Statistical bulletin

Labour productivity, UK: January to March 2018

Output per hour, output per job and output per worker for the whole economy and a range of industries. Includes estimates of unit labour costs.

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Notice

5 July 2018

Informed by quality assurance prior to publication we would like to draw users' attention to this note , which provides further information on the particularly large impact of revisions between Quarter 4 (Oct to Dec) 1997 and Quarter 1 (Jan to Mar) 1998, on industry K, which covers the financial and insurance industries.

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1 . Main points

- Labour productivity, as measured by output per hour, grew by 0.9% compared with the same quarter a year ago; this remains noticeably below the long-term trend observed before 2008 when productivity growth averaged nearly 2% per annum, and suggests the "productivity puzzle" remains unsolved.

- Labour productivity grew, compared with the previous year, in both services and manufacturing industries, by 0.9% and 0.7% respectively.

- UK labour productivity is estimated to have fallen by 0.4% in the first three months of the year, as a result of continued strength in employment growth combined with weaker output growth; this is the first fall in output per hour since the second quarter of 2017.

- Labour productivity fell in both services and manufacturing industries compared with the previous quarter by 0.2% and 1.7% respectively.

- Both productivity hours worked and jobs grew by 0.6% compared with the previous quarter and compared with the same quarter a year ago, they grew by 0.3% and 1.3% respectively.

- Earnings and other labour costs growth outpaced productivity growth, resulting in unit labour cost growth of 3.1% in the year to Quarter 1 (Jan to Mar) 2018, up from the 2.9% growth in the year to Quarter 4 (Oct to Dec) 2017.

2 . Things you need to know about this release

This release reports labour productivity estimates for Quarter 1 (Jan to Mar) 2018 for the whole economy and a range of industries, together with estimates of unit labour costs. 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 an overarching commentary, quarterly estimates of public service productivity and articles on productivity-related topics and data.

Labour productivity is calculated by dividing output by labour input. 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 as a whole. Labour inputs in this release are measured in terms of workers, jobs ("productivity jobs") and hours worked ("productivity hours").

This release also reports estimates of unit labour costs (ULCs), which capture the full labour costs – including social security and employers' pension contributions – incurred in the production of a unit of economic output. Labour costs make up around two-thirds of the overall cost of production of UK economic output. Changes in labour costs are therefore a large factor in overall changes in the cost of production. If increases in labour costs are not reflected in the volume of output, this can put upward pressure on the prices of goods and services, therefore this is a closely watched indicator of inflationary pressure in the economy.

The equations for labour productivity and ULCs can be found in the Quality and methodology section of this release. The output statistics in this release are consistent with the latest Quarterly national accounts published on 29 June 2018. Note that productivity in this release does not refer to gross domestic product (GDP) per person , which is a measure that includes people who are not in employment.

The labour input measures used in this release are consistent with the latest labour market statistics as described further in the Quality and methodology section of this bulletin. Unless otherwise stated all figures are seasonally adjusted.

3 . Labour productivity up for the sixth consecutive quarter compared with a year ago

Compared with the same quarter a year ago, labour productivity, on an output per hour basis grew by 0.9% and has been growing for the past six consecutive quarters.

A 0.9% growth compared with the same quarter in the previous year, is significantly lower than the long period of average productivity growth prior to the economic downturn, and represents a continuation of the UK's "productivity puzzle". This sustained stagnation contrasts with patterns following previous UK economic downturns, when productivity initially fell, but subsequently recovered to the previous trend rate of growth. There is wide and varied economic debate regarding the causes of this puzzle and further analysis of recent UK productivity trends can be found in the January 2016, May 2016 and June 2016 Economic Reviews, as well as in several standalone articles including: What is the productivity puzzle?, The productivity conundrum, explanations and preliminary analysis and The productivity conundrum, interpreting the recent behaviour of the economy .

This puzzle is shown in Figure 1, which presents two alternative measures of productivity – output per hour and output per worker – alongside their projected 1994 to 2007 trends. Following years of steady growth, each measure peaked prior to and fell during the economic downturn. However, due to a strong labour market performance accompanying a relatively weak recovery in output growth, productivity has not returned to its pre-downturn trend. Productivity in Quarter 1 (Jan to Mar) 2018, as measured by output per hour, was 17.5% below its pre-downturn trend – or, equivalently, productivity would have been 21.2% higher had it followed this pre-downturn trend[1] .

Labour productivity fell by 0.4% in Quarter 1 2018. This fall left productivity 1.5% above its peak in Quarter 4 (Oct to Dec) 2007, prior to the economic downturn.

Figure 1: Output per hour and output per worker

Seasonally adjusted, Quarter 1 (Jan to Mar) 1994 to Quarter 1 2018, UK

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Seasonally adjusted, Quarter 1 (Jan to Mar) 1994 to Quarter 1 2018, UK
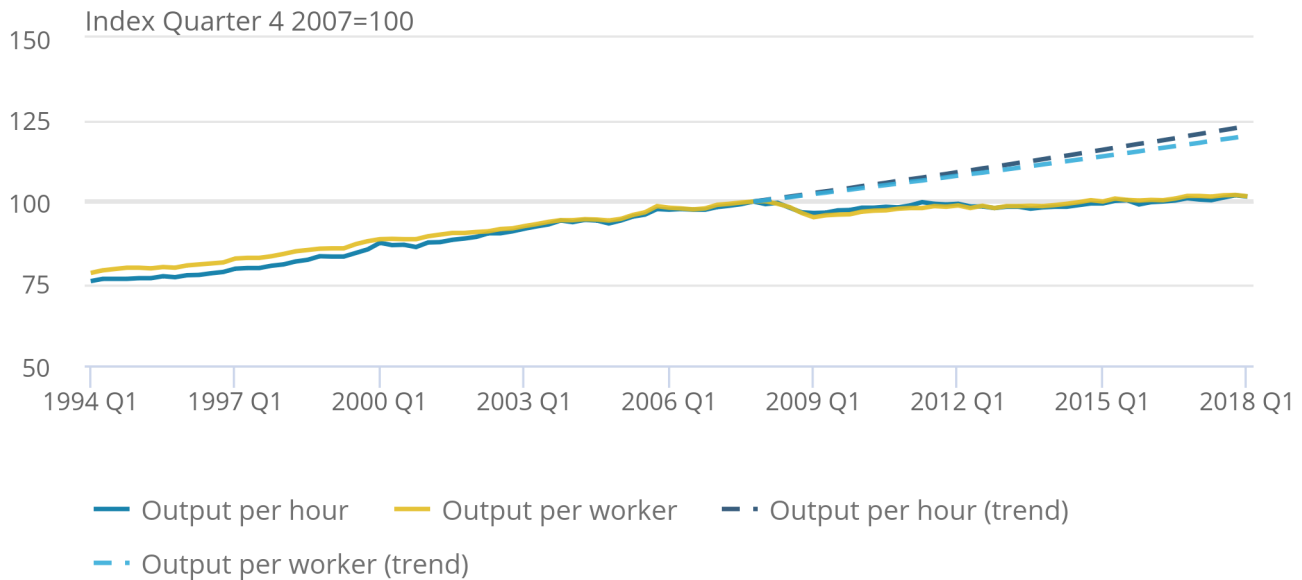
Source: Office for National Statistics

Figure 2 breaks down the growth in productivity over the last decade between Quarter 1 2008 and Quarter 1 2018 into contributions from different industry groupings and an "allocation effect" due to changes in the share of output and labour in each grouping. All else being equal, stronger productivity growth in any given industry, or a movement of output and labour towards higher productivity industries, will tend to increase aggregate productivity growth, while the opposite effects would reduce it.

