

Statistical bulletin

# Labour productivity, UK: July to September 2019

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



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# 1 . Main points

- Labour productivity for Quarter 3 (July to Sept) 2019, as measured by output per hour, has risen by 0.1% compared with the same quarter in the previous year; this follows four previous quarters of contraction.
- Services saw a rise in labour productivity of 0.1% compared with the same quarter in the previous year; in contrast, manufacturing saw a 1.9% decrease.
- Output per job rose by 0.1% for Quarter 3 2019 compared with the same quarter in the previous year, with gross value added (GVA) growing slightly faster than the number of jobs.

## 2 . Labour productivity growth compared with the same quarter a year ago

Productivity is the main driver of economic growth and determines the long-term economic health of a nation. Productivity growth is important because more output per hour increases salaries and profits, improves standards of living, and enables the tax-take to grow, which allows government to fund better public services.

Labour productivity has demonstrated weak growth since the economic downturn, while in the previous 10 years it was close to historical long-term average growth rates of 2.0% per year. This sustained period of minimal labour productivity growth has been labelled the UK's "productivity puzzle", and is arguably the defining economic question of our age.

In December 2019, the Royal Statistical Society named the estimated average annual increase in UK productivity in the decade or so since the financial crisis the "[Statistic of the decade](#)", reflecting the significance of the unusual weakness observed since the 2008 economic downturn.

Continuing this story, labour productivity in the latest quarter, as measured on an output per hour basis, has risen by 0.1% compared with Quarter 3 (July to Sept) 2018. This follows four consecutive quarters of negative growth. Compared with the same quarter a year ago, gross value added (GVA) and hours worked grew by 1.0%. However, GVA grew slightly more than hours worked, resulting in the small growth in labour productivity of 0.1% per hour.

Figure 1 shows output per hour log 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.

The median labour productivity growth of the post-downturn period is around one-quarter of what it was during the pre-downturn period (starting with Quarter 1 (Jan to Mar) 1998), shown by the 50th percentile lines. The post-downturn 75th percentile is slightly lower than the pre-downturn 25th percentile, showing the weakness of the UK's labour productivity growth since the 2008 crisis.

Noticeably in the post-downturn period, as shown by the 25th percentile, a quarter of output per hour log growth rate estimates fell below negative 0.1%, when compared with the same quarter a year ago. In contrast, between Quarter 1 1998 and Quarter 2 (Apr to June) 2008, Quarter 4 (Oct to Dec) 2004 was the only quarter to record negative productivity growth.

## **Figure 1: Output per hour has risen by 0.1% from same quarter a year ago, following four consecutive quarters of contraction.**

Output per hour, quarter-on-same-quarter a year ago log growth rates, seasonally adjusted, Quarter 1 (Jan to Mar) 1998 to Quarter 3 (July to Sept) 2019, UK

### **Notes:**

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

### [Data download](#)

Figure 2 presents output per job growth rates compared with the same quarter in the previous year. Output per job grew by 0.1%, as both gross value added (GVA) and the number of jobs grew by 1.0%, but GVA grew slightly more.

Since the downturn, one-quarter of the recorded output per job quarter-on-year growth rates are beneath 0.3%. Comparing the post-downturn median with the pre-downturn counterpart has similar results to that found for output per hour, where output per job post-downturn median growth is just over one-third of what it was in the pre-downturn period. The highest recorded growth rate for output per job in the post-downturn period is less than than the 75th percentile of the pre-downturn period.

However, the differences between the 25th and 75th percentiles during the post-downturn periods is 0.8 percentage points, compared with the pre-downturn periods of 1.3 percentage points. 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 has risen by 0.1% from the same quarter a year ago**

Output per job, quarter-on-same-quarter a year ago log growth rates, seasonally adjusted, Quarter 1 (Jan to Mar) 1998 to Quarter 3 (July to Sept) 2019, UK

### **Notes:**

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

### [Data download](#)

Decomposing output per hour into contributions from GVA and hours worked, in the latest quarter GVA and hours worked both grew by 1%. However, GVA grew marginally more than hours resulting in a 0.1% growth in output per hour, compared with the same quarter of the previous year.

Figure 3 shows quarter-on-year log growth in productivity, decomposed to show growth rates of GVA and hours. The sign of hours is reversed to reflect that, all other things equal, a rise in hours leads to an equal fall in labour productivity. Since the downturn, quarter-on-year log growth in GVA averaged 1.7%, 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.

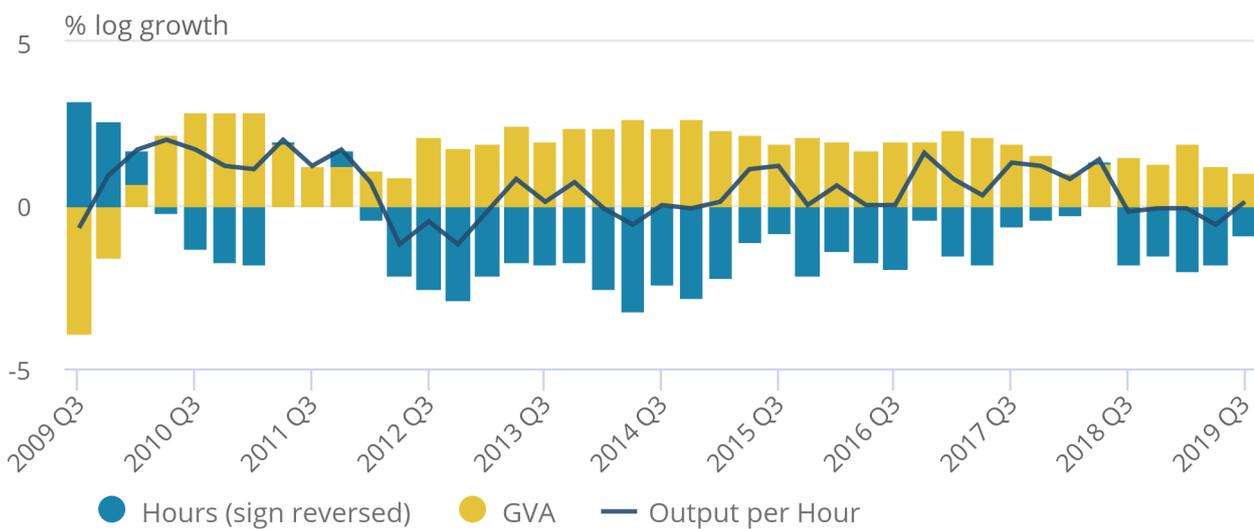
Subsequent years experienced a slump in productivity with consecutive periods of negative growth between the period of Quarter 2 2012 to Quarter 1 2013. Since then, productivity growth has remained somewhat weak, having brief instances of growth around 1.5% in Quarter 4 2016 and Quarter 2 2018.

**Figure 3: The 0.1% increase in output per hour reflects gross value added growing slightly more than hours worked**

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

Figure 3: The 0.1% increase in output per hour reflects gross value added growing slightly more than hours worked

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



Source: Office for National Statistics

### 3 . Output per hour in services and manufacturing

Services output per hour, compared with the same period a year ago, increased by 0.1% in the latest quarter (Quarter 3 (July to Sept) 2019), with gross value added (GVA) growing faster than hours worked, at 1.6% and 1.5% respectively. During the same period, manufacturing labour productivity decreased by 1.9%, with hours worked growing 0.9% while GVA fell by 1.1%.

Compared with the previous quarter, output per hour in services has increased by 0.9% and output per hour in manufacturing has decreased by 0.4%.

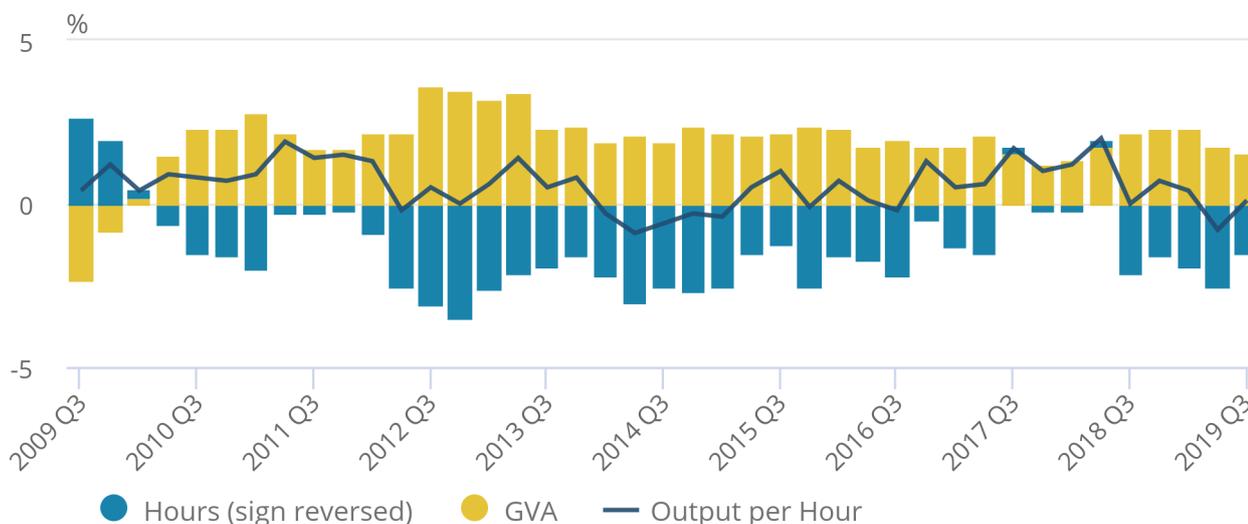
Figures 4 and 5 show the quarter-on-year log growth rates of output per hour and its components for services and manufacturing since Quarter 3 2009. During this period, output per hour for services has generally shown moderate growth, with GVA usually growing a little faster than hours worked.

**Figure 4: Services productivity rose by 0.1% as gross value added (GVA) grew slightly faster than hours worked**

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

Figure 4: Services productivity rose by 0.1% as gross value added (GVA) grew slightly faster than hours worked

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



Source: Office for National Statistics

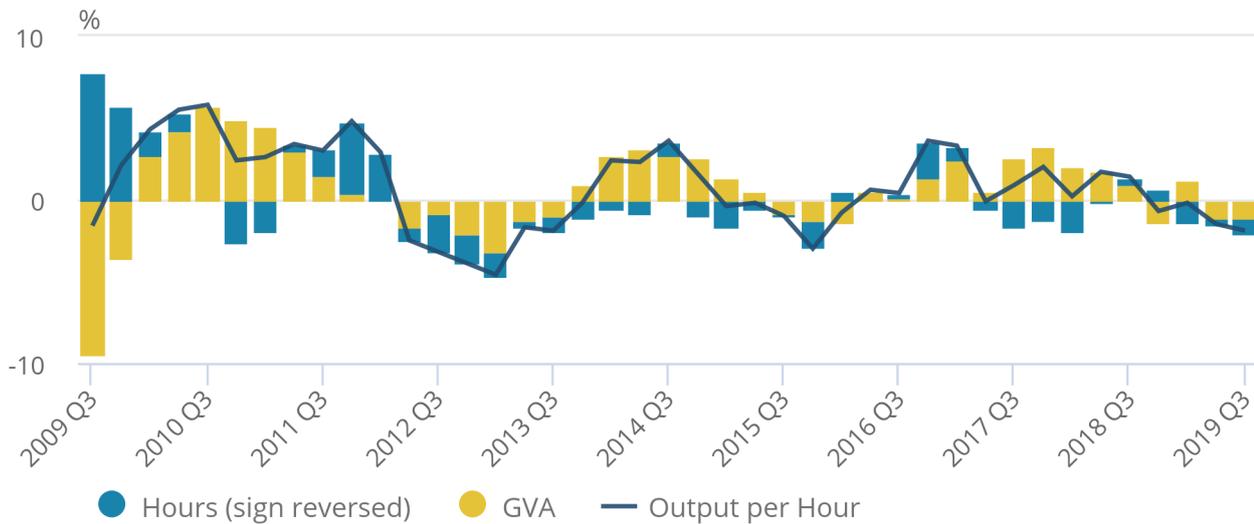
Output per hour in manufacturing has been more volatile, with periods of pronounced negative productivity growth. In several quarters, GVA and hours moved in different directions so that GVA growth and sign-reversed growth in hours worked appear on the same side of the horizontal axis in Figure 5.

