.3	91.9	87.8	104.9	105.4	107.4	113.7	109.1
2018 Q1	100.6	100.3	105.5	94.9	87.4	98.7	105.1	108.1	113.2	110.0
Q2	98.0	104.2	112.2	98.0	93.7	95.0	99.1	101.6	110.4	112.4
Q3	99.3	109.6	108.4	91.6	90.9	96.4	100.7	100.5	114.8	114.1
Q4	99.6	109.9	111.7	92.7	91.5	94.4	102.3	105.0	108.0	110.6
2019 Q1	98.9	110.5	112.2	94.8	92.5	96.1	103.7	97.5	105.3	107.2
Per cent change on quarter a year ago										
	DJL3	DJL6	DJM3	DJM6	DJM9	DJN6	DJN9	DJO7	DJP2	DJP5
2015 Q2	–2.2	–3.7	0.1	8.3	–8.8	4.1	1.3	–13.0	1.5†	3.4
Q3	–5.7	16.2	–1.6	7.3	–7.0	–1.6	2.8†	–11.1	1.5	0.1
Q4	–6.7	18.3†	–4.4†	1.9†	3.6	–6.7	–0.6	–15.6	–1.5	–3.9†
2016 Q1	–3.3†	6.6	–6.3	1.2	10.6	1.5	1.1	–3.5†	–1.2	–4.9
Q2	–3.9	–3.1	0.8	2.6	14.0†	0.4†	2.2	–2.7	3.1	–6.5
Q3	3.1	–11.5	6.3	–2.0	6.6	3.2	–2.1	1.9	–3.0	–3.0
Q4	2.2	–10.8	7.8	2.9	9.5	6.8	2.8	13.8	1.6	1.3
2017 Q1	1.5	–3.9	8.4	–10.6	–1.2	2.8	3.9	11.0	6.0	10.9
Q2	3.9	3.4	2.3	–12.8	–9.3	–2.5	3.2	10.0	1.6	9.1
Q3	–0.2	4.7	–0.7	–3.5	–10.8	–0.1	3.0	5.7	12.6	5.0
Q4	–0.7	9.0	5.4	–8.2	–14.4	6.2	3.4	1.3	13.6	6.7
2018 Q1	0.1	–0.9	2.2	5.9	–9.7	–3.9	3.2	–0.2	8.2	0.3
Q2	–3.8	1.0	10.2	10.0	2.6	–3.4	–4.4	–3.8	5.1	5.0
Q3	–2.6	6.6	5.5	–2.5	3.3	–3.9	–1.8	–5.3	4.2	7.8
Q4	–0.4	4.2	4.1	0.9	4.3	–9.9	–2.9	–2.2	–5.0	1.4
2019 Q1	–1.7	10.1	6.4	–0.2	5.8	–2.6	–1.3	–9.8	–7.0	–2.5
Per cent change on previous quarter										
	DJL2	DJL5	DJM2	DJM5	DJM8	DJN5	DJN8	DJO6	DJO9	DJP4
2015 Q2	–0.4†	4.1†	–3.0†	0.6†	–0.3	2.0†	1.4†	–2.5	0.2†	0.9†
Q3	–2.8	7.7	–1.2	–0.2	4.8	–3.1	3.4	–0.1†	0.6	–1.2
Q4	–0.7	–2.2	–3.0	–2.2	1.1	–4.9	–2.5	–5.4	–2.3	–2.8
2016 Q1	0.6	–2.9	0.8	3.0	4.7†	8.1	–1.1	4.7	0.3	–2.0
Q2	–1.0	–5.3	4.4	2.0	2.7	0.8	2.5	–1.6	4.7	–0.8
Q3	4.3	–1.7	4.1	–4.7	–2.0	–0.4	–0.9	4.6	–5.4	2.6
Q4	–1.6	–1.4	–1.7	2.7	3.9	–1.7	2.4	5.7	2.4	1.5
2017 Q1	–0.1	4.7	1.4	–10.5	–5.6	4.1	–0.1	2.1	4.6	7.3
Q2	1.4	1.8	–1.4	–0.5	–5.7	–4.3	1.8	–2.5	0.3	–2.4
Q3	0.1	–0.4	1.0	5.4	–3.7	2.0	–1.1	0.4	4.9	–1.2
Q4	–2.0	2.6	4.4	–2.2	–0.2	4.5	2.7	1.3	3.3	3.2
2018 Q1	0.7	–4.8	–1.7	3.3	–0.4	–5.9	–0.3	0.6	–0.5	0.8
Q2	–2.7	3.9	6.4	3.3	7.2	–3.7	–5.7	–6.0	–2.5	2.2
Q3	1.4	5.1	–3.3	–6.6	–3.0	1.4	1.6	–1.1	4.0	1.5
Q4	0.2	0.3	3.1	1.2	0.7	–2.0	1.5	4.5	–5.9	–3.0
2019 Q1	–0.7	0.5	0.5	2.2	1.0	1.8	1.4	–7.2	–2.6	–3.1

† indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

4 Output per job: Services sections

United Kingdom

Seasonally adjusted (2016=100)

	Wholesale & retail trade, motor vehicle repair	Transport & storage	Accommo-dation & food services	Information & commu-nication	Finance & insurance	Real estate activities	Profes-sional, scientific & technical activities	Admin & support services	Government services	Arts, enter-tainment & recreation	Other services
Section	G	H	I	J	K	L	M	N	O-Q	R	S-U
Level (£k)											
2016	35.5	51.5	22.7	78.1	109.7	434.5	50.1	28.6	36.8	28.3	45.9
Indices											
	DJE6	DJE9	DJF4	DJF7	DJG5	DJH4	DJH7	DJI2	DJI5	DJJ3	DJJ6
2015	95.6	106.5	101.9	95.2	97.0	99.0	101.4	99.3	100.2	100.8	101.5
2016	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2017	102.0	102.9	101.0	102.1	100.7	98.9	105.9	102.7	99.9	99.5†	103.0
2018	104.7†	104.4	102.8†	101.9†	97.5	96.4†	111.8	104.4	98.7	98.2	102.6†
2015 Q2	95.8	107.5	102.0	95.0	96.3	97.6	102.2	99.3	100.3	100.3	100.6†
Q3	95.7	105.2	101.6	95.7	95.8	99.9	101.1	100.3	100.5	100.8†	101.5
Q4	96.3	103.2	102.2	96.5	97.4†	100.9	101.1†	99.2†	100.4	102.2	103.2
2016 Q1	98.8†	101.6	100.7	98.4†	98.6	99.3	100.0	99.4	100.3	103.2	100.5
Q2	99.1	99.9	100.0†	97.2	100.2	98.9	99.4	98.4	99.7	99.5	100.9
Q3	99.9	98.6	99.3	101.1	100.2	100.3	99.8	100.6	99.9	99.5	96.4
Q4	102.2	99.9	100.1	103.3	101.0	101.5	100.8	101.6	100.1	97.8	102.2
2017 Q1	101.6	102.9	100.5	101.2	102.3	97.5	103.4	102.3	100.5	99.0	102.9
Q2	101.4	101.6	100.2	101.7	100.9	100.7	104.8	101.9	99.7	101.6	104.0
Q3	102.6	102.7	101.3	102.3	100.4	99.6	106.7	102.9	100.0	98.5	103.6
Q4	102.4	104.3	102.0	103.2	99.2	97.8	108.8	103.6	99.5	99.1	101.6
2018 Q1	102.1	104.6	101.7	101.8	97.9	94.3	110.7	104.2	98.5	99.1	101.8
Q2	104.3	104.6	101.9	102.4	98.2	97.5	112.0	105.2	98.6	96.7	101.3
Q3	106.0	104.6	103.6	102.4	97.6	97.4	112.5	104.1	98.7	99.0	103.8
Q4	106.6	103.9†	103.8	101.0	96.5	96.5†	111.8	104.2	98.9†	98.1	103.7
2019 Q1	107.8	103.4	104.0	102.4	96.4	99.9	109.8	105.4	98.7	94.4	103.9