Non-financial services were the main positive contributor to productivity growth over this period, partly offset by negative contributions from non-manufacturing production and finance. This is partially a result of the falling reserves of oil and gas in the North Sea. Although negative for the period as a whole, the allocation effect was initially positive following the downturn, but turned negative in recent years.

Figure 2: Contributions to growth of whole economy output per hour

Seasonally adjusted, cumulative quarterly changes, Quarter 1 (Jan to Mar) 2008 to Quarter 1 2018, UK

Figure 2: Contributions to growth of whole economy output per hour

Seasonally adjusted, cumulative quarterly changes, Quarter 1 (Jan to Mar) 2008 to Quarter 1 2018, UK
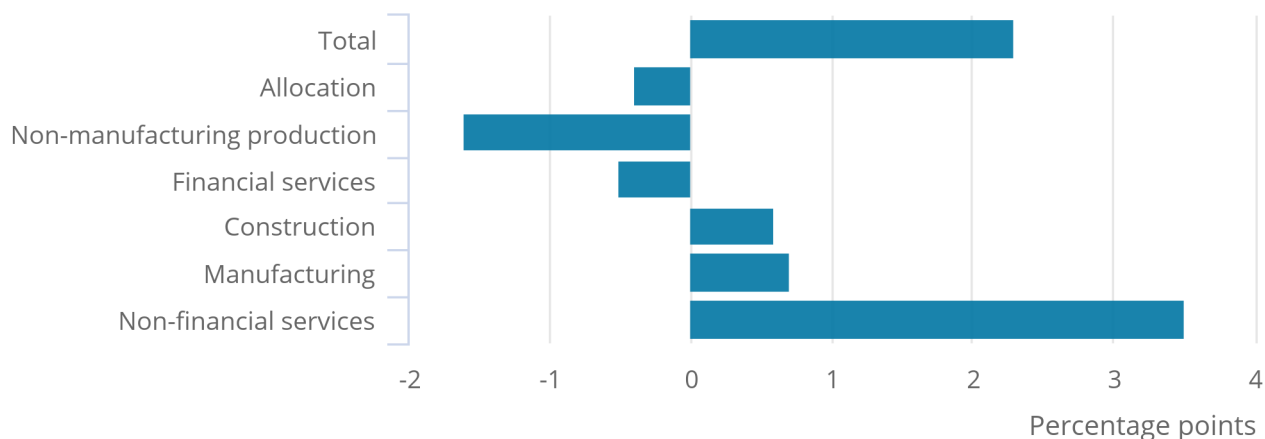
Source: Office for National Statistics

Notes:

1. Non-manufacturing production refers to: agriculture, forestry and fishing; mining and quarrying; electricity, gas, steam and air-conditioning supply; and water supply, sewerage, waste management and remediation activities.

Notes for: Labour productivity up for the sixth consecutive quarter

1. Differences between these two measures are due to differences in the denominator used in the calculation. Using the actual output per hour series as the denominator, rather than the trend series, results in a higher percentage gap. This is due to the actual series being lower than the trend series post-downturn.

4 . Output per hour up in both services and manufacturing, compared with a year ago

Services output per hour, compared with the same period a year ago, increased by 0.9% in the latest quarter (Quarter 1 (Jan to Mar) 2018), with output growing faster than hours worked. Similarly, over the year, in manufacturing, labour productivity increased by 0.7%, with output growing faster than hours worked. Compared with the previous quarter, output per hour in both services and manufacturing decreased by 0.2% and 1.7% respectively.

Figure 3 examines longer-term trends, showing output per hour and its components since Quarter 1 2008. Services are represented in the first panel, while manufacturing is represented in the second. Manufacturing output per hour has been more volatile than services in recent years. This reflects a degree of divergence in manufacturing between gross value added (GVA) and hours, most noticeable in 2009 and 2011 to 2012, whereas in services, GVA and hours follow fairly similar trends.

Figure 3: Components of services and manufacturing productivity measures

Seasonally adjusted, UK, Quarter 1 (Jan to Mar) 2007 to Quarter 1 2018
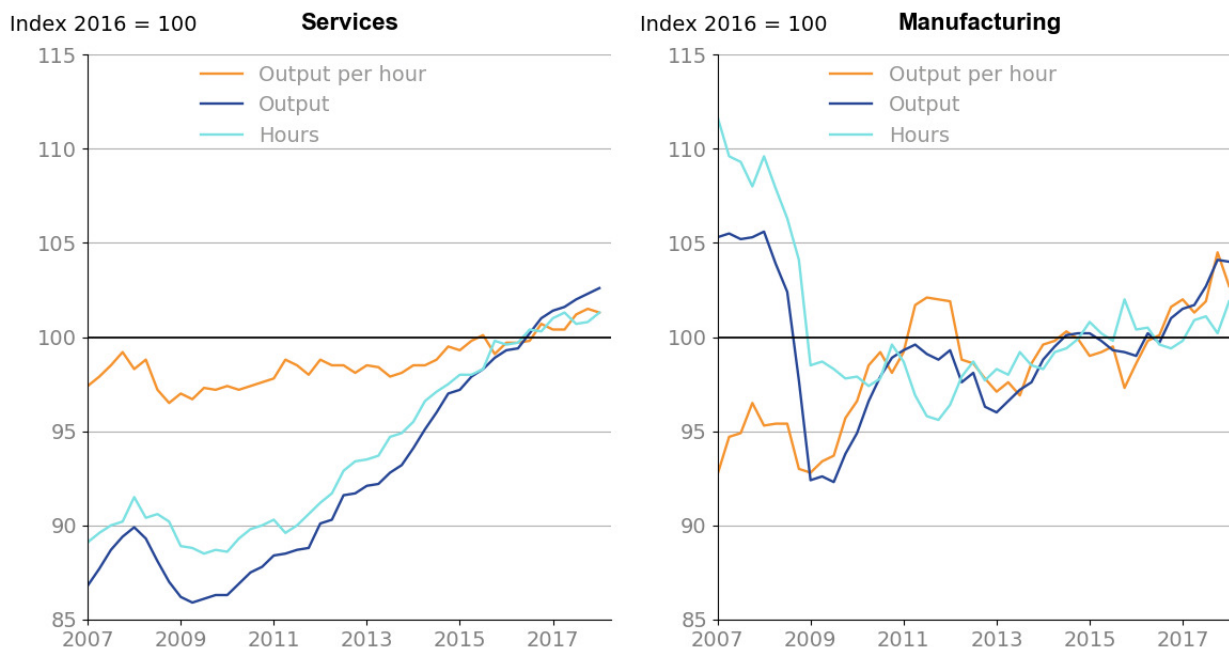
Source: Office for National Statistics

5 . Unit labour costs grow for the twelfth consecutive quarter

Unit labour costs (ULCs) reflect the full labour costs, including social security and employers' pension contributions, incurred in the production of a unit of economic output. Changes in labour costs are a large factor in overall changes in the cost of production. If increased costs are not reflected in increased output, for instance, this can put upward pressure on the prices of goods and services – sometimes referred to as "inflationary pressure". ULCs grew by 3.1% in the year to Quarter 1 (Jan to Mar) 2018, reflecting a larger percentage increase in labour costs per hour than output per hour. This was the largest increase in ULCs since Quarter 4 (Oct to Dec) 2013.

Figure 4 shows changes in ULCs since Quarter 1 2008 compared with the same quarter a year earlier. Holding other factors constant, increasing output per hour reduces ULCs as total labour costs remain constant while output rises. As a result, output per hour has its sign reversed in Figure 4. In this presentation, positive output per hour growth has a negative effect on ULC growth, while negative output per hour growth has a positive effect on ULC growth.