**Figure 5: Manufacturing output per hour fell 1.9% as hours worked grew by 0.9%; this was in contrast to GVA, which fell by 1.1%**

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

Figure 5: Manufacturing output per hour fell 1.9% as hours worked grew by 0.9%; this was in contrast to GVA, which fell by 1.1%

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



Source: Office for National Statistics

## 4 . Labour productivity data

### [Labour Productivity Tables 1 to 8 and R1](#)

Dataset LPROD01 | Released on 8 January 2020

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

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

Dataset | Released on 8 January 2020

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

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

Dataset | Released on 8 January 2020

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 worked hours, GVA estimates, output per hour series and prices deflators. Includes data disaggregated by sector. Also contains quarter on quarter, quarter on same quarter last year and annual formats for selected outputs.

### [Labour productivity by industry division](#)

Dataset | Released on 8 January 2020

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 GVA divided by productivity hours. Output per hour at current prices are displayed in pounds sterling. Experimental Statistics, UK.

### [Labour productivity: revisions triangles](#)

Dataset | Released on 8 January 2020

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 on 8 January 2020

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 on 8 January 2020

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

View all data used in this statistical bulletin on the [Related data](#) page.

## 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 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.

## 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, while the productivity hours system considers 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:

$$\Delta \text{Labour Productivity} = \Delta \left( \frac{\text{Output in Gross Value Added (GVA) terms}}{\text{Labour Inputs (hours, workers or jobs)}} \right) \approx \Delta GVA - \Delta \text{Labour Input}$$

## 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 percentage growth rates and these statistics 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 gross value added and income data resulting from quarterly national accounts, affecting time periods since 2018.

Revisions to the current data also reflect revisions to jobs data resulting from an annual benchmarking to the Business Register and Employment Survey, and other [revisions to workforce jobs estimates](#) affecting all time periods. Revisions resulting from seasonal adjustment affect all periods.

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](#).

## Quality and methodology

More quality and methodology information on strengths, limitations, appropriate uses, and how the data were created is available in the [Labour productivity QMI](#).

## 7 . Strength and limitations

This release reports labour productivity estimates for Quarter 3 (July to Sept) 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, [Quarterly estimates of public service productivity](#) and [Quarterly estimates of multi-factor productivity](#) and articles on productivity-related topics and data.

## Comparability and consistency

The output statistics in this release are consistent with the latest [Quarterly national accounts](#) published on 20 December 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](#).

In October 2018 the Office for National Statistics (ONS) [informed](#) users that we will no longer be publishing estimates on International comparisons of productivity, due to an ongoing review of the methodology. In December 2018 the OECD published a working paper "[International productivity gaps: Are labour input measures comparable?](#)", which showed the methodologies, data sources and adjustments used to estimate labour inputs varied significantly across countries. The ONS published an [article](#) exploring these differences and the impact they had on our ICP statistics.

## Seasonal adjustment

Unless otherwise stated all figures are seasonally adjusted.

## Data quality

More information on the strengths and limitations of the data, as well as the quality and accuracy of the data, is available in the [Labour productivity QMI](#).

## 8 . Related links

### [Multi-factor productivity estimates, UK: July to September 2019](#)

Article | Released 8 January 2020

Growth accounting estimates for the UK market sector and 10 industry groups. These are Experimental Statistics.

### [Public service productivity: quarterly, UK, July to September 2019](#)

Article | Released 8 January 2020

Contains the latest experimental estimates for quarterly UK total public service productivity, inputs and output. These are Experimental Statistics.

### [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.

### [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.

### [Analysis of compositional changes in hours worked in the UK](#)

Article | Released 7 August 2019

Analysis of the changes in the UK labour composition during and after the economic downturn, and international comparison over the last five years.

# 1 Labour productivity key measures

## United Kingdom

Seasonally adjusted (2016=100)

| Section                                      | 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    |
|  | A-U                | A-U                | A-U                | B-E                | B-E               | C                  | C                  | G-U                | G-U                |
| <b>Indices</b>                               | A4YM               | LNNN               | LZVB               | DJ4M               | DJK3              | DJ4P               | DJK6               | DJE3               | DJP9               |
| 2015   | 99.5               | 99.3               | 99.4               | 98.7               | 98.2 <sup>†</sup> | 99.6               | 99.0               | 99.4               | 99.5               |
| 2016   | 100.0              | 100.0              | 100.0              | 100.0              | 100.0             | 100.0              | 100.0              | 100.0              | 100.0              |
| 2017   | 101.0              | 101.0              | 100.9              | 100.1 <sup>†</sup> | 100.6             | 100.7 <sup>†</sup> | 101.6 <sup>†</sup> | 101.1              | 101.0              |
| 2018   | 101.1 <sup>†</sup> | 101.2              | 101.4              | 99.1               | 100.5             | 100.3              | 102.2              | 101.9 <sup>†</sup> | 101.9 <sup>†</sup> |
| 2015 Q4                                      | 99.6               | 99.5               | 98.8               | 99.0               | 96.9              | 99.4               | 97.2 <sup>†</sup>  | 99.8               | 99.2               |
| 2016 Q1                                      | 99.7               | 99.7               | 99.6               | 99.1               | 98.5              | 99.5 <sup>†</sup>  | 98.7               | 100.0              | 99.7               |
| Q2   | 99.7               | 99.7               | 99.8               | 100.3              | 100.6             | 100.1              | 100.4              | 99.5 <sup>†</sup>  | 99.7               |
| Q3   | 100.0              | 99.9               | 100.1              | 99.9               | 100.4             | 99.7               | 100.1              | 99.9               | 100.0              |
| Q4   | 100.6              | 100.7              | 100.5              | 100.6              | 100.5             | 100.7              | 100.8              | 100.7              | 100.5 <sup>†</sup> |
| 2017 Q1                                      | 100.9              | 101.0              | 100.4              | 101.3 <sup>†</sup> | 101.4             | 101.5              | 102.1              | 100.9              | 100.2              |
| Q2   | 100.8              | 100.8              | 100.1              | 99.7               | 99.5 <sup>†</sup> | 100.1              | 100.3              | 100.9              | 100.3              |
| Q3   | 101.1              | 101.2              | 101.5              | 99.5               | 100.3             | 99.9               | 101.0              | 101.3              | 101.7              |
| Q4   | 101.2              | 101.2              | 101.6              | 100.1              | 101.1             | 101.1              | 102.8              | 101.3              | 101.6              |
| 2018 Q1                                      | 100.7              | 100.7              | 101.2              | 99.4               | 100.6             | 100.5              | 102.3              | 101.1              | 101.4              |
| Q2   | 101.1              | 101.2              | 101.5              | 98.8               | 100.0             | 100.1              | 102.0              | 101.8              | 102.3              |
| Q3   | 101.5              | 101.6              | 101.2 <sup>†</sup> | 99.3               | 100.6             | 100.2              | 102.5              | 102.2              | 101.8              |
| Q4   | 101.2 <sup>†</sup> | 101.3 <sup>†</sup> | 101.5              | 99.0               | 100.7             | 100.2              | 102.0              | 102.2              | 102.3              |
| 2019 Q1                                      | 101.5              | 101.7              | 101.1              | 100.6              | 99.7              | 102.8              | 102.1              | 102.3              | 101.8              |
| Q2   | 101.0              | 101.1              | 100.9              | 98.4               | 99.1              | 99.7               | 100.5              | 101.9              | 101.5              |
| Q3   | 101.6              | 101.6              | 101.3              | 98.3               | 99.2              | 99.9               | 100.5              | 102.5              | 101.9              |
| <b>Per cent change on quarter a year ago</b> | A4YN               | LNNP               | LZVD               | DJ4O               | DJK5              | DJ4R               | DJK8               | DJE5               | DJQ3               |
| 2015 Q4                                      | 0.2                | 0.4                | -                  | 0.5                | -0.8 <sup>†</sup> | -1.0               | -2.9               | 0.7                | -0.1 <sup>†</sup>  |
| 2016 Q1                                      | 0.6                | 1.0                | 0.6                | 1.2                | 0.5               | -                  | -0.8 <sup>†</sup>  | 1.1 <sup>†</sup>   | 0.7                |
| Q2   | -0.3               | -                  | -                  | 1.2 <sup>†</sup>   | 2.0               | 0.1 <sup>†</sup>   | 0.6                | 0.1                | 0.1                |
| Q3   | 0.5                | 0.5                | -                  | 1.3                | 1.3               | 0.2                | 0.4                | 0.5                | -0.2               |
| Q4   | 1.1                | 1.2                | 1.7                | 1.7                | 3.7               | 1.3                | 3.7                | 0.8                | 1.4                |
| 2017 Q1                                      | 1.2                | 1.2                | 0.8                | 2.2                | 3.0               | 2.0                | 3.4                | 0.9                | 0.5                |
| Q2   | 1.1                | 1.2                | 0.3                | -0.6               | -1.1              | -                  | -0.1               | 1.5                | 0.6                |
| Q3   | 1.1                | 1.2                | 1.3                | -0.4               | -0.1              | 0.2                | 0.9                | 1.4                | 1.8                |
| Q4   | 0.6                | 0.6                | 1.2                | -0.6               | 0.6               | 0.4                | 2.0                | 0.6                | 1.0                |
| 2018 Q1                                      | -0.2               | -0.2               | 0.8                | -1.8               | -0.8              | -1.0               | 0.2                | 0.3                | 1.2                |
| Q2   | 0.3                | 0.3                | 1.4                | -0.9               | 0.5               | -0.1               | 1.7                | 0.9                | 2.0                |
| Q3   | 0.4                | 0.4 <sup>†</sup>   | -0.2               | -0.2               | 0.3               | 0.4                | 1.4                | 1.0                | -                  |
| Q4   | - <sup>†</sup>     | 0.1                | -0.1 <sup>†</sup>  | -1.0               | -0.4              | -0.9               | -0.7               | 0.9                | 0.7                |
| 2019 Q1                                      | 0.8                | 0.9                | -0.1               | 1.2                | -1.0              | 2.3                | -0.2               | 1.1                | 0.4                |
| Q2   | -0.1               | -0.1               | -0.6               | -0.4               | -0.9              | -0.4               | -1.4               | -                  | -0.8               |
| Q3   | 0.1                | 0.1                | 0.1                | -1.0               | -1.4              | -0.3               | -1.9               | 0.3                | 0.1                |
| <b>Per cent change on previous quarter</b>   | A4YO               | DMWR               | TXBB               | DJ4N               | DJK4              | DJ4Q               | DJK7               | DJE4               | DJQ2               |
| 2015 Q4                                      | -                  | 0.1                | -1.3               | 0.4                | -2.3              | -0.1 <sup>†</sup>  | -2.5               | 0.4                | -1.0               |
| 2016 Q1                                      | 0.2                | 0.2                | 0.8                | 0.1                | 1.6 <sup>†</sup>  | 0.1                | 1.6 <sup>†</sup>   | 0.1                | 0.6                |
| Q2   | -0.1               | -0.1               | 0.2                | 1.2                | 2.2               | 0.6                | 1.7                | -0.5 <sup>†</sup>  | -                  |
| Q3   | 0.3                | 0.3                | 0.3                | -0.4               | -0.2              | -0.4               | -0.3               | 0.4                | 0.3                |
| Q4   | 0.6                | 0.7                | 0.3                | 0.7                | 0.1               | 1.1                | 0.7                | 0.8                | 0.5 <sup>†</sup>   |
| 2017 Q1                                      | 0.3                | 0.3                | -                  | 0.6                | 0.9               | 0.8                | 1.3                | 0.2                | -0.3               |
| Q2   | -0.1               | -0.1               | -0.3               | -1.6               | -1.9              | -1.4               | -1.7               | -                  | 0.1                |
| Q3   | 0.3                | 0.3                | 1.3                | -0.2 <sup>†</sup>  | 0.8               | -0.3               | 0.7                | 0.3                | 1.5                |
| Q4   | 0.1                | 0.1                | 0.2                | 0.6                | 0.8               | 1.3                | 1.7                | 0.1                | -0.2               |
| 2018 Q1                                      | -0.5               | -0.5               | -0.4 <sup>†</sup>  | -0.7               | -0.5              | -0.6               | -0.5               | -0.2               | -0.2               |
| Q2   | 0.4                | 0.5                | 0.3 <sup>†</sup>   | -0.6               | -0.7              | -0.4               | -0.2               | 0.7                | 0.9                |
| Q3   | 0.4 <sup>†</sup>   | 0.4 <sup>†</sup>   | -0.3               | 0.5                | 0.6               | 0.2                | 0.5                | 0.4                | -0.5               |
| Q4   | -0.3               | -0.3               | 0.3                | -0.3               | 0.1               | -                  | -0.4               | -                  | 0.5                |
| 2019 Q1                                      | 0.3                | 0.3                | -0.4               | 1.6                | -1.1              | 2.6                | -                  | 0.1                | -0.5               |
| Q2   | -0.5               | -0.6               | -0.2               | -2.2               | -0.6              | -3.1               | -1.5               | -0.4               | -0.3               |
| Q3   | 0.6                | 0.6                | 0.4                | -0.1               | 0.1               | 0.2                | -                  | 0.7                | 0.3                |