Per cent change on quarter a year ago											
	DJE8	DJF3	DJF6	DJF9	DJG8	DJH6	DJH9	DJI4	DJI7	DJJ5	DJJ8
2015 Q2	3.3	–0.2	2.0	3.2	–2.7	–1.8	3.5	2.6	0.8	–4.0	5.8
Q3	2.8†	–5.1	1.2	4.6	–1.7	–0.1	0.5	3.5	0.3	–2.2	2.3†
Q4	2.2	–7.2	1.5†	3.9†	–1.9	2.1	–1.6	1.8†	–0.4	0.7	2.8
2016 Q1	4.6	–7.6	–0.9	5.0	0.3	1.7	–0.9	0.9	0.7	3.3	–
Q2	3.5	–7.1	–2.0	2.3	4.1	1.3	–2.8	–0.8	–0.6	–0.8	0.3
Q3	4.4	–6.3	–2.3	5.7	4.6	0.4	–1.2	0.3	–0.6	–1.2†	–5.0
Q4	6.2	–3.2	–2.1	7.0	3.7	0.7	–0.4†	2.5	–0.3	–4.3	–1.0
2017 Q1	2.9	1.3	–0.2	2.9	3.7	–1.8	3.4	2.9	0.2	–4.1	2.4
Q2	2.3	1.7	0.2	4.7	0.7	1.8	5.4	3.5	–	2.1	3.1
Q3	2.7	4.2	2.1	1.1	0.2	–0.7	6.9	2.4	0.2	–1.0	7.4
Q4	0.2	4.4	1.9	–0.1	–1.8	–3.7	8.0	2.0	–0.6	1.4	–0.6
2018 Q1	0.5	1.6	1.2	0.6	–4.3	–3.3	7.1	1.9	–1.9	0.2	–1.0
Q2	2.9	3.0	1.7	0.7	–2.6	–3.1	6.9	3.3	–1.2	–4.8	–2.6
Q3	3.3	1.9	2.2	0.1	–2.8	–2.3	5.4	1.1	–1.4	0.5	0.2
Q4	4.1	–0.4†	1.8	–2.2	–2.7†	–1.3†	2.8	0.6	–0.6†	–1.1	2.0
2019 Q1	5.5	–1.1	2.3	0.6	–1.6	6.0	–0.8	1.1	0.2	–4.8	2.1
Per cent change on previous quarter											
2015 Q2	3.3	–0.2	2.0	3.2	–2.7	–1.8	3.5	2.6	0.8	–4.0	5.8
Q3	2.8†	–5.1	1.2	4.6	–1.7	–0.1	0.5	3.5	0.3	–2.2	2.3†
Q4	2.2	–7.2	1.5†	3.9†	–1.9	2.1	–1.6	1.8†	–0.4	0.7	2.8
2016 Q1	4.6	–7.6	–0.9	5.0	0.3	1.7	–0.9	0.9	0.7	3.3	–
Q2	3.5	–7.1	–2.0	2.3	4.1	1.3	–2.8	–0.8	–0.6	–0.8	0.3
Q3	4.4	–6.3	–2.3	5.7	4.6	0.4	–1.2	0.3	–0.6	–1.2†	–5.0
Q4	6.2	–3.2	–2.1	7.0	3.7	0.7	–0.4†	2.5	–0.3	–4.3	–1.0
2017 Q1	2.9	1.3	–0.2	2.9	3.7	–1.8	3.4	2.9	0.2	–4.1	2.4
Q2	2.3	1.7	0.2	4.7	0.7	1.8	5.4	3.5	–	2.1	3.1
Q3	2.7	4.2	2.1	1.1	0.2	–0.7	6.9	2.4	0.2	–1.0	7.4
Q4	0.2	4.4	1.9	–0.1	–1.8	–3.7	8.0	2.0	–0.6	1.4	–0.6
2018 Q1	0.5	1.6	1.2	0.6	–4.3	–3.3	7.1	1.9	–1.9	0.2	–1.0
Q2	2.9	3.0	1.7	0.7	–2.6	–3.1	6.9	3.3	–1.2	–4.8	–2.6
Q3	3.3	1.9	2.2	0.1	–2.8	–2.3	5.4	1.1	–1.4	0.5	0.2
Q4	4.1	–0.4†	1.8	–2.2	–2.7†	–1.3†	2.8	0.6	–0.6†	–1.1	2.0
2019 Q1	5.5	–1.1	2.3	0.6	–1.6	6.0	–0.8	1.1	0.2	–4.8	2.1

† indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

5 Output per hour worked: Services sections
United Kingdom

Seasonally adjusted (2016=100)