While growth in ULCs has been broadly positive since the onset of the economic downturn, averaging around 1.5% since Quarter 1 2008, there has been substantial variation during this period. During the recent economic downturn, ULCs began to grow at a relatively high rate, reaching a peak of 6.3% by the end of the downturn in Quarter 2 (Apr to June) 2009 and remaining elevated until Quarter 1 2010. Figure 4 shows that the initial increase in ULC growth during the downturn was driven by falling output per hour, but from Quarter 2 2009 onwards, increasing labour costs per hour were the driving factor. Following the downturn, growth in ULCs began to slow, eventually becoming negative in Quarter 4 2010.

Following a period of low or negative growth, ULC growth has fluctuated around 2% for the past two years. This increase broadly reflects higher hourly labour cost growth, with relatively little offsetting output per hour growth.

Figure 4: Whole economy unit labour costs and their compositions, growth on quarter a year ago

Seasonally adjusted, UK, Quarter 1 (Jan to Mar) 2008 to Quarter 1 2018

Figure 4: Whole economy unit labour costs and their compositions, growth on quarter a year ago

Seasonally adjusted, UK, Quarter 1 (Jan to Mar) 2008 to Quarter 1 2018
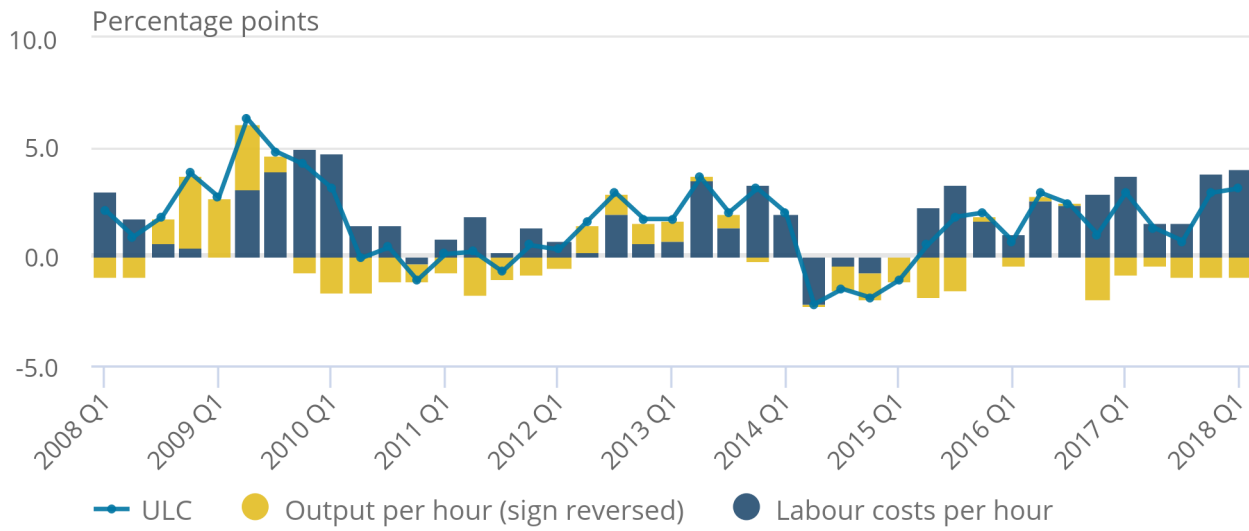
Source: Office for National Statistics

Notes:

1. Labour costs per hour estimates will differ from those in our Index of Labour Costs per Hour bulletin, due to differences in methodology.

6 . Links to related statistics

- [Productivity economic commentary: January to March 2018](): an article drawing together the main findings from official statistics and analysis of UK productivity to present a summary of recent developments (published 6 July 2018).

- [Labour productivity, UK: January to March 2018](): contains the latest estimates of labour productivity for the whole economy and a range of industries, together with estimates of unit labour costs (published 6 July 2018).

- [Quarterly UK public service productivity (Experimental Statistics): January to March 2018](): contains the latest experimental estimates for quarterly UK total public service productivity, inputs and output (published 6 July 2018).

- [Total public service productivity: understanding inputs](): presents an investigation into estimates of total UK public services inputs looking into expenditure, volume and implied deflators on a total and input component basis (published 6 July 2018).

- [Historical revisions analysis of quarterly UK public service productivity (Experimental Statistics) and nowcast evaluation](): examines the reliability of preliminary estimates for experimental quarterly UK public service productivity over time, using revision analysis techniques (published 6 July 2018).

- [Productivity development plan: 2018 to 2020](): this development plan builds on recent improvements to our productivity statistics and looks at introducing new outputs, further improving our productivity statistics and consolidating our improvements to date (published 6 July 2018)

- [UK trade in goods and productivity: new findings](): this article describes a new dataset developed by ONS, which includes information from both the Annual Business Survey and HM Revenue and Customs' trade in goods declarations. It shows a strong association between trader status and productivity, highlighting the prevalence of trading behaviour across different types of business (published 6 July 2018).

- [How productive is your business](): this is an interactive tool that helps businesses to calculate their productivity and compare their performance with other businesses in Great Britain (published 6 July 2018).

Related content

[International comparisons of productivity]() are published in levels and growth rates for the G7 countries. More international data on productivity are available from the [Organisation for Economic Co-operation and Development (OECD)](), [Eurostat]() and the US [Conference Board]().

We publish experimental estimates of [multi-factor productivity]() (MFP), which decompose output growth into the contributions that can be accounted for by labour and capital inputs. In these estimates, the contribution of labour is further decomposed into quantity (hours worked) and quality dimensions.

The [Economic Review]() covers recent developments in the UK economy, featuring our latest economic statistics as well as in-depth analysis of current issues.

[Experimental indices of labour costs per hour]() differ from the concept of labour costs used in the unit labour cost estimates in the labour productivity release. The main difference is that experimental indices of labour costs per hour relate to employees only, whereas unit labour costs also include the labour remuneration of the self-employed.

Lastly, we publish a range of [Public sector productivity measures]() and related articles. These measures define productivity differently from that used in our labour productivity and MFP estimates. Further information can be found in the [Economic and Labour Market Review, No. 5, May 2010]() and in an [information note]() published on 4 June 2015.

More information on the range of our productivity estimates can be found in the ONS [Productivity Handboo]()k.

7 . What's changed in this release?

Revisions

This release reflects revisions to gross value added and income data from quarterly national accounts – which in turn reflect a number of improvements from the upcoming Blue Book 2018 – affecting periods from 1997 onward.

Revised estimates in employee jobs and HM Forces data sources have had minor effects on all jobs and hours series (excluding all-industry aggregates), but are concentrated in Quarter 2 (Apr to June) 2016 manufacturing of computers or instruments in the case of employee jobs and 2017 East of England in the case of HM Forces.

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

Note to users

We would like to draw users' attention to this note, which provides further information on the particularly large impact of revisions between Quarter 4 (Oct to Dec) 1997 and Quarter 1 (Jan to Mar) 1998, on industry K, which covers the financial and insurance industries.

Methodological changes

Improvements have been made to the experimental division-level hours data to better reflect the distribution of self-employed hours between divisions in each section. The primarily section-level data in LPROD01 are unaffected by this methodological change.

Experimental industry-by-region data have also been revised to incorporate improved estimates of average hours worked. Hours worked data for London, the East of England, the South West, and South East are the focus of these changes, but other regions are affected through constraint to region and industry totals. All-industry totals for each region are unaffected by this change, as are UK-level industry totals. In addition, jobs data for S-T Northern Ireland have been revised to better account for self-employment, and self-employment jobs data (for all regions) have been benchmarked to the Annual Population Survey in 2017. Again, these changes do not affect all-industry totals for each regions or UK-level industry totals.

Methodological changes (discussed at our February 2018 User Group) that had previously been scheduled for introduction in the current release have been postponed until later in the year, to allow more time for quality assurance.