<sup>†</sup>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)

| Divisions                                    | Food, beverages & tobacco | Textiles, wearing apparel & leather | Wood & paper products, & printing | Chemicals, Pharmaceuticals | Rubber, plastics & non-metallic minerals | Basic metals & metal products | Computer etc products, Electrical equipment | Machinery & equipment | Transport equipment | Coke & refined petroleum, Other manufacturing |
|--|---------------------------|-------------------------------------|-----------------------------------|----------------------------|--|-------------------------------|---|-----------------------|---------------------|---|
|  | 10-12                     | 13-15                               | 16-18                             | 20-21                      | 22-23                                    | 24-25                         | 26-27                                       | 28                    | 29-30               | 19,31-33                                      |
| <b>Level (£k)</b>                            |                           |                                     |                                   |                            |  |                               |   |                       |                     |   |
| 2016   | 67.8                      | 45.2                                | 46.1                              | 169.4                      | 52.7                                     | 53.1                          | 79.8  | 78.4                  | 85.4                | 56.2  |
| <b>Indices</b>                               |                           |                                     |                                   |                            |  |                               |   |                       |                     |   |
|  | DJ54                      | DJ57                                | DJ5F                              | DJ5I                       | DJ5L                                     | DJB2                          | DJB7  | DJC2                  | DJC5                | DJD3  |
| 2015   | 102.9                     | 104.4                               | 100.0 <sup>†</sup>                | 97.2                       | 95.3                                     | 99.6                          | 96.2  | 98.0                  | 102.1 <sup>†</sup>  | 99.0 <sup>†</sup>                             |
| 2016   | 100.0                     | 100.0                               | 100.0                             | 100.0                      | 100.0                                    | 100.0                         | 100.0                                       | 100.0                 | 100.0               | 100.0   |
| 2017   | 97.9 <sup>†</sup>         | 102.7 <sup>†</sup>                  | 103.5                             | 92.0 <sup>†</sup>          | 94.0 <sup>†</sup>                        | 98.6 <sup>†</sup>             | 99.6 <sup>†</sup>                           | 103.0 <sup>†</sup>    | 108.6               | 105.5   |
| 2018   | 99.9                      | 101.8                               | 102.4                             | 90.8                       | 91.7                                     | 92.7                          | 109.0                                       | 105.2                 | 103.6               | 103.6   |
| 2015 Q4                                      | 102.7                     | 103.6                               | 100.8 <sup>†</sup>                | 97.6                       | 96.8                                     | 97.4 <sup>†</sup>             | 97.1  | 95.2                  | 101.3 <sup>†</sup>  | 98.8  |
| 2016 Q1                                      | 101.3                     | 108.5                               | 99.0                              | 97.9                       | 100.2                                    | 100.2                         | 96.9  | 96.6 <sup>†</sup>     | 99.0                | 99.1  |
| Q2   | 101.0 <sup>†</sup>        | 98.6                                | 100.3                             | 102.4                      | 101.7                                    | 99.4                          | 100.1                                       | 97.7                  | 101.7               | 97.5  |
| Q3   | 99.3                      | 97.8 <sup>†</sup>                   | 100.3                             | 98.8                       | 98.6                                     | 100.3                         | 99.3  | 102.7                 | 97.9                | 102.0 <sup>†</sup>                            |
| Q4   | 98.4                      | 95.0                                | 100.5                             | 100.9                      | 99.5                                     | 100.1                         | 103.6                                       | 103.1                 | 101.4               | 101.4   |
| 2017 Q1                                      | 99.2                      | 99.1                                | 104.5                             | 91.4                       | 97.0                                     | 99.0                          | 101.6                                       | 105.8                 | 106.0               | 109.5   |
| Q2   | 97.2                      | 101.1                               | 101.7                             | 93.9                       | 94.8                                     | 98.1                          | 99.3 <sup>†</sup>                           | 102.0                 | 106.5               | 105.1   |
| Q3   | 97.4                      | 103.2                               | 104.5                             | 90.9                       | 91.7 <sup>†</sup>                        | 97.2                          | 97.7  | 101.0                 | 111.0               | 102.7   |
| Q4   | 97.9                      | 107.3                               | 103.4                             | 91.8 <sup>†</sup>          | 92.3                                     | 100.3                         | 100.0                                       | 103.3                 | 110.8               | 104.8   |
| 2018 Q1                                      | 97.9                      | 97.7                                | 101.4                             | 90.1                       | 90.0                                     | 97.0                          | 107.4                                       | 105.7                 | 108.3               | 103.8   |
| Q2   | 100.1                     | 102.1                               | 102.1                             | 90.3                       | 91.1                                     | 92.7                          | 108.3                                       | 104.7                 | 104.3               | 102.5   |
| Q3   | 100.8                     | 101.5                               | 101.7                             | 88.0                       | 92.9                                     | 93.0                          | 108.5                                       | 105.1                 | 103.1               | 104.6   |
| Q4   | 100.6                     | 106.0                               | 104.3                             | 94.9                       | 92.8                                     | 87.9                          | 111.7                                       | 105.3                 | 98.7                | 103.7   |
| 2019 Q1                                      | 103.1                     | 106.6                               | 106.6                             | 100.1                      | 95.4                                     | 91.1                          | 117.3                                       | 103.9                 | 99.8                | 104.3   |
| Q2   | 101.0                     | 105.2                               | 104.1                             | 92.8                       | 90.8                                     | 87.5                          | 114.7                                       | 101.0                 | 94.4                | 107.6   |
| Q3   | 102.5                     | 106.8                               | 100.5                             | 94.0                       | 89.6                                     | 88.1                          | 111.5                                       | 99.5                  | 101.7               | 104.5   |
| <b>Per cent change on quarter a year ago</b> |                           |                                     |                                   |                            |  |                               |   |                       |                     |   |
|  | DJ56                      | DJ5E                                | DJ5H                              | DJ5K                       | DJ5N                                     | DJB6                          | DJB9  | DJC4                  | DJD2                | DJD7  |
| 2015 Q4                                      | -2.0                      | 8.0 <sup>†</sup>                    | 0.9                               | 2.6                        | 6.2                                      | -4.3                          | 2.2   | -14.7                 | -0.8 <sup>†</sup>   | -4.0  |
| 2016 Q1                                      | -2.1                      | 7.6                                 | -0.9                              | 1.1                        | 5.9 <sup>†</sup>                         | -1.7                          | 4.4   | -5.2 <sup>†</sup>     | -2.8                | 0.5   |
| Q2   | -1.3 <sup>†</sup>         | -5.9                                | 1.5 <sup>†</sup>                  | 5.7                        | 8.6                                      | -2.7                          | 2.7   | -0.6                  | -2.4                | -2.7  |
| Q3   | -3.5                      | -9.6                                | -                                 | 1.3 <sup>†</sup>           | 2.6                                      | 3.4                           | 2.0   | 6.0                   | -3.3                | 3.9   |
| Q4   | -4.3                      | -8.2                                | -0.3                              | 3.3                        | 2.8                                      | 2.8                           | 6.7   | 8.3                   | 0.1                 | 2.7 <sup>†</sup>                              |
| 2017 Q1                                      | -2.1                      | -8.6                                | 5.5                               | -6.6                       | -3.2                                     | -1.2                          | 4.8   | 9.5                   | 7.1                 | 10.5  |
| Q2   | -3.7                      | 2.5                                 | 1.4                               | -8.3                       | -6.7                                     | -1.3 <sup>†</sup>             | -0.9  | 4.4                   | 4.8                 | 7.8   |
| Q3   | -1.9                      | 5.5                                 | 4.2                               | -7.9                       | -7.1                                     | -3.1                          | -1.7 <sup>†</sup>                           | -1.6                  | 13.3                | 0.7   |
| Q4   | -0.5                      | 12.9                                | 2.9                               | -9.0                       | -7.2                                     | 0.2                           | -3.4  | 0.2                   | 9.3                 | 3.3   |
| 2018 Q1                                      | -1.3                      | -1.4                                | -2.9                              | -1.5                       | -7.2                                     | -2.0                          | 5.7   | -                     | 2.2                 | -5.3  |
| Q2   | 3.0                       | 1.0                                 | 0.4                               | -3.8                       | -4.0                                     | -5.5                          | 9.0   | 2.6                   | -2.1                | -2.5  |
| Q3   | 3.5                       | -1.6                                | -2.7                              | -3.2                       | 1.4                                      | -4.3                          | 11.1  | 4.1                   | -7.1                | 1.9   |
| Q4   | 2.8                       | -1.2                                | 1.0                               | 3.4                        | 0.6                                      | -12.3                         | 11.7  | 1.9                   | -10.9               | -1.0  |
| 2019 Q1                                      | 5.3                       | 9.1                                 | 5.1                               | 11.1                       | 5.9                                      | -6.1                          | 9.2   | -1.7                  | -7.9                | 0.6   |
| Q2   | 0.9                       | 3.0                                 | 2.0                               | 2.7                        | -0.2                                     | -5.6                          | 6.0   | -3.5                  | -9.5                | 5.0   |
| Q3   | 1.7                       | 5.2                                 | -1.3                              | 6.7                        | -3.5                                     | -5.3                          | 2.7   | -5.3                  | -1.4                | -0.1  |
| <b>Per cent change on previous quarter</b>   |                           |                                     |                                   |                            |  |                               |   |                       |                     |   |
|  | DJ55                      | DJ58                                | DJ5G                              | DJ5J                       | DJ5M                                     | DJB3                          | DJB8  | DJC3                  | DJC6                | DJD4  |
| 2015 Q4                                      | -0.2 <sup>†</sup>         | -4.3 <sup>†</sup>                   | 0.5 <sup>†</sup>                  | 0.2                        | 0.7                                      | 0.4                           | -0.3  | -1.7 <sup>†</sup>     | -                   | 0.6 <sup>†</sup>                              |
| 2016 Q1                                      | -1.4                      | 4.8                                 | -1.8                              | 0.3                        | 3.5                                      | 2.9                           | -0.2  | 1.4                   | -2.3                | 0.4   |
| Q2   | -0.3                      | -9.1                                | 1.3                               | 4.6                        | 1.4 <sup>†</sup>                         | -0.8 <sup>†</sup>             | 3.3   | 1.1                   | 2.7                 | -1.6  |
| Q3   | -1.6                      | -0.8                                | -                                 | -3.6                       | -3.0                                     | 0.8                           | -0.8  | 5.1                   | -3.7                | 4.6   |
| Q4   | -1.0                      | -2.8                                | 0.2                               | 2.1 <sup>†</sup>           | 0.9                                      | -0.2                          | 4.3   | 0.4                   | 3.6                 | -0.6  |
| 2017 Q1                                      | 0.9                       | 4.3                                 | 4.0                               | -9.4                       | -2.6                                     | -1.1                          | -1.9  | 2.6                   | 4.5                 | 8.0   |
| Q2   | -2.0                      | 2.0                                 | -2.7                              | 2.7                        | -2.2                                     | -0.9                          | -2.3  | -3.6                  | 0.5                 | -4.0  |
| Q3   | 0.2                       | 2.1                                 | 2.8                               | -3.1                       | -3.4                                     | -0.9                          | -1.6 <sup>†</sup>                           | -1.0                  | 4.2                 | -2.3  |
| Q4   | 0.5                       | 3.9                                 | -1.1                              | 0.9                        | 0.7                                      | 3.2                           | 2.4   | 2.3                   | -0.1                | 2.0   |
| 2018 Q1                                      | -                         | -8.9                                | -1.8                              | -1.9                       | -2.5                                     | -3.2                          | 7.3   | 2.3                   | -2.3                | -1.0  |
| Q2   | 2.2                       | 4.5                                 | 0.6                               | 0.3                        | 1.1                                      | -4.5                          | 0.8   | -1.0                  | -3.7                | -1.2  |
| Q3   | 0.7                       | -0.6                                | -0.3                              | -2.5                       | 2.0                                      | 0.3                           | 0.3   | 0.4                   | -1.1                | 2.1   |
| Q4   | -0.2                      | 4.4                                 | 2.6                               | 7.8                        | -0.1                                     | -5.5                          | 2.9   | 0.2                   | -4.3                | -0.9  |
| 2019 Q1                                      | 2.5                       | 0.6                                 | 2.2                               | 5.5                        | 2.7                                      | 3.6                           | 5.0   | -1.3                  | 1.1                 | 0.6   |
| Q2   | -2.1                      | -1.4                                | -2.3                              | -7.3                       | -4.8                                     | -4.0                          | -2.2  | -2.8                  | -5.4                | 3.1   |
| Q3   | 1.6                       | 1.5                                 | -3.5                              | 1.3                        | -1.3                                     | 0.7                           | -2.9  | -1.5                  | 7.7                 | -2.9  |