	Wholesale & retail trade, motor vehicle repair	Transport & storage	Accommo-dation & food services	Information & commu-nication	Finance & insurance	Real estate activities	Profes-sional, scientific & technical activities	Admin & support services	Government services	Arts, enter-tainment & recreation	Other services
Section	G	H	I	J	K	L	M	N	O-Q	R	S-U
Level (£)											
2016	23.1	28.2	16.6	43.3	61.7	279.4	28.2	18.4	25.6	21.5	30.9
Indices											
	DJQ4	DJQ7	DJR2	DJR5	DJS3	DJS6	DJS9	DJT7	DJU2	DJV6	DJV9
2015	95.7	105.5	101.7	97.4	99.0	100.5	100.2	100.7	99.7	98.9	102.3†
2016	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2017	101.2	103.5	101.0	102.0	102.7	100.5	107.5	103.0	99.5	95.1	100.8
2018	104.9	104.1	105.0†	102.5†	98.3	99.8†	112.1	104.0	98.6	95.1	99.7
2015 Q2	95.7	106.7	101.4†	96.6†	98.6	97.9	101.4	101.2†	99.9†	98.9†	103.1
Q3	97.0	104.8	101.3	99.0	98.8†	100.6	100.7	101.8	100.2	101.0	103.0
Q4	96.0†	101.0†	102.6	98.5	98.1	105.0†	99.1†	98.3	99.1	99.4	103.2
2016 Q1	97.9	101.6	101.1	99.4	98.5	102.7	99.1	100.6	99.5	101.5	100.4†
Q2	99.5	99.6	99.6	98.5	100.3	96.5	101.2	96.6	100.6	100.7	98.9
Q3	100.0	98.7	99.4	100.2	99.8	103.2	99.9	100.6	100.0	99.5	98.8
Q4	102.6	100.0	100.0	102.0	101.5	97.6	99.9	102.2	100.0	98.2	101.9
2017 Q1	101.0	102.7	100.1	99.1	104.1	97.8	103.8	101.5	99.5	96.2	101.9
Q2	100.8	102.0	99.5	99.7	102.5	100.6	105.0	102.1	98.6	97.9	102.0
Q3	102.1	104.2	101.7	103.6	102.6	102.9	110.3	103.5	100.2	91.4	101.4
Q4	100.7	105.0	102.8	105.5	101.6	100.8	110.9	104.9	99.6	94.7	97.8
2018 Q1	102.2	103.3	104.9	102.9	99.6	99.9	110.9	104.0	98.8	96.1	98.2
Q2	104.4	104.8	107.2	103.2	99.2	101.6	113.2	104.5	98.5	92.6	99.6
Q3	105.8	104.5	103.7	102.7	98.2	96.3	112.0	104.1	97.9	95.3	100.5
Q4	107.0	103.8	104.4	101.3	96.4	101.4	112.5	103.5	99.1	96.3	100.6
2019 Q1	107.8	101.8	101.1	102.4	96.5	105.3	110.0	105.7	98.6	91.6	100.9
Per cent change on quarter a year ago											