8 . Quality and methodology

The measure of output used in these statistics is the chained volume (real) measure of gross value added (GVA) at basic prices, with the exception of the regional analysis in Table 9, where the output measure is nominal GVA (NGVA), using the income approach. These measures differ because NGVA is not adjusted to account for price changes; this means that if prices were to rise more quickly in one region than the others, then the measures of productivity for that region could show relative growth in productivity compared with other regions purely as a result of the price changes.

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 statistical bulletin, in three ways:

- to achieve consistency with the measurement of GVA, the employee component of productivity jobs is derived on a reporting unit basis, whereas 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. Labour productivity is then derived using growth rates for GVA and labour inputs in line with the following equation:

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

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

Whole-economy unit labour costs (ULCs) are calculated as the ratio of total labour costs (that is, the product of labour input and costs per unit of labour) to GVA. Further detail on the methodology can be found in Revised methodology for unit wage costs and unit labour costs: explanation and impact.

The equation for growth of ULCs can be calculated as:

$$\Delta ULC = \Delta \left(\frac{\text{Labour Costs}}{\text{GVA}} \right)$$
$$\approx \Delta \text{Labour Costs per unit of Labour Input} - \Delta \text{Labour Productivty}$$

Manufacturing unit wage costs are calculated as the ratio of manufacturing average weekly earnings to manufacturing output per filled job. On 28 November 2012 we published Productivity measures: sectional unit labour costs, describing new measures of ULCs below the whole-economy level and proposing to replace the currently published series for manufacturing unit wage costs with a broader and more consistent measure of ULCs.

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.

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

- the strengths and limitations of the data and how it compares with related data

- uses and users of the data

- how the output was created

- the quality of the output including accuracy of the data

1 Labour productivity key measures
United Kingdom

Seasonally adjusted (2016=100)

	Whole economy			Production		Manufacturing		Services	
	Output per worker	Output per job	Output per hour	Output per job	Output per hour	Output per job	Output per hour	Output per job	Output per hour
Section	A-U	A-U	A-U	B-E	B-E	C	C	G-U	G-U
Indices									
	A4YM	LNNN	LZVB	DJ4M	DJK3	DJ4P	DJK6	DJE3	DJP9
2014	98.7†	98.4†	98.5†	98.9†	98.0†	100.5†	99.9†	98.4†	98.8†
2015	99.5	99.3	99.5	98.9	98.1	99.5	98.8	99.3	99.6
2016	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2017	100.9	100.9	100.7	101.0	101.6	101.4	102.4	101.1	100.9
2014 Q2	98.4†	98.1†	98.2†	99.3†	98.1†	100.8†	99.8†	98.0†	98.5†
Q3	99.0	98.6	98.7	98.6	98.2	100.3	100.3	98.6	98.8
Q4	99.5	99.2	99.1	98.7	97.9	100.3	99.9	99.4	99.5
2015 Q1	99.1	98.8	99.1	98.1	97.7	99.4	99.0	98.9	99.3
Q2	100.0	99.7	99.9	99.3	98.5	99.7	99.2	99.4	99.8
Q3	99.6	99.5	100.1	99.0	99.2	99.4	99.5	99.4	100.1
Q4	99.4	99.4	98.9	99.2	97.0	99.5	97.3	99.6	99.1
2016 Q1	99.6	99.6	99.5	99.1	98.3	99.6	98.6	99.9	99.7
Q2	99.5	99.6	99.7	100.1	100.2	99.6	99.8	99.4	99.7
Q3	100.0	100.0	100.0	100.0	100.6	99.5	100.1	99.9	99.8
Q4	100.8	100.8	100.7	100.8	100.9	101.3	101.6	100.8	100.7
2017 Q1	100.8	100.9	100.3	101.4	101.3	101.8	102.0	100.9	100.4
Q2	100.6	100.7	100.1	100.7	100.5	101.1	101.3	100.8	100.4
Q3	101.0	101.0	100.9	100.9	101.6	100.8	101.9	101.2	101.2
Q4	101.1	101.1	101.6	101.2	103.1	102.0	104.5	101.2	101.5
2018 Q1	100.7	100.7	101.2	101.0	101.7	101.5	102.7	100.9	101.3
Per cent change on quarter a year ago									
	A4YN	LNNP	LZVD	DJ4O	DJK5	DJ4R	DJK8	DJE5	DJQ3
2014 Q2	0.7†	0.5†	0.1†	0.9†	1.2†	2.0†	2.2†	0.3†	0.1†
Q3	1.1	1.1	1.1	0.8	2.2	2.1	3.5	1.0	0.9
Q4	1.8	1.8	1.2	0.5	0.2	1.6	1.4	1.9	1.4
2015 Q1	1.2	1.1	1.1	−1.0	−0.2	−1.2	−0.6	1.1	0.8
Q2	1.5	1.6	1.8	–	0.4	−1.1	−0.6	1.4	1.3
Q3	0.6	0.8	1.5	0.4	1.1	−0.9	−0.8	0.8	1.2
Q4	−0.1	0.2	−0.2	0.5	−0.9	−0.8	−2.6	0.3	−0.4
2016 Q1	0.5	0.9	0.4	1.0	0.6	0.2	−0.5	1.0	0.5
Q2	−0.4	−0.1	−0.2	0.8	1.7	−0.1	0.6	–	−0.1
Q3	0.4	0.5	−0.1	1.0	1.3	0.2	0.6	0.5	−0.2
Q4	1.4	1.5	1.9	1.6	4.0	1.8	4.4	1.2	1.6
2017 Q1	1.2	1.2	0.8	2.3	3.1	2.3	3.5	1.0	0.6
Q2	1.1	1.1	0.4	0.6	0.3	1.5	1.5	1.4	0.6
Q3	0.9	1.1	0.9	0.9	1.0	1.3	1.9	1.3	1.4
Q4	0.3	0.2	0.9	0.4	2.2	0.8	2.9	0.4	0.8
2018 Q1	−0.1	−0.1	0.9	−0.4	0.4	−0.4	0.7	−0.1	0.9
Per cent change on previous quarter									
	A4YO	DMWR	TXBB	DJ4N	DJK4	DJ4Q	DJK7	DJE4	DJQ2
2014 Q2	0.5†	0.4	0.1	0.1†	0.2†	0.2†	0.2†	0.2	–
Q3	0.5†	0.6†	0.5†	−0.7†	0.1	−0.6†	0.4	0.6†	0.4†
Q4	0.6	0.6†	0.5†	0.1	−0.3	–	−0.3	0.8†	0.7†
2015 Q1	−0.4	−0.4	–	−0.5	−0.2	−0.9	−0.9	−0.5	−0.2
Q2	0.8	0.9	0.8	1.2	0.8	0.3	0.2	0.5	0.5
Q3	−0.4	−0.2	0.1	−0.3	0.7	−0.3	0.3	–	0.3
Q4	−0.2	−0.1	−1.2	0.2	−2.2	0.1	−2.2	0.2	−1.0
2016 Q1	0.2	0.3	0.7	−0.1	1.3	0.1	1.3	0.2	0.6
Q2	−0.1	−0.1	0.2	1.0	1.9	0.1	1.3	−0.4	–
Q3	0.5	0.4	0.3	−0.1	0.3	−0.1	0.2	0.5	0.1
Q4	0.8	0.8	0.7	0.8	0.4	1.7	1.5	0.9	0.9
2017 Q1	–	–	−0.4	0.6	0.4	0.6	0.4	0.1	−0.4
Q2	−0.2	−0.2	−0.2	−0.7	−0.8	−0.7	−0.7	−0.1	–
Q3	0.4	0.4	0.9	0.2	1.0	−0.2	0.7	0.4	0.9
Q4	0.1	–	0.6	0.3	1.6	1.2	2.5	–	0.3
2018 Q1	−0.4	−0.3	−0.4	−0.2	−1.4	−0.6	−1.7	−0.4	−0.2