<sup>†</sup>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)

| Divisions                                    | Food, beverages & tobacco | Textiles, wearing apparel & leather | Wood & paper products, & printing | Chemicals, Pharmaceuticals | Rubber, plastics & non-metallic minerals | Basic metals & metal products | Computer etc products, Electrical equipment | Machinery & equipment     | Transport equipment       | Coke & refined petroleum, Other manufacturing |
|--|---------------------------|-------------------------------------|-----------------------------------|----------------------------|--|-------------------------------|---|---------------------------|---------------------------|---|
|  | 10-12                     | 13-15                               | 16-18                             | 20-21                      | 22-23                                    | 24-25                         | 26-27                                       | 28                        | 29-30                     | 19,31-33                                      |
| <b>Level (£)</b>                             |                           |                                     |                                   |                            |  |                               |   |                           |                           |   |
| 2016   | 36.9                      | 26.3                                | 24.7                              | 94.4                       | 27.4                                     | 27.8                          | 43.8  | 41.8                      | 45.0                      | 30.4  |
| <b>Indices</b>                               |                           |                                     |                                   |                            |  |                               |   |                           |                           |   |
| 2015 Q4                                      | DJK9<br>99.6 <sup>†</sup> | DJL4<br>108.5 <sup>†</sup>          | DJL7<br>94.4                      | DJM4<br>96.5 <sup>†</sup>  | DJM7<br>93.0                             | DJN4<br>92.0 <sup>†</sup>     | DJN7<br>99.1                                | DJO5<br>92.4 <sup>†</sup> | DJO8<br>99.5              | DJP3<br>101.0                                 |
| 2016 Q1                                      | 100.0                     | 105.1                               | 95.8 <sup>†</sup>                 | 99.9                       | 98.2 <sup>†</sup>                        | 98.7                          | 97.4  | 98.0                      | 98.6 <sup>†</sup>         | 99.5  |
| Q2   | 98.8                      | 100.3                               | 99.7                              | 102.4                      | 101.3                                    | 101.4                         | 100.3 <sup>†</sup>                          | 96.4                      | 103.8                     | 99.3  |
| Q3   | 101.4                     | 99.0                                | 103.7                             | 97.9                       | 98.9                                     | 100.9                         | 100.1                                       | 100.7                     | 97.5                      | 100.6   |
| Q4   | 99.9                      | 95.6                                | 100.9                             | 99.7                       | 101.6                                    | 99.0                          | 102.2                                       | 104.8                     | 100.2                     | 100.6   |
| 2017 Q1                                      | 100.5                     | 98.1                                | 102.7                             | 90.4                       | 96.1                                     | 103.7                         | 101.4                                       | 105.9                     | 104.5                     | 110.9   |
| Q2   | 101.3                     | 100.3                               | 100.1                             | 91.0                       | 91.6                                     | 98.0                          | 102.7                                       | 103.5                     | 104.0                     | 106.2 <sup>†</sup>                            |
| Q3   | 100.4                     | 100.4                               | 102.7                             | 95.9                       | 87.4                                     | 99.8                          | 102.2                                       | 103.6                     | 109.7                     | 105.6   |
| Q4   | 99.0                      | 104.6                               | 105.7                             | 93.8                       | 87.7                                     | 103.3                         | 107.5                                       | 106.2                     | 112.1                     | 108.5   |
| 2018 Q1                                      | 100.4                     | 99.9                                | 101.3                             | 95.0                       | 87.7                                     | 95.4                          | 113.0                                       | 109.1                     | 110.3                     | 109.1   |
| Q2   | 99.6                      | 99.8                                | 104.8                             | 98.7                       | 94.8                                     | 91.8                          | 109.2                                       | 105.0                     | 105.6                     | 109.9   |
| Q3   | 101.7                     | 105.5                               | 102.5                             | 92.3                       | 92.3                                     | 92.4                          | 113.9                                       | 105.9                     | 108.6                     | 111.1   |
| Q4   | 101.7                     | 103.6                               | 104.9                             | 94.7                       | 92.0                                     | 89.1                          | 117.4                                       | 110.7                     | 101.5                     | 107.9   |
| 2019 Q1                                      | 101.0                     | 103.6                               | 107.1                             | 99.4                       | 90.9                                     | 91.6                          | 117.5                                       | 104.5                     | 99.2                      | 105.3   |
| Q2   | 99.0                      | 109.2                               | 106.9                             | 94.4                       | 87.5                                     | 88.9                          | 117.9                                       | 102.3                     | 95.7                      | 110.9   |
| Q3   | 100.5                     | 109.2                               | 103.4                             | 94.1                       | 90.9                                     | 87.1                          | 115.5                                       | 99.1                      | 100.5                     | 109.4   |
| <b>Per cent change on quarter a year ago</b> |                           |                                     |                                   |                            |  |                               |   |                           |                           |   |
| 2015 Q4                                      | DJL3<br>-7.1 <sup>†</sup> | DJL6<br>17.1                        | DJM3<br>-4.3                      | DJM6<br>1.9 <sup>†</sup>   | DJM9<br>7.7                              | DJN6<br>-8.2 <sup>†</sup>     | DJN9<br>-0.9                                | DJO7<br>-15.6             | DJP2<br>-0.4              | DJP5<br>-4.4                                  |
| 2016 Q1                                      | -4.0                      | 6.3                                 | -5.6 <sup>†</sup>                 | 2.0                        | 11.7 <sup>†</sup>                        | -1.0                          | 1.3   | -3.5                      | -1.1                      | -4.9  |
| Q2   | -4.8                      | -1.6 <sup>†</sup>                   | 1.7                               | 3.5                        | 14.7                                     | -                             | 3.0   | -2.2 <sup>†</sup>         | 3.5                       | -6.8  |
| Q3   | 0.9                       | -10.9                               | 6.5                               | -1.1                       | 7.3                                      | 3.2                           | -1.1  | 2.2                       | -3.4                      | -3.4 <sup>†</sup>                             |
| Q4   | 0.2                       | -11.9                               | 6.8                               | 3.4                        | 9.2                                      | 7.5                           | 3.1   | 13.4                      | 0.7                       | -0.4  |
| 2017 Q1                                      | 0.5                       | -6.7                                | 7.2                               | -9.5                       | -2.1                                     | 5.1                           | 4.2 <sup>†</sup>                            | 8.0                       | 6.0 <sup>†</sup>          | 11.4  |
| Q2   | 2.6                       | -0.1                                | 0.5                               | -11.1                      | -9.6                                     | -3.4                          | 2.4   | 7.3                       | 0.2                       | 6.9   |
| Q3   | -0.9                      | 1.4                                 | -1.0                              | -2.1                       | -11.6                                    | -1.1                          | 2.1   | 2.9                       | 12.6                      | 5.0   |
| Q4   | -0.9                      | 9.4                                 | 4.8                               | -6.0                       | -13.6                                    | 4.4                           | 5.2   | 1.3                       | 11.9                      | 7.8   |
| 2018 Q1                                      | -                         | 1.9                                 | -1.3                              | 5.1                        | -8.8                                     | -8.1                          | 11.4  | 3.0                       | 5.5                       | -1.6  |
| Q2   | -1.7                      | -0.5                                | 4.7                               | 8.4                        | 3.4                                      | -6.3                          | 6.3   | 1.5                       | 1.5                       | 3.5   |
| Q3   | 1.3                       | 5.1                                 | -0.2                              | -3.7                       | 5.6                                      | -7.4                          | 11.4  | 2.2                       | -1.0                      | 5.2   |
| Q4   | 2.7                       | -0.9                                | -0.8                              | 1.0                        | 4.8                                      | -13.7                         | 9.2   | 4.3                       | -9.5                      | -0.6  |
| 2019 Q1                                      | 0.6                       | 3.7                                 | 5.6                               | 4.6                        | 3.7                                      | -3.9                          | 4.0   | -4.2                      | -10.0                     | -3.5  |
| Q2   | -0.6                      | 9.4                                 | 2.0                               | -4.3                       | -7.7                                     | -3.2                          | 7.9   | -2.6                      | -9.4                      | 1.0   |
| Q3   | -1.2                      | 3.5                                 | 0.8                               | 2.0                        | -1.5                                     | -5.8                          | 1.4   | -6.3                      | -7.4                      | -1.5  |
| <b>Per cent change on previous quarter</b>   |                           |                                     |                                   |                            |  |                               |   |                           |                           |   |
| 2015 Q4                                      | DJL2<br>-0.8              | DJL5<br>-2.3 <sup>†</sup>           | DJM2<br>-3.0 <sup>†</sup>         | DJM5<br>-2.6               | DJM8<br>0.9 <sup>†</sup>                 | DJN5<br>-5.8 <sup>†</sup>     | DJN8<br>-2.0                                | DJO6<br>-6.3 <sup>†</sup> | DJO9<br>-1.3 <sup>†</sup> | DJP4<br>-3.0                                  |
| 2016 Q1                                      | 0.3                       | -3.1                                | 1.4                               | 3.6                        | 5.6                                      | 7.2                           | -1.8 <sup>†</sup>                           | 6.1                       | -1.0                      | -1.4  |
| Q2   | -1.2 <sup>†</sup>         | -4.6                                | 4.1                               | 2.5                        | 3.2                                      | 2.8                           | 3.1   | -1.6                      | 5.3                       | -0.3  |
| Q3   | 2.6                       | -1.3                                | 4.1                               | -4.4 <sup>†</sup>          | -2.4                                     | -0.5                          | -0.3  | 4.4                       | -6.1                      | 1.3 <sup>†</sup>                              |
| Q4   | -1.5                      | -3.5                                | -2.8                              | 1.9                        | 2.7                                      | -1.9                          | 2.1   | 4.0                       | 2.8                       | -   |
| 2017 Q1                                      | 0.6                       | 2.6                                 | 1.8                               | -9.3                       | -5.4                                     | 4.8                           | -0.8  | 1.1                       | 4.3                       | 10.2  |
| Q2   | 0.9                       | 2.2                                 | -2.5                              | 0.7                        | -4.7                                     | -5.6                          | 1.3   | -2.3                      | -0.5                      | -4.3  |
| Q3   | -0.9                      | 0.1                                 | 2.6                               | 5.3                        | -4.6                                     | 1.9                           | -0.5  | 0.1                       | 5.5                       | -0.5  |
| Q4   | -1.4                      | 4.1                                 | 2.9                               | -2.2                       | 0.3                                      | 3.5                           | 5.2   | 2.5                       | 2.2                       | 2.7   |
| 2018 Q1                                      | 1.5                       | -4.5                                | -4.2                              | 1.3                        | -0.1                                     | -7.7                          | 5.1   | 2.7                       | -1.6                      | 0.5   |
| Q2   | -0.8                      | -0.1                                | 3.5                               | 3.8                        | 8.1                                      | -3.7                          | -3.3  | -3.7                      | -4.2                      | 0.7   |
| Q3   | 2.1                       | 5.7                                 | -2.2                              | -6.5                       | -2.6                                     | 0.7                           | 4.2   | 0.8                       | 2.8                       | 1.1   |
| Q4   | -                         | -1.8                                | 2.3                               | 2.6                        | -0.4                                     | -3.6                          | 3.1   | 4.6                       | -6.6                      | -2.9  |
| 2019 Q1                                      | -0.7                      | -                                   | 2.1                               | 5.0                        | -1.2                                     | 2.8                           | -   | -5.6                      | -2.2                      | -2.4  |
| Q2   | -2.0                      | 5.4                                 | -0.1                              | -5.0                       | -3.7                                     | -2.9                          | 0.3   | -2.2                      | -3.5                      | 5.4   |
| Q3   | 1.5                       | -                                   | -3.3                              | -0.4                       | 3.9                                      | -2.1                          | -2.0  | -3.1                      | 5.1                       | -1.4  |