	DJQ6	DJQ9	DJR4	DJR7	DJS5	DJS8	DJT6	DJT9	DJU7	DJV8	DJW3
2015 Q2	4.5	0.5†	–0.5†	4.1	–0.9†	–4.0†	3.7	–1.0	0.8†	–1.9	6.1
Q3	6.0	–4.8	–0.8	6.7	–0.1	–4.6	1.4	0.1	0.8	–1.6	4.5
Q4	2.6†	–9.7	0.9	5.9	–2.2	5.3	–2.1	–2.1	–0.7	0.4†	–0.1†
2016 Q1	3.9	–7.1	–0.2	4.1	–2.2	4.1	–0.5	–0.7†	0.1	5.7	0.3
Q2	4.0	–6.7	–1.8	1.9	1.7	–1.5	–0.2	–4.6	0.6	1.8	–4.0
Q3	3.2	–5.8	–1.9	1.2	1.0	2.6	–0.9	–1.3	–0.3	–1.5	–4.1
Q4	6.9	–1.0	–2.6	3.5	3.5	–7.0	0.8	4.0	0.9	–1.1	–1.2
2017 Q1	3.2	1.0	–1.0	–0.3†	5.7	–4.8	4.7†	0.9	–	–5.2	1.5
Q2	1.2	2.4	–0.1	1.3	2.2	4.2	3.7	5.7	–1.9	–2.8	3.1
Q3	2.1	5.5	2.3	3.4	2.8	–0.3	10.5	2.9	0.2	–8.1	2.7
Q4	–1.8	5.1	2.8	3.5	0.1	3.3	11.1	2.6	–0.3	–3.7	–4.0
2018 Q1	1.2	0.6	4.8	3.8	–4.3	2.1	6.8	2.4	–0.7	–0.2	–3.7
Q2	3.7	2.7	7.8	3.5	–3.2	1.0	7.8	2.3	–0.1	–5.5	–2.4
Q3	3.6	0.3	2.0	–0.8	–4.2	–6.5	1.5	0.6	–2.3	4.2	–0.9
Q4	6.2	–1.2	1.6	–4.0	–5.1	0.6	1.4	–1.3	–0.5	1.7	2.9
2019 Q1	5.4	–1.4	–3.6	–0.4	–3.1	5.4	–0.8	1.7	–0.2	–4.6	2.8
Per cent change on previous quarter											
	DJQ5	DJQ8	DJR3	DJR6	DJS4	DJS7	DJT2	DJT8	DJU6	DJV7	DJW2
2015 Q2	1.6	–2.4	0.1†	1.2	–2.1†	–0.8	1.8†	–	0.5†	3.0†	3.0
Q3	1.3†	–1.8	–0.1	2.4	0.2	2.8†	–0.7	0.6	0.3	2.1	–0.1
Q4	–1.0	–3.6†	1.3	–0.5†	–0.7	4.3	–1.6	–3.5†	–1.1	–1.6	0.2
2016 Q1	1.9	0.6	–1.5	0.9	0.4	–2.2	–	2.4	0.4	2.2	–2.7†
Q2	1.7	–2.0	–1.5	–0.9	1.8	–6.0	2.1	–4.0	1.0	–0.8	–1.5
Q3	0.5	–0.9	–0.2	1.7	–0.5	7.0	–1.3	4.1	–0.6	–1.1	–0.2
Q4	2.6	1.2	0.6	1.8	1.7	–5.5	–	1.7	–	–1.3	3.2
2017 Q1	–1.5	2.7	0.2	–2.8	2.5	0.2	3.9	–0.7	–0.5	–2.1	–
Q2	–0.3	–0.6	–0.6	0.6	–1.5	2.9	1.2	0.6	–0.9	1.8	0.1
Q3	1.4	2.1	2.2	3.8	0.1	2.3	5.1	1.3	1.6	–6.6	–0.6
Q4	–1.4	0.8	1.1	1.9	–0.9	–2.0	0.6	1.4	–0.6	3.5	–3.6
2018 Q1	1.5	–1.7	2.1	–2.5	–2.0	–1.0	–0.1	–0.9	–0.9	1.5	0.4
Q2	2.2	1.5	2.2	0.3	–0.4	1.7	2.1	0.5	–0.3	–3.6	1.4
Q3	1.3	–0.3	–3.3	–0.4	–1.0	–5.3	–1.1	–0.4	–0.6	2.9	0.9
Q4	1.1	–0.7	0.7	–1.4	–1.9	5.3	0.5	–0.5	1.3	1.0	0.1
2019 Q1	0.8	–1.9	–3.1	1.1	0.2	3.8	–2.2	2.1	–0.6	–4.8	0.3

† indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

6 Market Sector productivity
United Kingdom

Seasonally adjusted (2016=100)

	Output per worker			Output per hour worked		
	Index	Per cent change on quarter a year ago	Per cent change on previous quarter	Index	Per cent change on quarter a year ago	Per cent change on previous quarter
	GYY4	GYY5	GYY6	GYY7	GYY8	GYY9
2015	99.4	..	..	99.2	..	..
2016	100.0	..	..	100.0	..	..
2017	102.2	..	..	102.2†	..	..
2018	102.6	..	..	103.1	..	..
2015 Q2	100.0	1.3	0.8†	99.6	1.3	0.5†
Q3	99.3	0.2†	–0.7	99.8	0.9†	0.2
Q4	99.0†	–0.5	–0.3	98.4	–0.5	–1.4
2016 Q1	99.4	0.2	0.4	99.3	0.2	0.9
Q2	99.5	–0.5	0.1	99.7†	0.1	0.4
Q3	100.0	0.7	0.4	100.1	0.4	0.5
Q4	101.0	2.0	1.1	100.9	2.6	0.8
2017 Q1	101.9	2.4	0.8	101.4	2.1	0.5
Q2	101.8	2.3	–0.1	101.2	1.6	–0.1
Q3	102.4	2.4	0.6	102.9	2.8	1.7
Q4	102.6	1.5	0.2	103.3	2.4	0.4
2018 Q1	102.0	0.1	–0.6	102.8	1.4	–0.5
Q2	102.4	0.6	0.4	103.1	1.9	0.3
Q3	103.1	0.7	0.7	103.2	0.2	–
Q4	102.7	0.2	–0.3	103.1	–0.2	–0.1
2019 Q1	103.0	1.0	0.3	102.7	–0.1	–0.4

† indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

7 Output per job and hour worked: Other industries
United Kingdom

Seasonally adjusted (2016=100)

	Agriculture, forestry and fishing		Construction	
	Output per job	Output per hour worked	Output per job	Output per hour worked
Section	A	A	F	F
Level (£)				
2016	28 585.2	13.5	49 557.3	25.3
Indices				
	DJ4K	DJJ9	DJD8	DJP6
2002	114.4	118.0	95.1	94.2
2003	109.9	110.7	97.3	97.6
2004	104.9	104.0†	99.9	100.6
2005	106.2	111.1	94.6	95.9
2006	101.4	104.7	94.2	95.4
2007	98.6	103.9	93.2	94.7
2008	101.7	106.8	90.4	92.9
2009	94.5	90.1	81.6	84.5
2010	88.3	83.7	93.4	95.7†
2011	97.4	95.7	95.9	100.1
2012	90.6	93.1	90.0	93.4
2013	99.3	99.4	91.3	92.6
2014	96.6	96.7	96.5	95.4
2015	106.3	109.9	98.6	98.5
2016	100.0	100.0	100.0	100.0
2017	99.8	99.7	102.8	102.9
2018	106.0	105.9	101.5†	101.6
Per cent change on previous year				
	DJ4L	DJK2	DJE2	DJP8
2002	15.1	16.6	3.9	4.9
2003	–4.0	–6.2	2.3	3.6
2004	–4.5	–6.0	2.7	3.0
2005	1.3	6.8	–5.3	–4.6
2006	–4.6	–5.8	–0.5	–0.5
2007	–2.7	–0.8	–1.0	–0.7
2008	3.1	2.7	–3.1	–1.9†
2009	–7.1	–15.6	–9.7	–9.0
2010	–6.6	–7.1	14.4	13.2
2011	10.3	14.3	2.7	4.6
2012	–7.0	–2.7	–6.1	–6.7
2013	9.7	6.8	1.4	–0.9
2014	–2.8	–2.7	5.7	3.1
2015	10.1	13.7	2.2	3.2
2016	–5.9	–9.0	1.4	1.5
2017	–0.2	–0.3	2.8	2.9
2018	6.2†	6.3	–1.3†	–1.3

† indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

8 Labour input indices: Workers, productivity jobs and productivity hours

United Kingdom

Seasonally adjusted (2016=100)