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

2 Unit labour costs and unit wage costs
United Kingdom

	Whole economy		Manufacturing
	Unit labour costs	Unit wage costs	Unit wage costs
Section	A-U	A-U	C
Indices			
	LNNL	LNNK	DIX4
2014	97.5[†]	97.4[†]	95.7[†]
2015	98.3	98.6	98.1
2016	100.0	100.0	100.0
2017	101.9	100.9	100.5
2014 Q2	97.2[†]	97.4[†]	95.1[†]
Q3	97.3	97.1	95.8
Q4	97.2	97.4	96.3
2015 Q1	97.2	97.4	97.3
Q2	97.7	97.8	97.5
Q3	99.1	99.8	98.6
Q4	99.1	99.5	99.1
2016 Q1	97.9	98.4	99.4
Q2	100.4	100.5	100.6
Q3	101.5	101.4	100.9
Q4	100.1	99.8	99.1
2017 Q1	100.7	99.6	98.9
Q2	101.7	100.4	100.3
Q3	102.3	101.2	101.5
Q4	103.0	102.4	101.3
2018 Q1	103.8	103.3	102.0
Per cent change on quarter a year ago			
	DMWN	LOJE	DJ4J
2014 Q2	−2.2[†]	−0.8[†]	−0.7
Q3	−1.5	−1.0	−0.3
Q4	−1.9	−1.0	−0.1[†]
2015 Q1	−1.1	−0.3	1.9
Q2	0.5	0.4	2.6
Q3	1.8	2.8	2.9
Q4	2.0	2.2	2.9
2016 Q1	0.7	1.0	2.2
Q2	2.9	2.7	3.1
Q3	2.4	1.6	2.3
Q4	1.0	0.3	−
2017 Q1	2.9	1.3	−0.5
Q2	1.3	−0.1	−0.2
Q3	0.7	−0.2	0.6
Q4	2.9	2.6	2.2
2018 Q1	3.1	3.7	3.1
Per cent change on previous quarter			
	DMWO	DMWL	DJ4I
2014 Q2	−1.1[†]	−0.3[†]	−0.4[†]
Q3	0.2	−0.3	0.7
Q4	−0.2	0.3	0.5
2015 Q1	−	−	1.1
Q2	0.5	0.4	0.2
Q3	1.5	2.1	1.1
Q4	−0.1	−0.3	0.6
2016 Q1	−1.2	−1.1	0.3
Q2	2.6	2.1	1.2
Q3	1.1	0.9	0.3
Q4	−1.4	−1.6	−1.7
2017 Q1	0.6	−0.2	−0.2
Q2	1.0	0.8	1.4
Q3	0.5	0.8	1.1
Q4	0.7	1.2	−0.2
2018 Q1	0.8	0.9	0.7

[†] 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 job: Manufacturing subsections
United Kingdom

	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
Divisions	10-12	13-15	16-18	20-21	22-23	24-25	26-27	28	29-30	19,31-33
Level (£k)										
2013	63.0	50.0	47.4	146.2	51.7	51.2	60.8	56.6	76.1	54.7
Indices										
	DJ54	DJ57	DJ5F	DJ5I	DJ5L	DJB2	DJB7	DJC2	DJC5	DJD3
2014	104.3†	97.2†	100.4†	93.0†	97.7†	101.7†	94.0†	113.4†	101.6†	101.7†
2015	101.4	105.0	100.7	97.7	95.3	99.4	96.6	97.9	102.2	98.9
2016	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2017	99.3	103.4	101.3	93.5	102.8	99.1	105.4	111.3	103.7	102.3
2014 Q2	105.1†	101.7†	100.1†	90.8†	99.3†	101.2†	94.3†	115.7†	102.5†	100.1†
Q3	103.5	92.8	100.1	93.7	97.4	102.3	94.8	115.3	100.5	101.6
Q4	103.2	95.3	100.4	95.9	94.9	101.0	94.5	112.5	102.4	102.8
2015 Q1	101.9	101.1	100.8	97.6	94.8	101.1	93.4	101.0	102.3	98.6
Q2	100.8	106.1	99.8	97.4	93.3	101.5	98.1	97.9	104.2	99.2
Q3	101.6	108.5	100.7	97.7	96.2	96.8	97.8	96.6	101.5	98.5
Q4	101.5	104.3	101.3	98.3	97.0	98.1	97.0	95.9	100.8	99.3
2016 Q1	100.4	108.8	98.9	97.9	99.6	101.6	97.2	95.7	99.6	98.7
Q2	100.5	98.0	100.5	102.1	100.5	98.8	99.7	96.7	101.4	96.4
Q3	100.1	97.0	100.0	98.0	97.8	99.7	98.6	102.0	98.6	102.4
Q4	99.1	96.2	100.7	102.1	102.1	99.8	104.4	105.6	100.4	102.5
2017 Q1	99.6	100.3	103.4	91.9	102.8	98.1	105.6	111.8	103.3	106.7
Q2	98.6	101.9	100.5	95.0	102.4	98.0	105.4	109.7	102.5	103.0
Q3	99.4	104.2	100.7	92.9	102.5	98.1	105.3	110.3	104.8	98.6
Q4	99.4	107.2	100.7	94.3	103.5	102.0	105.5	113.3	104.4	100.8
2018 Q1	97.9	101.3	103.0	92.7	103.0	100.3	107.3	115.8	102.5	101.0
Per cent change on quarter a year ago										
	DJ56	DJ5E	DJ5H	DJ5K	DJ5N	DJB6	DJB9	DJC4	DJD2	DJD7
2014 Q2	2.2†	−0.1†	−2.9†	−2.9†	8.5	2.1	−1.5	15.9†	2.2†	3.9
Q3	3.1	−7.3	−3.7	6.9	5.9†	1.5†	4.1	12.3	−0.9	1.5
Q4	2.1	−1.2	−1.8	6.6	0.3	−1.3	5.2†	7.1	2.0	2.5†
2015 Q1	−3.4	2.4	−0.2	6.2	−4.5	−1.4	1.4	−8.2	1.1	−3.5
Q2	−4.1	4.3	−0.2	7.3	−6.1	0.3	4.0	−15.4	1.6	−0.9
Q3	−1.8	16.9	0.6	4.3	−1.2	−5.3	3.2	−16.2	1.1	−3.1
Q4	−1.6	9.4	0.8	2.5	2.1	−2.8	2.6	−14.7	−1.5	−3.5
2016 Q1	−1.5	7.5	−1.9	0.3	5.1	0.5	4.1	−5.2	−2.7	0.1
Q2	−0.3	−7.7	0.7	4.8	7.7	−2.6	1.6	−1.2	−2.6	−2.8
Q3	−1.5	−10.6	−0.8	0.3	1.7	3.0	0.8	5.5	−2.8	4.0
Q4	−2.4	−7.7	−0.6	3.8	5.3	1.7	7.7	10.1	−0.4	3.2
2017 Q1	−0.7	−7.8	4.5	−6.1	3.2	−3.4	8.6	16.9	3.7	8.2
Q2	−1.9	4.1	–	−6.9	1.9	−0.8	5.7	13.5	1.0	6.9
Q3	−0.6	7.4	0.8	−5.2	4.8	−1.7	6.8	8.2	6.3	−3.7
Q4	0.4	11.4	0.1	−7.6	1.4	2.2	1.1	7.3	4.0	−1.6
2018 Q1	−1.7	1.0	−0.4	0.8	0.2	2.3	1.7	3.5	−0.8	−5.4
Per cent change on previous quarter										
	DJ55	DJ58	DJ5G	DJ5J	DJ5M	DJB3	DJB8	DJC3	DJC6	DJD4
2014 Q2	−0.4†	3.0†	−0.9†	−1.2	–†	−1.4†	2.3†	5.1†	1.3†	−1.9†
Q3	−1.6	−8.8	–	3.2†	−2.0	1.1	0.5	−0.3	−2.0	1.5
Q4	−0.3	2.7	0.3	2.3	−2.5	−1.2	−0.3	−2.5	1.9	1.2
2015 Q1	−1.2	6.1	0.4	1.8	−0.1	0.1	−1.1	−10.2	−0.1	−4.2
Q2	−1.1	4.9	−0.9	−0.2	−1.6	0.3	5.0	−3.0	1.8	0.6
Q3	0.8	2.2	0.9	0.3	3.1	−4.6	−0.3	−1.3	−2.5	−0.7
Q4	−0.1	−3.9	0.6	0.6	0.8	1.4	−0.9	−0.7	−0.7	0.7
2016 Q1	−1.1	4.3	−2.4	−0.4	2.7	3.5	0.3	−0.2	−1.3	−0.6
Q2	0.1	−9.9	1.6	4.3	0.9	−2.7	2.5	1.1	1.9	−2.3
Q3	−0.5	−0.9	−0.5	−4.0	−2.7	0.9	−1.1	5.4	−2.7	6.2
Q4	−1.0	−0.8	0.7	4.2	4.4	0.1	5.9	3.5	1.8	–
2017 Q1	0.6	4.2	2.7	−10.0	0.7	−1.8	1.1	5.9	2.9	4.2
Q2	−1.0	1.6	−2.8	3.4	−0.3	−0.1	−0.2	−1.9	−0.8	−3.5
Q3	0.8	2.2	0.2	−2.2	0.1	0.1	−0.1	0.5	2.3	−4.3
Q4	–	2.9	–	1.5	1.0	4.0	0.2	2.7	−0.5	2.2
2018 Q1	−1.5	−5.5	2.2	−1.7	−0.5	−1.7	1.7	2.2	−1.8	0.2