<sup>†</sup> 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 | Accommodation & food services | Information & communication | Finance & insurance | Real estate activities | Professional, scientific & technical activities | Admin & support services | Government services | Arts, entertainment & recreation | Other services     |
|--|--|---------------------|-------------------------------|-----------------------------|---------------------|------------------------|---|--------------------------|---------------------|----------------------------------|--------------------|
| Section                                      | G  | H                   | I                             | J                           | K                   | L                      | M   | N                        | O-Q                 | R                                | S-U                |
| <b>Level (£k)</b>                            |  |                     |                               |                             |                     |                        |   |                          |                     |                                  |                    |
| 2016   | 36.4   | 48.9                | 21.6                          | 80.3                        | 109.6               | 436.4                  | 50.8  | 31.4                     | 37.3                | 29.6                             | 34.9               |
| <b>Indices</b>                               |  |                     |                               |                             |                     |                        |   |                          |                     |                                  |                    |
|  | DJE6   | DJE9                | DJF4                          | DJF7                        | DJG5                | DJH4                   | DJH7  | DJI2                     | DJI5                | DJJ3                             | DJJ6               |
| 2015   | 95.8 <sup>†</sup>                              | 107.6 <sup>†</sup>  | 101.9                         | 95.8 <sup>†</sup>           | 96.7                | 97.6                   | 101.3   | 99.5                     | 100.3               | 102.6                            | 103.9              |
| 2016   | 100.0  | 100.0               | 100.0                         | 100.0                       | 100.0               | 100.0                  | 100.0   | 100.0                    | 100.0               | 100.0                            | 100.0              |
| 2017   | 102.4  | 102.4               | 100.4 <sup>†</sup>            | 100.3                       | 99.8 <sup>†</sup>   | 97.0                   | 105.8 <sup>†</sup>                              | 102.1 <sup>†</sup>       | 100.9 <sup>†</sup>  | 100.4 <sup>†</sup>               | 101.8 <sup>†</sup> |
| 2018   | 105.1  | 102.4               | 101.0                         | 105.1                       | 97.9                | 94.5 <sup>†</sup>      | 108.7   | 104.6                    | 100.4               | 100.6                            | 102.1              |
| 2015 Q4                                      | 96.4   | 103.6               | 102.5                         | 97.1 <sup>†</sup>           | 98.0                | 99.7                   | 101.1 <sup>†</sup>                              | 99.4                     | 100.9               | 104.0                            | 107.9              |
| 2016 Q1                                      | 99.0 <sup>†</sup>                              | 102.3               | 101.1                         | 99.2                        | 98.4                | 98.6 <sup>†</sup>      | 100.1   | 100.1                    | 100.2               | 103.4                            | 100.3 <sup>†</sup> |
| Q2   | 99.4   | 100.4               | 100.5 <sup>†</sup>            | 98.1                        | 99.1                | 98.7                   | 99.7  | 98.4 <sup>†</sup>        | 99.6                | 101.1                            | 100.5              |
| Q3   | 99.5   | 98.7                | 99.2                          | 100.8                       | 101.2               | 100.5                  | 99.7  | 100.3                    | 99.8                | 99.4                             | 97.5               |
| Q4   | 102.0  | 98.6                | 99.2                          | 101.9                       | 101.3               | 102.3                  | 100.4   | 101.2                    | 100.4               | 96.1                             | 101.7              |
| 2017 Q1                                      | 102.0  | 102.3 <sup>†</sup>  | 99.9                          | 99.2                        | 101.2 <sup>†</sup>  | 96.3                   | 103.2   | 102.0                    | 101.3               | 100.5                            | 100.1              |
| Q2   | 101.9  | 101.4               | 100.2                         | 100.0                       | 100.2               | 98.6                   | 104.9   | 101.2                    | 100.8               | 102.9                            | 102.7              |
| Q3   | 102.9  | 102.5               | 100.8                         | 100.3                       | 99.6                | 97.3                   | 106.8   | 102.1                    | 101.0               | 98.7 <sup>†</sup>                | 102.4              |
| Q4   | 102.7  | 103.3               | 100.8                         | 102.0                       | 98.3                | 95.7                   | 108.1   | 103.2                    | 100.5 <sup>†</sup>  | 99.3                             | 102.1              |
| 2018 Q1                                      | 102.6  | 102.8               | 100.2                         | 102.1                       | 98.3                | 92.6                   | 109.0   | 103.6                    | 99.9                | 99.4                             | 102.2              |
| Q2   | 104.7  | 102.7               | 100.3                         | 104.7                       | 98.7                | 95.8                   | 109.8   | 104.9                    | 100.1               | 99.4                             | 102.2              |
| Q3   | 106.2  | 102.6               | 101.3                         | 106.6                       | 97.8                | 95.9                   | 108.7   | 104.3                    | 100.7               | 100.9                            | 103.0              |
| Q4   | 106.9  | 101.4               | 102.3                         | 106.8                       | 96.8                | 93.5                   | 107.6   | 105.5                    | 101.0               | 102.6                            | 101.0              |
| 2019 Q1                                      | 108.3  | 100.7               | 102.2                         | 109.0                       | 96.3                | 96.4                   | 105.3   | 106.8                    | 101.3               | 100.0                            | 98.7               |
| Q2   | 109.3  | 97.8                | 100.6                         | 109.7                       | 95.9                | 96.6                   | 103.6   | 106.3                    | 101.2               | 100.0                            | 96.7               |
| Q3   | 110.5  | 98.9                | 100.1                         | 110.4                       | 97.0                | 93.0                   | 104.8   | 106.3                    | 101.5               | 100.7                            | 100.5              |
| <b>Per cent change on quarter a year ago</b> | DJE8   | DJF3                | DJF6                          | DJF9                        | DJG8                | DJH6                   | DJH9  | DJI4                     | DJI7                | DJJ5                             | DJJ8               |
| 2015 Q4                                      | 2.2  | -7.5                | 2.5                           | 4.7                         | -2.9                | 2.5                    | -0.6  | 2.0                      | 0.6                 | -0.3                             | 4.9                |
| 2016 Q1                                      | 4.7  | -7.9 <sup>†</sup>   | -0.2                          | 5.7                         | -1.2                | 2.6                    | -0.3  | 1.5                      | 0.9                 | 1.5                              | -1.5               |
| Q2   | 3.6  | -7.8                | -1.6                          | 2.4                         | 4.2                 | 2.6                    | -2.6  | -0.8 <sup>†</sup>        | -0.8 <sup>†</sup>   | -1.1                             | -2.0               |
| Q3   | 3.7  | -7.5                | -2.6 <sup>†</sup>             | 4.7 <sup>†</sup>            | 7.7                 | 1.9                    | -1.6  | -0.4                     | -1.0                | -2.9                             | -5.9 <sup>†</sup>  |
| Q4   | 5.8  | -4.9                | -3.2                          | 5.0                         | 3.4                 | 2.6 <sup>†</sup>       | -0.7  | 1.8                      | -0.5                | -7.6 <sup>†</sup>                | -5.7               |
| 2017 Q1                                      | 3.0  | -                   | -1.2                          | -                           | 2.8                 | -2.2                   | 3.1   | 1.9                      | 1.1                 | -2.8                             | -0.2               |
| Q2   | 2.5  | 0.9                 | -0.2                          | 1.9                         | 1.1 <sup>†</sup>    | -                      | 5.2 <sup>†</sup>                                | 2.8                      | 1.2                 | 1.8                              | 2.1                |
| Q3   | 3.4  | 3.9                 | 1.7                           | -0.5                        | -1.6                | -3.2                   | 7.1   | 1.8                      | 1.2                 | -0.7                             | 5.0                |
| Q4   | 0.6 <sup>†</sup>                               | 4.8                 | 1.6                           | 0.1                         | -2.9                | -6.5                   | 7.6   | 2.0                      | -                   | 3.3                              | 0.3                |
| 2018 Q1                                      | 0.6  | 0.5                 | 0.3                           | 3.0                         | -2.8                | -3.9                   | 5.6   | 1.5                      | -1.4                | -1.1                             | 2.1                |
| Q2   | 2.7  | 1.3                 | 0.1                           | 4.7                         | -1.5                | -2.9                   | 4.6   | 3.7                      | -0.7                | -3.4                             | -0.4               |
| Q3   | 3.2  | -                   | 0.4                           | 6.4                         | -1.8                | -1.4                   | 1.7   | 2.1                      | -0.2                | 2.3                              | 0.6                |
| Q4   | 4.1  | -1.9                | 1.5                           | 4.7                         | -1.5                | -2.2                   | -0.5  | 2.2                      | 0.5                 | 3.3                              | -1.0               |
| 2019 Q1                                      | 5.6  | -2.0                | 2.1                           | 6.7                         | -2.0                | 4.1                    | -3.4  | 3.1                      | 1.5                 | 0.6                              | -3.4               |
| Q2   | 4.4  | -4.8                | 0.3                           | 4.8                         | -2.9                | 0.8                    | -5.6  | 1.3                      | 1.1                 | 0.6                              | -5.4               |
| Q3   | 4.1  | -3.6                | -1.2                          | 3.5                         | -0.8                | -3.0                   | -3.5  | 1.9                      | 0.8                 | -0.2                             | -2.4               |
| <b>Per cent change on previous quarter</b>   |  |                     |                               |                             |                     |                        |   |                          |                     |                                  |                    |
| 2015 Q4                                      | 2.2  | -7.5                | 2.5                           | 4.7                         | -2.9                | 2.5                    | -0.6  | 2.0                      | 0.6                 | -0.3                             | 4.9                |
| 2016 Q1                                      | 4.7  | -7.9 <sup>†</sup>   | -0.2                          | 5.7                         | -1.2                | 2.6                    | -0.3  | 1.5                      | 0.9                 | 1.5                              | -1.5               |
| Q2   | 3.6  | -7.8                | -1.6                          | 2.4                         | 4.2                 | 2.6                    | -2.6  | -0.8 <sup>†</sup>        | -0.8 <sup>†</sup>   | -1.1                             | -2.0               |
| Q3   | 3.7  | -7.5                | -2.6 <sup>†</sup>             | 4.7 <sup>†</sup>            | 7.7                 | 1.9                    | -1.6  | -0.4                     | -1.0                | -2.9                             | -5.9 <sup>†</sup>  |
| Q4   | 5.8  | -4.9                | -3.2                          | 5.0                         | 3.4                 | 2.6 <sup>†</sup>       | -0.7  | 1.8                      | -0.5                | -7.6 <sup>†</sup>                | -5.7               |
| 2017 Q1                                      | 3.0  | -                   | -1.2                          | -                           | 2.8                 | -2.2                   | 3.1   | 1.9                      | 1.1                 | -2.8                             | -0.2               |
| Q2   | 2.5  | 0.9                 | -0.2                          | 1.9                         | 1.1 <sup>†</sup>    | -                      | 5.2 <sup>†</sup>                                | 2.8                      | 1.2                 | 1.8                              | 2.1                |
| Q3   | 3.4  | 3.9                 | 1.7                           | -0.5                        | -1.6                | -3.2                   | 7.1   | 1.8                      | 1.2                 | -0.7                             | 5.0                |
| Q4   | 0.6 <sup>†</sup>                               | 4.8                 | 1.6                           | 0.1                         | -2.9                | -6.5                   | 7.6   | 2.0                      | -                   | 3.3                              | 0.3                |
| 2018 Q1                                      | 0.6  | 0.5                 | 0.3                           | 3.0                         | -2.8                | -3.9                   | 5.6   | 1.5                      | -1.4                | -1.1                             | 2.1                |
| Q2   | 2.7  | 1.3                 | 0.1                           | 4.7                         | -1.5                | -2.9                   | 4.6   | 3.7                      | -0.7                | -3.4                             | -0.4               |
| Q3   | 3.2  | -                   | 0.4                           | 6.4                         | -1.8                | -1.4                   | 1.7   | 2.1                      | -0.2                | 2.3                              | 0.6                |
| Q4   | 4.1  | -1.9                | 1.5                           | 4.7                         | -1.5                | -2.2                   | -0.5  | 2.2                      | 0.5                 | 3.3                              | -1.0               |
| 2019 Q1                                      | 5.6  | -2.0                | 2.1                           | 6.7                         | -2.0                | 4.1                    | -3.4  | 3.1                      | 1.5                 | 0.6                              | -3.4               |
| Q2   | 4.4  | -4.8                | 0.3                           | 4.8                         | -2.9                | 0.8                    | -5.6  | 1.3                      | 1.1                 | 0.6                              | -5.4               |
| Q3   | 4.1  | -3.6                | -1.2                          | 3.5                         | -0.8                | -3.0                   | -3.5  | 1.9                      | 0.8                 | -0.2                             | -2.4               |