	Whole economy				Production		Manufacturing		Services	
	Workers	Jobs	Hours	Ratio of jobs to workers	Productivity jobs	Productivity hours	Productivity jobs	Productivity hours	Productivity jobs	Productivity hours
Section	A-U	A-U	A-U	A-U	B-E	B-E	C	C	G-U	G-U
Indices										
	TXEL	LNNM	LZVA	TXET	DJW6	DK3S	DJW9	DK3V	DK2G	DK56
2015	98.6	98.8	98.7	100.2	100.2	100.8	100.2	100.8	98.7	98.5
2016	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2017	101.0	100.9	101.1	99.9	101.7	101.3	101.7	100.8	100.6	100.7
2018	102.2	102.1	101.9	99.9	103.7	102.3	103.3	101.4	101.7	101.6
2015 Q2	98.0	98.3	98.1	100.3	100.3	100.8	100.1	100.3†	98.3	98.1
Q3	98.7	98.8	98.2	100.1	100.3	99.8	100.1	99.8	98.9	98.1
Q4	99.4	99.4	100.1	100.1	99.5	101.7†	99.7	102.1	99.3	99.9
2016 Q1	99.5	99.4	99.6	100.0	99.6	100.3	99.5	100.3	99.4	99.6
Q2	100.0	100.0	99.9	100.0	100.4	100.1	100.6	100.3	100.0	99.8
Q3	100.2	100.3	100.1	100.1	100.0	99.5	100.0	99.6	100.4	100.3
Q4	100.3	100.3	100.5	100.0	100.0	100.1	99.9†	99.8	100.2	100.4
2017 Q1	100.6	100.6	101.1	99.9	100.1	99.9	100.0	99.5	100.3	100.9
Q2	101.0	100.9	101.6	99.9	101.3	101.4	101.2	100.9	100.7	101.3
Q3	101.0	101.0	100.6	100.0	102.5	101.7	102.6	101.4	100.5	100.1
Q4	101.3	101.3	100.9	100.0	103.1	102.0	102.9	101.3	100.8	100.6
2018 Q1	101.9	101.8	101.4	100.0	103.6	102.4	103.4	101.6	101.4†	101.1
Q2	102.0	101.9	101.5	99.9	103.7	102.5	103.3	101.4	101.5	101.1†
Q3	102.2	102.1	102.4	99.9	104.0	102.7	103.6	101.5	101.7	102.2
Q4	102.7	102.6	102.3	99.9	103.4	101.6	102.7	101.0	102.3	102.2
2019 Q1	103.0	102.8	103.4	99.8	103.2	104.3	102.6	103.5	102.6	103.0
Per cent change on quarter a year ago										
	DIW9	LNNO	LZVC		DJW8	DK3U	DJX3	DK44	DK2I	DK58
2015 Q2	1.3	1.2	1.1		1.8	1.1	1.4	0.6	1.4	1.6
Q3	1.6	1.4	0.8		0.8	0.2	0.2	0.2	1.6	1.2
Q4	1.9	1.7	2.2		–0.2	1.2	–0.3	1.7	1.8	2.5
2016 Q1	1.3	1.0	1.4		–1.1	–0.5	–1.4	–0.7	1.2	1.6
Q2	2.0	1.8	1.8		0.1	–0.7	0.5	–	1.7	1.7
Q3	1.5	1.4	2.0		–0.4	–0.3	–	–0.2	1.5	2.2
Q4	1.0	0.9	0.4		0.5	–1.5†	0.1	–2.3†	1.0	0.5
2017 Q1	1.2	1.1	1.5		0.5	–0.3	0.5	–0.8	0.9	1.3
Q2	1.0	0.9	1.8		0.9	1.3	0.6	0.6	0.6	1.5
Q3	0.8	0.7	0.6		2.5	2.2	2.5	1.8	0.2	–0.2
Q4	1.0	1.0	0.4		3.1	1.9	3.1	1.5	0.6	0.2
2018 Q1	1.2	1.3	0.3		3.5	2.5	3.3	2.2	1.1	0.2
Q2	1.0	1.0	–0.1		2.4	1.1	2.1	0.5	0.9	–0.2
Q3	1.1	1.1	1.8		1.4	1.0	1.0	–	1.2	2.1
Q4	1.4	1.3	1.5		0.3	–0.4	–0.2†	–0.3	1.4	1.6
2019 Q1	1.1	1.0	2.0		–0.4	1.9	–0.8	1.8	1.2	1.9
Per cent change on previous quarter										
	DIW8	TXAJ	TXBU		DJW7	DK3T	DJX2	DK3Y	DK2H	DK57
2015 Q2	–0.1	–0.2	–0.1		–0.4	–†	–0.7	–0.6†	0.1	0.1
Q3	0.7	0.6	–		–	–1.0	–0.1	–0.5	0.5	–
Q4	0.7	0.6	2.0		–0.8	1.9	–0.3	2.3	0.4	1.8
2016 Q1	0.1	–	–0.5		0.1†	–1.4	–0.3†	–1.7	0.1	–0.3
Q2	0.6	0.6	0.3		0.8	–0.1	1.1	–	0.7	0.2
Q3	0.2	0.3	0.2		–0.5	–0.6	–0.6	–0.7	0.3	0.5
Q4	0.1	–	0.4		0.1	0.6	–0.2	0.1	–0.1	0.1
2017 Q1	0.3	0.3	0.6		0.1	–0.2	0.2	–0.3	0.1	0.5
Q2	0.4	0.4	0.5		1.2	1.5	1.2	1.4	0.4	0.4
Q3	–	–	–1.0		1.2	0.2	1.4	0.5	–0.1	–1.2
Q4	0.3	0.3	0.2		0.6	0.3	0.4	–0.2	0.3	0.5
2018 Q1	0.6	0.6	0.5		0.6	0.4	0.4	0.4	0.6	0.5
Q2	0.1	0.1	0.2		0.1	0.1	–	–0.3	0.1	–0.1†
Q3	0.1	0.2	0.9		0.2	0.2	0.2	0.1	0.1	1.1
Q4	0.5	0.5	–0.1		–0.5	–1.0	–0.8	–0.5	0.6	–
2019 Q1	0.3	0.3	1.1		–0.2	2.6	–0.2	2.5	0.4	0.8