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

Seasonally adjusted (2016=100)

	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
Divisions	10-12	13-15	16-18	20-21	22-23	24-25	26-27	28	29-30	19,31-33
Level (£)										
2013	34.2	30.1	25.4	80.0	26.9	26.3	32.6	29.9	40.7	29.0
Indices										
	DJK9	DJL4	DJL7	DJM4	DJM7	DJN4	DJN7	DJO5	DJO8	DJP3
2014	104.5†	100.1†	98.2†	93.2†	94.9†	98.9†	97.0†	110.6†	100.0†	103.4†
2015	100.4	105.6	97.8	98.6	90.3	97.5	98.9	97.6	100.1	103.3
2016	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2017	101.8	101.9	100.3	94.4	99.3	101.5	109.6	113.3	103.2	104.6
2014 Q2	104.3†	106.8†	98.4†	92.0†	97.1†	97.0†	96.9†	112.6†	98.6	101.7†
Q3	104.9	95.1	98.8	92.4	98.5	99.0	98.7	110.4	99.9†	103.3
Q4	105.7	91.6	98.3	95.2	90.2	100.1	99.6	110.4	100.3	104.6
2015 Q1	102.3	98.3	101.8	98.7	88.3	97.8	97.0	101.2	100.2	103.7
Q2	101.4	102.9	98.1	99.8	88.0	101.1	98.0	97.8	100.3	104.3
Q3	99.5	111.6	97.3	98.9	91.7	97.5	101.4	98.1	100.9	104.1
Q4	98.5	109.5	94.0	97.1	93.0	93.5	99.3	93.4	98.9	101.2
2016 Q1	99.1	105.6	94.3	99.8	97.4	99.7	97.9	97.5	98.8	99.1
Q2	97.3	99.6	100.6	102.6	101.0	100.5	99.7	94.9	103.3	98.5
Q3	102.7	97.9	104.2	96.6	97.3	100.6	99.1	99.8	98.5	100.8
Q4	100.9	96.9	100.8	101.0	104.3	99.3	103.4	107.8	99.4	101.7
2017 Q1	101.0	98.5	100.8	90.8	101.6	101.0	105.9	112.4	101.5	107.8
Q2	101.7	101.0	99.2	92.9	99.3	97.8	109.1	111.0	100.3	104.8
Q3	103.2	101.6	98.8	97.3	97.7	100.4	109.2	112.6	104.4	101.0
Q4	101.5	106.5	102.3	96.7	98.6	106.6	114.1	117.2	106.5	105.0
2018 Q1	100.7	103.1	101.2	97.8	99.5	97.6	113.6	120.0	103.6	104.6
Per cent change on quarter a year ago										
	DJL3	DJL6	DJM3	DJM6	DJM9	DJN6	DJN9	DJO7	DJP2	DJP5
2014 Q2	2.1†	2.3†	−2.7†	1.5†	10.3	1.7†	3.1	13.9†	−1.5†	2.7†
Q3	4.8	−9.9	0.6	5.0	10.4†	4.8	11.2	7.1	−2.2	0.8
Q4	6.6	−12.9	0.1	4.4	−	0.9	5.8†	5.2	−0.7	0.1
2015 Q1	−0.9	−8.0	4.5	5.9	−6.0	−1.5	4.3	−7.0	−0.9	−0.4
Q2	−2.7	−3.6	−0.2	8.5	−9.3	4.2	1.1	−13.1	1.7	2.5
Q3	−5.2	17.4	−1.6	7.0	−6.9	−1.5	2.8	−11.2	1.0	0.8
Q4	−6.8	19.5	−4.5	2.0	3.1	−6.6	−0.3	−15.4	−1.3	−3.3
2016 Q1	−3.2	7.4	−7.3	1.1	10.2	2.0	0.9	−3.6	−1.3	−4.5
Q2	−4.1	−3.2	2.5	2.8	14.7	−0.6	1.7	−3.0	3.0	−5.5
Q3	3.2	−12.3	7.1	−2.3	6.1	3.1	−2.3	1.7	−2.4	−3.2
Q4	2.4	−11.5	7.3	4.0	12.2	6.2	4.2	15.4	0.5	0.5
2017 Q1	1.9	−6.6	6.8	−9.1	4.4	1.3	8.2	15.2	2.7	8.8
Q2	4.5	1.4	−1.4	−9.4	−1.7	−2.6	9.5	16.9	−2.9	6.4
Q3	0.5	3.8	−5.3	0.7	0.3	−0.2	10.2	12.8	6.0	0.2
Q4	0.6	9.9	1.5	−4.3	−5.4	7.4	10.3	8.8	7.1	3.2
2018 Q1	−0.3	4.6	0.3	7.7	−2.1	−3.3	7.3	6.8	2.0	−3.0
Per cent change on previous quarter										
	DJL2	DJL5	DJM2	DJM5	DJM8	DJN5	DJN8	DJO6	DJO9	DJP4
2014 Q2	1.0†	−0.1	1.0†	−1.3†	3.2†	−2.3†	4.2†	3.4†	−2.4†	−2.4†
Q3	0.6	−11.0†	0.5	0.5	1.5	2.0	1.9	−1.9	1.3	1.6
Q4	0.7	−3.6	−0.5	3.0	−8.5	1.1	0.9	−	0.4	1.2
2015 Q1	−3.2	7.2	3.5	3.7	−2.0	−2.4	−2.6	−8.4	−0.1	−0.8
Q2	−0.9	4.7	−3.6	1.0	−0.3	3.4	1.0	−3.3	0.1	0.5
Q3	−1.9	8.5	−0.9	−0.8	4.2	−3.6	3.5	0.3	0.6	−0.1
Q4	−0.9	−1.9	−3.4	−1.9	1.3	−4.1	−2.1	−4.8	−1.9	−2.9
2016 Q1	0.6	−3.6	0.4	2.8	4.7	6.7	−1.4	4.4	−0.1	−2.1
Q2	−1.8	−5.6	6.6	2.8	3.7	0.7	1.8	−2.7	4.5	−0.6
Q3	5.5	−1.8	3.6	−5.8	−3.6	0.1	−0.6	5.1	−4.7	2.3
Q4	−1.7	−1.0	−3.3	4.5	7.1	−1.3	4.4	8.0	0.9	0.9
2017 Q1	0.1	1.6	−	−10.1	−2.6	1.7	2.4	4.3	2.1	6.0
Q2	0.7	2.5	−1.6	2.4	−2.3	−3.1	3.1	−1.3	−1.2	−2.8
Q3	1.5	0.6	−0.4	4.7	−1.6	2.6	−	1.5	4.1	−3.6
Q4	−1.7	4.9	3.6	−0.6	1.0	6.2	4.5	4.1	2.0	3.9
2018 Q1	−0.8	−3.2	−1.2	1.1	0.9	−8.5	−0.4	2.4	−2.7	−0.4