<sup>†</sup> 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 | Accommodation & food services | Information & communication | Finance & insurance | Real estate activities | Professional, scientific & technical activities | Admin & support services | Government services | Arts, entertainment & recreation | Other services     |
|--|--|---------------------|-------------------------------|-----------------------------|---------------------|------------------------|---|--------------------------|---------------------|----------------------------------|--------------------|
| Section                                      | G  | H                   | I                             | J                           | K                   | L                      | M   | N                        | O-Q                 | R                                | S-U                |
| <b>Level (£)</b>                             |  |                     |                               |                             |                     |                        |   |                          |                     |                                  |                    |
| 2016   | 23.7   | 26.8                | 15.8                          | 44.5                        | 61.7                | 280.7                  | 28.7  | 20.2                     | 26.0                | 22.5                             | 23.5               |
| <b>Indices</b>                               |  |                     |                               |                             |                     |                        |   |                          |                     |                                  |                    |
|  | DJQ4   | DJQ7                | DJR2                          | DJR5                        | DJS3                | DJS6                   | DJS9  | DJT7                     | DJU2                | DJV6                             | DJV9               |
| 2015   | 95.9   | 106.6               | 101.7                         | 97.9                        | 98.7                | 99.2                   | 100.2 <sup>†</sup>                              | 100.9 <sup>†</sup>       | 99.8                | 100.7                            | 104.9 <sup>†</sup> |
| 2016   | 100.0  | 100.0               | 100.0                         | 100.0                       | 100.0               | 100.0                  | 100.0   | 100.0                    | 100.0               | 100.0                            | 100.0              |
| 2017   | 101.5  | 102.9 <sup>†</sup>  | 100.5 <sup>†</sup>            | 100.2 <sup>†</sup>          | 101.8 <sup>†</sup>  | 98.6                   | 107.3   | 102.5                    | 100.4               | 95.8                             | 99.3               |
| 2018   | 105.0 <sup>†</sup>                             | 102.0               | 103.3                         | 105.7                       | 98.7                | 97.8 <sup>†</sup>      | 109.0   | 104.8                    | 100.2 <sup>†</sup>  | 97.1 <sup>†</sup>                | 99.1               |
| 2015 Q4                                      | 96.2   | 101.4               | 103.0                         | 99.1 <sup>†</sup>           | 98.7                | 104.0 <sup>†</sup>     | 99.1  | 98.5 <sup>†</sup>        | 99.5                | 101.2 <sup>†</sup>               | 107.8 <sup>†</sup> |
| 2016 Q1                                      | 98.1   | 102.3               | 101.5                         | 100.2                       | 98.3 <sup>†</sup>   | 101.7                  | 99.2 <sup>†</sup>                               | 101.5                    | 99.4                | 101.7                            | 100.2              |
| Q2   | 99.8   | 100.4 <sup>†</sup>  | 99.9                          | 99.4                        | 99.3                | 96.1                   | 101.4   | 96.4                     | 100.5               | 102.4                            | 98.6               |
| Q3   | 99.6 <sup>†</sup>                              | 98.8                | 99.4                          | 99.8                        | 100.6               | 103.5                  | 99.7  | 100.4                    | 99.9                | 99.4                             | 99.9               |
| Q4   | 102.4  | 98.5                | 99.2                          | 100.6                       | 101.8               | 98.7                   | 99.6  | 101.8                    | 100.2               | 96.5                             | 101.3              |
| 2017 Q1                                      | 101.4  | 101.9               | 99.5                          | 97.2                        | 103.0               | 96.4                   | 103.6   | 101.4                    | 100.2 <sup>†</sup>  | 97.6                             | 99.0               |
| Q2   | 101.2  | 102.2               | 99.3                          | 97.8                        | 101.9               | 98.4                   | 105.0   | 101.1                    | 99.8                | 99.3                             | 100.4              |
| Q3   | 102.5  | 103.8               | 101.2 <sup>†</sup>            | 101.4                       | 101.5               | 100.6                  | 110.4   | 102.9                    | 101.3               | 91.6                             | 100.1              |
| Q4   | 101.0  | 103.8               | 101.8                         | 104.3                       | 100.7               | 99.0                   | 110.2   | 104.7                    | 100.5               | 94.8                             | 97.9               |
| 2018 Q1                                      | 102.5  | 101.3               | 103.4                         | 103.3                       | 100.2               | 97.9                   | 109.1   | 104.0                    | 99.8                | 96.0                             | 98.3               |
| Q2   | 104.6  | 103.4               | 105.2                         | 105.3                       | 99.8                | 99.6                   | 110.7   | 104.3                    | 100.1               | 95.0                             | 100.3              |
| Q3   | 105.8  | 102.3               | 101.5                         | 107.1                       | 98.1                | 95.1                   | 108.0   | 105.2                    | 100.0               | 96.9                             | 100.1              |
| Q4   | 107.1  | 101.1               | 103.2                         | 107.0                       | 96.7                | 98.5                   | 108.2   | 105.8                    | 101.0               | 100.5                            | 97.8               |
| 2019 Q1                                      | 107.9  | 98.9                | 99.5                          | 108.9                       | 96.7                | 101.2                  | 105.5   | 108.3                    | 101.0               | 96.6                             | 95.5               |
| Q2   | 108.5  | 97.1                | 100.1                         | 109.8                       | 96.5                | 97.6                   | 104.6   | 108.8                    | 100.0               | 97.2                             | 94.8               |
| Q3   | 109.2  | 98.4                | 99.1                          | 109.7                       | 99.3                | 95.0                   | 105.4   | 107.7                    | 100.0               | 97.0                             | 98.7               |
| <b>Per cent change on quarter a year ago</b> |  |                     |                               |                             |                     |                        |   |                          |                     |                                  |                    |
|  | DJQ6   | DJQ9                | DJR4                          | DJR7                        | DJS5                | DJS8                   | DJT6  | DJT9                     | DJU7                | DJV8                             | DJW3               |
| 2015 Q4                                      | 2.5  | -10.0               | 1.8                           | 6.7                         | -3.2                | 5.8 <sup>†</sup>       | -1.1  | -1.9                     | 0.3 <sup>†</sup>    | -0.6                             | 2.0                |
| 2016 Q1                                      | 4.0  | -7.4                | 0.6                           | 4.7                         | -3.6 <sup>†</sup>   | 4.9                    | 0.2   | -                        | 0.3                 | 3.7                              | -1.2               |
| Q2   | 4.1 <sup>†</sup>                               | -7.3                | -1.4                          | 2.1                         | 1.9                 | -0.3                   | -   | -4.7 <sup>†</sup>        | 0.4                 | 1.5                              | -6.1 <sup>†</sup>  |
| Q3   | 2.5  | -7.0 <sup>†</sup>   | -2.2                          | 0.3                         | 3.9                 | 4.1                    | -1.3 <sup>†</sup>                               | -1.9                     | -0.7                | -3.2 <sup>†</sup>                | -5.1               |
| Q4   | 6.5  | -2.9                | -3.7 <sup>†</sup>             | 1.6                         | 3.1                 | -5.1                   | 0.5   | 3.3                      | 0.7                 | -4.6                             | -6.0               |
| 2017 Q1                                      | 3.3  | -0.4                | -2.0                          | -3.0 <sup>†</sup>           | 4.9                 | -5.2                   | 4.4   | -                        | 0.8                 | -4.0                             | -1.2               |
| Q2   | 1.4  | 1.8                 | -0.6                          | -1.6                        | 2.6                 | 2.4                    | 3.5   | 5.0                      | -0.7                | -3.0                             | 1.8                |
| Q3   | 2.8  | 5.1                 | 1.9                           | 1.6                         | 0.9                 | -2.8                   | 10.7  | 2.5                      | 1.3                 | -7.9                             | 0.2                |
| Q4   | -1.4   | 5.4                 | 2.6                           | 3.6                         | -1.1                | 0.3                    | 10.6  | 2.8                      | 0.3                 | -1.8                             | -3.4               |
| 2018 Q1                                      | 1.1  | -0.6                | 3.9                           | 6.3                         | -2.8                | 1.5                    | 5.4   | 2.5                      | -0.4                | -1.7                             | -0.7               |
| Q2   | 3.3  | 1.2                 | 6.0                           | 7.6                         | -2.0                | 1.3                    | 5.5   | 3.1                      | 0.3                 | -4.3                             | -                  |
| Q3   | 3.3  | -1.5                | 0.3                           | 5.5                         | -3.3                | -5.5                   | -2.2  | 2.3                      | -1.3                | 5.8                              | -                  |
| Q4   | 6.0  | -2.6                | 1.4                           | 2.6                         | -3.9                | -0.5                   | -1.8  | 1.0                      | 0.6                 | 6.0                              | -0.1               |
| 2019 Q1                                      | 5.3  | -2.4                | -3.8                          | 5.4                         | -3.5                | 3.4                    | -3.3  | 4.1                      | 1.2                 | 0.6                              | -2.9               |
| Q2   | 3.8  | -6.2                | -4.8                          | 4.3                         | -3.3                | -2.1                   | -5.5  | 4.3                      | -0.1                | 2.3                              | -5.5               |
| Q3   | 3.2  | -3.8                | -2.4                          | 2.5                         | 1.2                 | -0.1                   | -2.4  | 2.4                      | -                   | 0.1                              | -1.4               |
| <b>Per cent change on previous quarter</b>   |  |                     |                               |                             |                     |                        |   |                          |                     |                                  |                    |
|  | DJQ5   | DJQ8                | DJR3                          | DJR6                        | DJS4                | DJS7                   | DJT2  | DJT8                     | DJU6                | DJV7                             | DJW2               |
| 2015 Q4                                      | -1.0   | -4.6 <sup>†</sup>   | 1.4                           | -0.4 <sup>†</sup>           | 2.0                 | 4.7 <sup>†</sup>       | -1.8 <sup>†</sup>                               | -3.7 <sup>†</sup>        | -1.2 <sup>†</sup>   | -1.4 <sup>†</sup>                | 2.5                |
| 2016 Q1                                      | 2.0 <sup>†</sup>                               | 0.9                 | -1.4                          | 1.1                         | -0.5                | -2.2                   | 0.1   | 3.0                      | -0.1                | 0.5                              | -7.1 <sup>†</sup>  |
| Q2   | 1.8  | -1.8                | -1.6                          | -0.7                        | 1.1 <sup>†</sup>    | -5.6                   | 2.2   | -5.0                     | 1.1                 | 0.6                              | -1.6               |
| Q3   | -0.2   | -1.6                | -0.5                          | 0.4                         | 1.3                 | 7.7                    | -1.7  | 4.2                      | -0.6                | -2.9                             | 1.3                |
| Q4   | 2.8  | -0.3                | -0.1                          | 0.8                         | 1.2                 | -4.6                   | -0.1  | 1.4                      | 0.2                 | -2.9                             | 1.5                |
| 2017 Q1                                      | -1.1   | 3.4                 | 0.3                           | -3.4                        | 1.2                 | -2.3                   | 4.0   | -0.4                     | 0.1                 | 1.1                              | -2.3               |
| Q2   | -0.1   | 0.3                 | -0.3 <sup>†</sup>             | 0.7                         | -1.1                | 2.0                    | 1.3   | -0.3                     | -0.4                | 1.7                              | 1.3                |
| Q3   | 1.2  | 1.6                 | 2.0                           | 3.7                         | -0.4                | 2.3                    | 5.2   | 1.7                      | 1.4                 | -7.7                             | -0.3               |
| Q4   | -1.4   | -                   | 0.6                           | 2.8                         | -0.8                | -1.6                   | -0.2  | 1.8                      | -0.8                | 3.5                              | -2.2               |
| 2018 Q1                                      | 1.4  | -2.4                | 1.6                           | -0.9                        | -0.5                | -1.1                   | -1.0  | -0.7                     | -0.6                | 1.3                              | 0.4                |
| Q2   | 2.0  | 2.1                 | 1.7                           | 1.9                         | -0.4                | 1.7                    | 1.4   | 0.3                      | 0.3                 | -1.1                             | 2.1                |
| Q3   | 1.2  | -1.1                | -3.5                          | 1.7                         | -1.7                | -4.5                   | -2.5  | 0.8                      | -0.1                | 2.0                              | -0.2               |
| Q4   | 1.2  | -1.1                | 1.7                           | -0.1                        | -1.4                | 3.6                    | 0.2   | 0.6                      | 1.1                 | 3.7                              | -2.3               |
| 2019 Q1                                      | 0.8  | -2.2                | -3.6                          | 1.8                         | -0.1                | 2.7                    | -2.5  | 2.3                      | -                   | -3.8                             | -2.3               |
| Q2   | 0.5  | -1.9                | 0.6                           | 0.8                         | -0.2                | -3.6                   | -0.8  | 0.5                      | -1.0                | 0.6                              | -0.7               |
| Q3   | 0.6  | 1.4                 | -1.0                          | -0.1                        | 2.9                 | -2.6                   | 0.8   | -1.0                     | -                   | -0.2                             | 4.1                |