† indicates that estimates are new or have been revised. The period marked is the earliest in the table to have been revised.

R1 REVISIONS ANALYSIS
Revisions since previously published estimates

	Whole economy					
	Output per worker		Output per job		Output per hour worked	
	Per cent change on quarter a year ago	Per cent change on previous quarter	Per cent change on quarter a year ago	Per cent change on previous quarter	Per cent change on quarter a year ago	Per cent change on previous quarter
	A4YN	A4YO	LNNP	DMWR	LZVD	TXBB
2014 Q4	–	–	–	–	–	–
2015 Q1	–	–	–	–	–	–
Q2	–	–	–	–	–	–
Q3	–	–	–	–	–	–
Q4	–	–	–	–	–	–
2016 Q1	–	–	–	–	–	–
Q2	–	–	–	–	–	–
Q3	–	–	–	–	–	–
Q4	–	–	–	–	–	–
2017 Q1	–	–	–	–	–	–
Q2	–	–	–	–	–	–
Q3	–	–	–	–	–	–
Q4	–	–	–	–	–	–
2018 Q1	–	–	–	–	–	–
Q2	–	–	–	–	–	–
Q3	–	–	–	–	–	–
Q4	–	–	–	–	–	–

	Manufacturing			
	Output per job		Output per hour worked	
	Per cent change on quarter a year ago	Per cent change on previous quarter	Per cent change on quarter a year ago	Per cent change on previous quarter
	DJ4R	DJ4Q	DJK8	DJK7
2014 Q4	–	–	–	–0.1
2015 Q1	–	0.1	–	0.2
Q2	–	–	–	–0.1
Q3	–	–	–	–
Q4	–	–	–	–0.1
2016 Q1	–	–	–	0.1
Q2	–	–	–	–0.1
Q3	–	–	–	–0.1
Q4	–	–	–0.2	–0.2
2017 Q1	–	–	0.1	0.4
Q2	–	–	–	–0.2
Q3	–	–	–	–0.1
Q4	–	–	–	–0.3
2018 Q1	–	–	0.1	0.5
Q2	–	–	–	–0.2
Q3	–	–	–	–0.1
Q4	0.1	0.1	–	–0.3

	Services			
	Output per job		Output per hour worked	
	Per cent change on quarter a year ago	Per cent change on previous quarter	Per cent change on quarter a year ago	Per cent change on previous quarter
	DJE5	DJE4	DJQ3	DJQ2
2014 Q4	–	–	–	–
2015 Q1	–	–	–	–
Q2	–	–	–	–
Q3	–	–	–	–
Q4	–	–	–	–
2016 Q1	–	–	–	–
Q2	–	–	–	–0.1
Q3	–	–	–	–
Q4	–	–	–	–
2017 Q1	–	–	–	–
Q2	–	–	–	–
Q3	–	–0.1	–	–
Q4	–	–	–	0.1
2018 Q1	–	–	–	–
Q2	–	–	–	–
Q3	–	–	–	–
Q4	–	–	–	–