† 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 job: Services sections
United Kingdom

Seasonally adjusted (2016=100)

	Wholesale & retail trade, motor vehicle repair	Transport & storage	Accommo-dation & food services	Information & commu-nication	Finance & insurance	Real estate activities	Profes-sional, scientific & technical activities	Admin & support services	Government services	Arts, enter-tainment & recreation	Other services
Section	G	H	I	J	K	L	M	N	O-Q	R	S-U
Level (£k)											
2013	34.5	48.7	22.2	77.1	107.8	375.2	48.2	28.5	35.3	26.4	44.9
Indices											
	DJE6	DJE9	DJF4	DJF7	DJG5	DJH4	DJH7	DJI2	DJI5	DJJ3	DJJ6
2014	92.7†	109.2†	100.0†	92.3†	98.9†	98.9†	100.0†	97.0†	99.9†	103.1†	98.2†
2015	95.3	106.4	101.9	95.4	97.0	99.0	101.3	99.3	100.1	100.7	101.7
2016	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2017	102.5	99.6	101.0	103.1	100.8	98.7	102.9	101.5	100.6	96.6	98.5
2014 Q2	92.4†	107.6†	99.9†	92.3†	99.1†	99.4†	98.8†	96.7†	99.4†	104.3†	95.2†
Q3	92.8	110.8	100.3	91.6	97.6	100.0	100.6	96.9	100.0	103.0	99.5
Q4	93.9	111.1	100.7	93.1	99.3	98.8	102.6	97.4	100.7	101.5	100.7
2015 Q1	94.1	109.9	101.6	93.8	98.4	97.6	100.7	98.6	99.5	99.7	100.7
Q2	95.5	107.4	101.9	95.2	96.4	97.6	102.3	99.3	100.1	100.0	100.7
Q3	95.5	105.2	101.6	95.9	95.9	99.9	101.1	100.3	100.3	100.8	102.0
Q4	96.1	103.2	102.4	96.6	97.5	100.9	101.0	99.0	100.4	102.3	103.5
2016 Q1	98.6	101.8	100.6	98.3	98.7	99.3	99.9	99.4	100.2	103.0	100.6
Q2	99.1	100.1	99.8	97.4	100.4	98.8	99.7	98.5	99.7	99.1	101.0
Q3	100.0	98.7	99.3	101.1	100.0	100.3	100.1	100.6	99.9	99.5	97.0
Q4	102.4	99.4	100.3	103.3	100.8	101.6	100.4	101.5	100.2	98.4	101.4
2017 Q1	101.7	101.2	100.5	101.4	101.9	97.2	101.8	102.2	100.7	97.2	99.9
Q2	102.0	98.7	100.2	102.3	101.0	100.4	102.4	101.3	100.2	98.6	99.6
Q3	103.4	98.5	101.1	103.6	100.8	99.3	102.9	101.1	100.8	96.0	98.2
Q4	103.0	99.8	102.1	105.0	99.3	97.9	104.5	101.4	100.5	94.7	96.1
2018 Q1	102.3	98.9	101.0	104.8	98.9	94.6	105.6	102.5	99.5	91.8	98.4
Per cent change on quarter a year ago											
	DJE8	DJF3	DJF6	DJF9	DJG8	DJH6	DJH9	DJI4	DJI7	DJJ5	DJJ8
2014 Q2	4.1†	2.7†	−3.2†	−3.5†	−2.1†	1.8†	−0.4†	3.1†	0.7†	−0.5†	−1.2†
Q3	3.4	7.2	−0.9	−4.7	−3.3	3.4	0.3	2.3	1.6	−1.6	5.6
Q4	4.3	6.1	2.2	−1.6	−0.2	2.2	4.2	1.0	1.5	−3.7	8.2
2015 Q1	2.7	2.6	2.7	1.6	−1.1	0.1	2.6	1.6	0.1	−3.7	3.6
Q2	3.3	−0.2	2.0	3.2	−2.8	−1.8	3.5	2.7	0.8	−4.1	5.8
Q3	2.9	−5.1	1.2	4.7	−1.7	−0.1	0.5	3.5	0.3	−2.1	2.5
Q4	2.3	−7.1	1.6	3.7	−1.9	2.1	−1.6	1.7	−0.4	0.7	2.7
2016 Q1	4.7	−7.4	−0.9	4.8	0.3	1.7	−0.9	0.8	0.8	3.3	−0.1
Q2	3.7	−6.8	−2.1	2.2	4.2	1.3	−2.5	−0.8	−0.5	−0.9	0.3
Q3	4.7	−6.1	−2.3	5.3	4.3	0.3	−1.0	0.4	−0.4	−1.2	−4.9
Q4	6.6	−3.7	−2.0	7.0	3.4	0.7	−0.6	2.5	−0.1	−3.8	−2.0
2017 Q1	3.2	−0.5	−0.1	3.2	3.2	−2.1	1.9	2.8	0.5	−5.6	−0.7
Q2	3.0	−1.4	0.4	5.1	0.6	1.6	2.8	2.8	0.5	−0.5	−1.4
Q3	3.4	−0.3	1.9	2.5	0.8	−0.9	2.8	0.4	0.9	−3.5	1.2
Q4	0.5	0.4	1.8	1.6	−1.5	−3.7	4.1	−0.1	0.2	−3.8	−5.2
2018 Q1	0.6	−2.2	0.5	3.3	−2.9	−2.6	3.7	0.3	−1.2	−5.5	−1.6
Per cent change on previous quarter											
	DJE7	DJF2	DJF5	DJF8	DJG6	DJH5	DJH8	DJI3	DJI6	DJJ4	DJJ7
2014 Q2	0.9†	0.5†	1.0	−†	−0.4†	1.9†	0.6†	−0.3	–	0.7†	−2.0†
Q3	0.4	2.9	0.4†	−0.7	−1.6	0.7	1.8	0.1†	0.6†	−1.3	4.5
Q4	1.2	0.3	0.4	1.6	1.8	−1.2	2.1	0.5	0.7	−1.4	1.2
2015 Q1	0.2	−1.1	0.8	0.7	−1.0	−1.2	−1.9	1.2	−1.3	−1.8	−0.1
Q2	1.5	−2.3	0.3	1.6	−2.0	–	1.5	0.8	0.7	0.3	–
Q3	–	−2.1	−0.4	0.7	−0.5	2.4	−1.2	0.9	0.2	0.7	1.3
Q4	0.6	−1.9	0.8	0.7	1.7	1.0	–	−1.2	–	1.5	1.5
2016 Q1	2.6	−1.4	−1.7	1.8	1.3	−1.6	−1.2	0.3	−0.1	0.7	−2.8
Q2	0.5	−1.7	−0.9	−0.9	1.8	−0.5	−0.2	−0.9	−0.6	−3.8	0.4
Q3	0.9	−1.3	−0.5	3.8	−0.4	1.5	0.4	2.1	0.2	0.4	−3.9
Q4	2.4	0.7	1.1	2.2	0.8	1.4	0.3	0.8	0.3	−1.2	4.5
2017 Q1	−0.7	1.8	0.2	−1.8	1.1	−4.4	1.4	0.7	0.5	−1.2	−1.4
Q2	0.3	−2.5	−0.4	0.9	−0.8	3.3	0.6	−0.9	−0.5	1.4	−0.4
Q3	1.4	−0.2	0.9	1.2	−0.2	−1.1	0.5	−0.2	0.6	−2.6	−1.4
Q4	−0.4	1.4	1.0	1.3	−1.5	−1.5	1.6	0.3	−0.4	−1.4	−2.1
2018 Q1	−0.6	−0.9	−1.0	−0.2	−0.4	−3.3	1.0	1.1	−1.0	−3.0	2.3