<sup>†</sup> 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 |
|         | GY14               | GY15                                  | GY16                                | GY17                   | GY18                                  | GY19                                |
| 2015    | 99.4               | ..                                    | ..                                  | 99.2                   | ..                                    | ..                                  |
| 2016    | 100.0              | ..                                    | ..                                  | 100.0                  | ..                                    | ..                                  |
| 2017    | 101.6              | ..                                    | ..                                  | 101.7                  | ..                                    | ..                                  |
| 2018    | 102.3 <sup>†</sup> | ..                                    | ..                                  | 102.7 <sup>†</sup>     | ..                                    | ..                                  |
| 2015 Q4 | 98.4               | -1.3                                  | -0.8 <sup>†</sup>                   | 97.7                   | -1.3                                  | -1.9 <sup>†</sup>                   |
| 2016 Q1 | 99.6 <sup>†</sup>  | -                                     | 1.3                                 | 99.5                   | -                                     | 1.8                                 |
| Q2      | 100.0              | -0.3 <sup>†</sup>                     | 0.4                                 | 100.1                  | 0.2                                   | 0.6                                 |
| Q3      | 99.8               | 0.6                                   | -0.2                                | 100.0                  | 0.3                                   | -0.1                                |
| Q4      | 100.6              | 2.2                                   | 0.8                                 | 100.5 <sup>†</sup>     | 2.8                                   | 0.5                                 |
| 2017 Q1 | 101.4              | 1.7                                   | 0.8                                 | 100.9                  | 1.4                                   | 0.4                                 |
| Q2      | 101.4              | 1.3                                   | -                                   | 100.7                  | 0.6 <sup>†</sup>                      | -0.1                                |
| Q3      | 101.7              | 1.9                                   | 0.3                                 | 102.3                  | 2.3                                   | 1.5                                 |
| Q4      | 102.1              | 1.5                                   | 0.4                                 | 102.9                  | 2.4                                   | 0.6                                 |
| 2018 Q1 | 101.6              | 0.3                                   | -0.4                                | 102.5                  | 1.6                                   | -0.4                                |
| Q2      | 102.3              | 0.9                                   | 0.7                                 | 102.9                  | 2.2                                   | 0.5                                 |
| Q3      | 102.7              | 1.0                                   | 0.4                                 | 102.8                  | 0.5                                   | -0.1                                |
| Q4      | 102.4              | 0.3                                   | -0.3                                | 102.8                  | -0.1                                  | -                                   |
| 2019 Q1 | 102.8              | 1.1                                   | 0.3                                 | 102.4                  | -                                     | -0.4                                |
| Q2      | 102.1              | -0.2                                  | -0.6                                | 102.3                  | -0.7                                  | -0.2                                |
| Q3      | 102.8              | 0.1                                   | 0.6                                 | 102.9                  | 0.1                                   | 0.6                                 |

<sup>†</sup> 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)

| Section                                 | Agriculture, forestry and fishing |                        | Construction      |                        |
|---|-----------------------------------|------------------------|-------------------|------------------------|
|   | Output per job                    | Output per hour worked | Output per job    | Output per hour worked |
|   | A                                 | A                      | F                 | F                      |
| <b>Level (£)</b>                        |                                   |                        |                   |                        |
| 2016                                    | 30 480.5                          | 14.4                   | 51 450.4          | 26.3                   |
| <b>Indices</b>                          |                                   |                        |                   |                        |
|   | DJ4K                              | DJJ9                   | DJD8              | DJP6                   |
| 2002                                    | 110.9 <sup>†</sup>                | 114.4 <sup>†</sup>     | 95.6 <sup>†</sup> | 94.7                   |
| 2003                                    | 106.7                             | 107.6                  | 97.8              | 98.1                   |
| 2004                                    | 101.7                             | 101.0                  | 100.4             | 101.1                  |
| 2005                                    | 103.0                             | 107.9                  | 95.1              | 96.4                   |
| 2006                                    | 98.2                              | 101.5                  | 94.7              | 95.9                   |
| 2007                                    | 95.2                              | 100.4                  | 93.7              | 95.2                   |
| 2008                                    | 98.5                              | 103.5                  | 90.9              | 93.3                   |
| 2009                                    | 91.7                              | 87.5                   | 82.0              | 84.9                   |
| 2010                                    | 85.6                              | 81.3                   | 93.9              | 96.1                   |
| 2011                                    | 95.7                              | 94.1                   | 95.7              | 99.8                   |
| 2012                                    | 87.6                              | 90.2                   | 89.4              | 92.7                   |
| 2013                                    | 96.3                              | 96.5                   | 90.8              | 92.1 <sup>†</sup>      |
| 2014                                    | 95.0                              | 95.3                   | 97.0              | 95.9                   |
| 2015                                    | 104.6                             | 108.4                  | 98.8              | 98.6                   |
| 2016                                    | 100.0                             | 100.0                  | 100.0             | 100.0                  |
| 2017                                    | 102.2                             | 102.2                  | 102.3             | 102.4                  |
| 2018                                    | 101.6                             | 102.0                  | 101.8             | 102.0                  |
| <b>Per cent change on previous year</b> |                                   |                        |                   |                        |
|   | DJ4L                              | DJK2                   | DJE2              | DJP8                   |
| 2002                                    | 15.1                              | 16.6                   | 3.9               | 4.9                    |
| 2003                                    | -3.8                              | -6.0                   | 2.3               | 3.6                    |
| 2004                                    | -4.6                              | -6.1                   | 2.7               | 3.0                    |
| 2005                                    | 1.3                               | 6.8                    | -5.3              | -4.6                   |
| 2006                                    | -4.7                              | -5.9                   | -0.5              | -0.5                   |
| 2007                                    | -3.0                              | -1.1                   | -1.0              | -0.7                   |
| 2008                                    | 3.4                               | 3.0                    | -3.1              | -2.0                   |
| 2009                                    | -6.9                              | -15.4                  | -9.7              | -9.0                   |
| 2010                                    | -6.6                              | -7.1                   | 14.4              | 13.2                   |
| 2011                                    | 11.7                              | 15.7                   | 1.9               | 3.9                    |
| 2012                                    | -8.4                              | -4.2                   | -6.6              | -7.2                   |
| 2013                                    | 9.9                               | 7.0                    | 1.6               | -0.7                   |
| 2014                                    | -1.4 <sup>†</sup>                 | -1.3                   | 6.8               | 4.2                    |
| 2015                                    | 10.1                              | 13.7 <sup>†</sup>      | 1.8               | 2.8                    |
| 2016                                    | -4.4                              | -7.7                   | 1.3               | 1.4                    |
| 2017                                    | 2.2                               | 2.2                    | 2.3 <sup>†</sup>  | 2.4 <sup>†</sup>       |
| 2018                                    | -0.5                              | -0.1                   | -0.4              | -0.3                   |

<sup>†</sup> 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)

| Section                                      | 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 |
|  | A-U           | A-U   | A-U   | A-U                      | B-E                | B-E                | C                  | C                  | G-U                | G-U                |
| <b>Indices</b>                               | TXEL          | LNNM  | LZVA  | TXET                     | DJW6               | DK3S               | DJW9               | DK3V               | DK2G               | DK56               |
| 2015   | 98.6          | 98.8  | 98.7  | 100.2                    | 100.2              | 100.7              | 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                     | 101.6 <sup>†</sup> | 101.2 <sup>†</sup> | 101.6 <sup>†</sup> | 100.7 <sup>†</sup> | 100.6              | 100.7              |
| 2018   | 102.2         | 102.1 | 101.9 | 99.9                     | 103.4              | 102.0              | 102.8              | 100.9              | 101.8 <sup>†</sup> | 101.7 <sup>†</sup> |
| 2015 Q4                                      | 99.4          | 99.4  | 100.1 | 100.1                    | 99.5               | 101.6 <sup>†</sup> | 99.7               | 102.0              | 99.3               | 99.9               |
| 2016 Q1                                      | 99.5          | 99.4  | 99.6  | 100.0                    | 99.7 <sup>†</sup>  | 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              | 99.7               |
| Q3   | 100.2         | 100.3 | 100.1 | 100.1                    | 99.9               | 99.5               | 100.0              | 99.6               | 100.4              | 100.3              |
| Q4   | 100.3         | 100.3 | 100.5 | 100.0                    | 100.0              | 100.1              | 99.8               | 99.7 <sup>†</sup>  | 100.2              | 100.4              |
| 2017 Q1                                      | 100.6         | 100.6 | 101.1 | 99.9                     | 100.0              | 99.9               | 100.0              | 99.4               | 100.3              | 100.9              |
| Q2   | 101.0         | 100.9 | 101.6 | 99.9                     | 101.3              | 101.5              | 101.2              | 101.0              | 100.6 <sup>†</sup> | 101.2              |
| Q3   | 101.0         | 101.0 | 100.6 | 100.0                    | 102.3              | 101.5              | 102.4 <sup>†</sup> | 101.2              | 100.6              | 100.1              |
| Q4   | 101.3         | 101.3 | 100.9 | 100.0                    | 102.9              | 101.8              | 102.7              | 101.0              | 100.9              | 100.6              |
| 2018 Q1                                      | 101.9         | 101.8 | 101.4 | 100.0                    | 103.4              | 102.1              | 103.1              | 101.3              | 101.5              | 101.2 <sup>†</sup> |
| Q2   | 102.0         | 101.9 | 101.5 | 99.9                     | 103.6              | 102.4              | 103.1              | 101.1              | 101.5              | 101.1              |
| Q3   | 102.2         | 102.1 | 102.4 | 99.9                     | 103.6              | 102.3              | 103.0              | 100.7              | 101.8              | 102.3              |
| Q4   | 102.7         | 102.6 | 102.3 | 99.9                     | 103.0              | 101.3              | 102.2              | 100.4              | 102.3              | 102.3              |
| 2019 Q1                                      | 103.0         | 102.8 | 103.4 | 99.8                     | 102.7              | 103.7              | 101.9              | 102.7              | 102.7              | 103.2              |
| Q2   | 103.4         | 103.3 | 103.4 | 99.9                     | 103.2              | 102.5              | 102.4              | 101.5              | 103.3              | 103.7              |
| Q3   | 103.2         | 103.1 | 103.4 | 99.9                     | 103.4              | 102.4              | 102.3              | 101.6              | 103.1              | 103.8              |
| <b>Per cent change on quarter a year ago</b> | DIW9          | LNN0  | LZVC  |                          | DJW8               | DK3U               | DJX3               | DK44               | DK2I               | DK58               |
| 2015 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               | -1.3 <sup>†</sup>  | -0.6               | 1.2                | 1.6                |
| Q2   | 2.0           | 1.8   | 1.8   |                          | 0.1                | -0.6 <sup>†</sup>  | 0.5                | -                  | 1.7                | 1.7                |
| Q3   | 1.5           | 1.4   | 2.0   |                          | -0.4               | -0.3               | -                  | -0.2               | 1.6 <sup>†</sup>   | 2.2                |
| Q4   | 1.0           | 0.9   | 0.4   |                          | 0.5                | -1.5               | 0.1                | -2.2               | 1.0                | 0.5                |
| 2017 Q1                                      | 1.2           | 1.1   | 1.5   |                          | 0.4 <sup>†</sup>   | -0.4               | 0.5                | -0.9               | 0.9                | 1.3                |
| Q2   | 1.0           | 0.9   | 1.8   |                          | 0.8                | 1.3                | 0.5                | 0.6 <sup>†</sup>   | 0.6                | 1.5                |
| Q3   | 0.8           | 0.7   | 0.6   |                          | 2.4                | 2.0                | 2.4                | 1.7                | 0.2                | -0.2               |
| Q4   | 1.0           | 1.0   | 0.4   |                          | 2.9                | 1.7                | 2.9                | 1.3                | 0.6                | 0.2                |
| 2018 Q1                                      | 1.2           | 1.3   | 0.3   |                          | 3.4                | 2.3                | 3.1                | 1.9                | 1.2                | 0.2                |
| Q2   | 1.0           | 1.0   | -0.1  |                          | 2.3                | 0.9                | 1.9                | 0.1                | 0.9                | -0.2               |
| Q3   | 1.1           | 1.1   | 1.8   |                          | 1.2                | 0.8                | 0.6                | -0.5               | 1.2                | 2.2 <sup>†</sup>   |
| Q4   | 1.4           | 1.3   | 1.5   |                          | 0.2                | -0.5               | -0.5               | -0.7               | 1.5                | 1.6                |
| 2019 Q1                                      | 1.1           | 1.0   | 2.0   |                          | -0.7               | 1.5                | -1.1               | 1.4                | 1.2                | 2.0                |
| Q2   | 1.3           | 1.3   | 1.8   |                          | -0.4               | 0.1                | -0.7               | 0.4                | 1.7                | 2.6                |
| Q3   | 1.0           | 1.0   | 1.0   |                          | -0.2               | 0.1                | -0.7               | 0.9                | 1.3                | 1.5                |
| <b>Per cent change on previous quarter</b>   | DIW8          | TXAJ  | TXBU  |                          | DJW7               | DK3T               | DJX2               | DK3Y               | DK2H               | DK57               |
| 2015 Q4                                      | 0.7           | 0.6   | 2.0   |                          | -0.8 <sup>†</sup>  | 1.9                | -0.3               | 2.3                | 0.4                | 1.8                |
| 2016 Q1                                      | 0.1           | -     | -0.5  |                          | 0.2                | -1.3 <sup>†</sup>  | -0.2               | -1.6 <sup>†</sup>  | 0.1                | -0.3               |
| Q2   | 0.6           | 0.6   | 0.3   |                          | 0.8                | -0.2               | 1.1                | -                  | 0.6 <sup>†</sup>   | 0.1                |
| Q3   | 0.2           | 0.3   | 0.2   |                          | -0.5               | -0.7               | -0.6               | -0.8               | 0.4                | 0.5                |
| Q4   | 0.1           | -     | 0.4   |                          | -                  | 0.7                | -0.2               | 0.2                | -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                | 1.6                | 1.2                | 1.6                | 0.3                | 0.3                |
| Q3   | -             | -     | -1.0  |                          | 1.1                | -                  | 1.2 <sup>†</sup>   | 0.3                | -                  | -1.1 <sup>†</sup>  |
| Q4   | 0.3           | 0.3   | 0.2   |                          | 0.5                | 0.3                | 0.3                | -0.2               | 0.3                | 0.5                |
| 2018 Q1                                      | 0.6           | 0.6   | 0.5   |                          | 0.5                | 0.3                | 0.4                | 0.3                | 0.6                | 0.6                |
| Q2   | 0.1           | 0.1   | 0.2   |                          | 0.2                | 0.2                | -                  | -0.2               | 0.1                | -0.1               |
| Q3   | 0.1           | 0.2   | 0.9   |                          | -                  | -0.1               | -0.1               | -0.4               | 0.3                | 1.2                |
| Q4   | 0.5           | 0.5   | -0.1  |                          | -0.6               | -1.0               | -0.8               | -0.4               | 0.5                | -                  |
| 2019 Q1                                      | 0.3           | 0.3   | 1.1   |                          | -0.3               | 2.4                | -0.2               | 2.3                | 0.4                | 0.9                |
| Q2   | 0.3           | 0.4   | -     |                          | 0.5                | -1.1               | 0.4                | -1.2               | 0.6                | 0.5                |
| Q3   | -0.2          | -0.2  | -     |                          | 0.2                | -0.1               | -0.1               | 0.1                | -0.2               | 0.1                |

<sup>†</sup> 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                                |
| 2015 Q2 | -                                     | -                                   | -                                     | -                                   | -                                     | -                                   |
| Q3      | -                                     | -                                   | -                                     | -                                   | -                                     | -                                   |
| Q4      | -                                     | -                                   | -                                     | -                                   | -                                     | -                                   |
| 2016 Q1 | -                                     | -                                   | -                                     | -                                   | -                                     | -                                   |
| Q2      | -                                     | -                                   | -                                     | -                                   | -                                     | -                                   |
| Q3      | -                                     | -                                   | -                                     | -                                   | -                                     | -                                   |
| Q4      | -                                     | -                                   | -                                     | -                                   | -                                     | -                                   |
| 2017 Q1 | -                                     | -                                   | -                                     | -                                   | -                                     | -                                   |
| Q2      | -                                     | -                                   | -                                     | -                                   | -                                     | -                                   |
| Q3      | -                                     | -                                   | -                                     | -                                   | -                                     | -                                   |
| Q4      | -                                     | -                                   | -                                     | -                                   | -                                     | -                                   |
| 2018 Q1 | -                                     | -                                   | -                                     | -                                   | -                                     | -                                   |
| Q2      | -                                     | -                                   | -                                     | -                                   | -                                     | -0.1                                |
| Q3      | -                                     | -0.1                                | -0.1                                  | -0.1                                | -                                     | -                                   |
| Q4      | -0.1                                  | -0.1                                | -0.2                                  | -0.1                                | -0.1                                  | -0.1                                |
| 2019 Q1 | -0.2                                  | -                                   | -0.2                                  | -                                   | -0.1                                  | 0.1                                 |
| Q2      | -0.1                                  | 0.1                                 | -0.1                                  | -                                   | -0.1                                  | -                                   |

|         | 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                                |
| 2015 Q2 | -                                     | -                                   | -0.1                                  | -                                   |
| Q3      | -                                     | -                                   | -                                     | 0.1                                 |
| Q4      | -                                     | -0.1                                | -                                     | -                                   |
| 2016 Q1 | -                                     | -0.1                                | -0.1                                  | -0.1                                |
| Q2      | -0.1                                  | -                                   | -0.1                                  | -                                   |
| Q3      | -                                     | 0.1                                 | -                                     | -                                   |
| Q4      | -                                     | 0.1                                 | -                                     | -                                   |
| 2017 Q1 | 0.1                                   | -                                   | -                                     | -                                   |
| Q2      | -                                     | -0.1                                | -                                     | -                                   |
| Q3      | 0.1                                   | 0.1                                 | 0.1                                   | 0.2                                 |
| Q4      | 0.1                                   | 0.1                                 | 0.2                                   | -                                   |
| 2018 Q1 | 0.6                                   | 0.5                                 | 0.7                                   | 0.5                                 |
| Q2      | 0.9                                   | 0.2                                 | 1.0                                   | 0.3                                 |
| Q3      | 1.0                                   | 0.2                                 | 1.0                                   | 0.3                                 |
| Q4      | 0.7                                   | -0.2                                | 0.8                                   | -0.2                                |
| 2019 Q1 | 0.5                                   | 0.4                                 | 0.7                                   | 0.3                                 |
| Q2      | 0.5                                   | 0.1                                 | 0.5                                   | 0.1                                 |

|         | 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                                |
| 2015 Q2 | -                                     | 0.1                                 | -                                     | -                                   |
| Q3      | -                                     | -0.1                                | -                                     | -                                   |
| Q4      | -                                     | -                                   | -0.1                                  | -                                   |
| 2016 Q1 | -0.1                                  | -                                   | -                                     | -                                   |
| Q2      | -                                     | 0.1                                 | -                                     | -                                   |
| Q3      | -                                     | -0.1                                | -0.1                                  | -                                   |
| Q4      | -0.1                                  | -                                   | -                                     | -0.1                                |
| 2017 Q1 | -                                     | -                                   | -                                     | -                                   |
| Q2      | -                                     | -                                   | -                                     | 0.1                                 |
| Q3      | -                                     | -0.1                                | -                                     | -                                   |
| Q4      | -                                     | -                                   | -                                     | -0.1                                |
| 2018 Q1 | -0.1                                  | -0.1                                | -0.1                                  | -0.1                                |
| Q2      | -0.2                                  | -                                   | -0.2                                  | -0.1                                |
| Q3      | -0.2                                  | -0.1                                | -0.2                                  | -                                   |
| Q4      | -0.2                                  | -                                   | -0.2                                  | -                                   |
| 2019 Q1 | -0.1                                  | 0.1                                 | -0.1                                  | -                                   |
| Q2      | -                                     | 0.1                                 | -                                     | -                                   |