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

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
Level (£)											
2013	22.8	26.6	16.3	42.0	60.3	244.6	27.4	18.3	24.5	20.5	30.0
Indices											
	DJQ4	DJQ7	DJR2	DJR5	DJS3	DJS6	DJS9	DJT7	DJU2	DJV6	DJV9
2014	91.7†	108.0†	101.7†	93.2†	99.9†	101.9	99.2†	101.9†	99.2†	101.9†	99.1†
2015	95.2	105.4	101.5	97.2	99.2	100.7†	99.9	101.9	99.6	99.1	103.4
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	100.0	100.9	103.0	102.9	100.3	104.2	102.2	100.1	92.4	96.3
2014 Q2	91.5†	105.8†	101.9†	93.0†	99.9†	102.1†	97.7†	102.5†	99.0†	101.2†	97.4†
Q3	91.1	110.0	101.9	93.1	99.2	105.5	98.9	102.3	99.2	102.8	98.9
Q4	93.1	111.5	101.6	93.4	100.5	99.8	101.0	101.5	99.6	99.4	104.0
2015 Q1	93.8	109.2	101.3	95.7	100.9	99.0	99.1	102.2	99.4	96.2	101.2
Q2	95.2	106.4	101.4	96.6	98.6	98.2	101.1	102.8	99.9	98.9	104.0
Q3	96.3	104.4	100.8	98.2	99.0	100.4	100.4	103.3	100.0	101.3	104.1
Q4	95.6	101.3	102.7	98.2	98.2	105.3	99.0	99.4	99.1	100.1	104.2
2016 Q1	97.6	101.7	101.3	99.3	98.8	102.7	98.7	100.8	99.7	101.4	100.9
Q2	99.3	99.9	99.5	98.7	100.5	96.8	101.6	96.6	100.6	100.4	99.3
Q3	100.0	98.9	99.3	100.0	99.5	102.6	99.9	100.3	99.7	99.2	98.8
Q4	103.1	99.5	99.9	102.0	101.2	97.8	99.8	102.3	100.1	99.0	101.1
2017 Q1	101.1	100.3	99.9	99.6	103.7	97.6	102.3	102.4	99.9	94.5	98.6
Q2	101.5	99.4	99.7	100.2	102.6	101.1	102.5	101.8	99.5	95.3	97.9
Q3	102.3	99.8	101.2	104.4	103.1	101.6	105.6	101.5	100.6	88.8	96.0
Q4	101.1	100.6	102.6	107.7	102.1	100.9	106.6	103.1	100.7	90.9	92.6
2018 Q1	102.3	97.6	104.3	106.1	101.0	100.7	105.6	103.5	99.8	89.1	95.1
Per cent change on quarter a year ago											
	DJQ6	DJQ9	DJR4	DJR7	DJS5	DJS8	DJT6	DJT9	DJU7	DJV8	DJW3
2014 Q2	3.2†	2.0	−2.6†	−4.5†	−2.7†	−2.0	−1.4†	8.5†	−†	−4.3†	−1.4†
Q3	1.8	7.0†	0.4	−3.2	−2.0	6.2†	−0.8	5.7	1.5	−3.3	1.8
Q4	3.3	7.3	1.7	−2.1	−1.0	−0.4	2.3	2.0	0.9	−5.8	13.2
2015 Q1	2.8	4.2	−	2.7	1.1	−1.3	−0.1	0.7	0.4	−7.8	5.3
Q2	4.0	0.6	−0.6	3.8	−1.3	−3.8	3.5	0.3	0.9	−2.2	6.7
Q3	5.8	−5.1	−1.1	5.5	−0.2	−4.8	1.5	0.9	0.8	−1.5	5.2
Q4	2.6	−9.1	1.1	5.1	−2.3	5.6	−1.9	−2.1	−0.6	0.7	0.2
2016 Q1	4.1	−6.9	−0.1	3.7	−2.0	3.8	−0.4	−1.4	0.3	5.4	−0.3
Q2	4.4	−6.2	−1.8	2.1	1.9	−1.5	0.5	−6.0	0.6	1.5	−4.5
Q3	3.8	−5.3	−1.5	1.9	0.5	2.2	−0.5	−2.9	−0.3	−2.0	−5.1
Q4	7.9	−1.8	−2.7	4.0	3.0	−7.1	0.8	3.0	1.0	−1.0	−3.0
2017 Q1	3.6	−1.4	−1.3	0.3	4.9	−5.0	3.6	1.6	0.2	−6.8	−2.3
Q2	2.2	−0.5	0.2	1.6	2.1	4.4	0.9	5.4	−1.1	−5.0	−1.4
Q3	2.3	1.0	1.9	4.4	3.7	−1.1	5.7	1.2	0.8	−10.5	−2.8
Q4	−2.0	1.1	2.7	5.6	1.0	3.2	6.8	0.7	0.6	−8.2	−8.4
2018 Q1	1.2	−2.6	4.4	6.6	−2.6	3.2	3.3	1.0	−	−5.7	−3.5
Per cent change on previous quarter											
	DJQ5	DJQ8	DJR3	DJR6	DJS4	DJS7	DJT2	DJT8	DJU6	DJV7	DJW2
2014 Q2	0.4†	0.9†	0.6†	−0.2†	0.1†	1.9†	−1.5	1.0	−	−2.9†	1.4†
Q3	−0.5	4.0	−	−	−0.8	3.3	1.3†	−0.2†	0.2†	1.6	1.5
Q4	2.3	1.4	−0.4	0.4	1.4	−5.5	2.1	−0.8	0.4	−3.4	5.2
2015 Q1	0.7	−2.0	−0.3	2.5	0.3	−0.8	−1.8	0.8	−0.2	−3.3	−2.6
Q2	1.5	−2.6	−	0.9	−2.2	−0.7	1.9	0.6	0.5	2.9	2.7
Q3	1.2	−1.9	−0.6	1.6	0.3	2.2	−0.6	0.4	0.1	2.4	0.1
Q4	−0.8	−3.0	1.9	−	−0.7	4.9	−1.4	−3.8	−0.9	−1.2	0.1
2016 Q1	2.1	0.4	−1.4	1.2	0.6	−2.4	−0.3	1.4	0.6	1.3	−3.1
Q2	1.8	−1.8	−1.7	−0.6	1.7	−5.8	2.9	−4.1	0.9	−1.0	−1.6
Q3	0.7	−1.0	−0.3	1.4	−1.1	6.0	−1.7	3.8	−0.8	−1.2	−0.5
Q4	3.1	0.6	0.7	2.0	1.7	−4.7	−0.1	2.1	0.3	−0.2	2.3
2017 Q1	−2.0	0.8	−	−2.4	2.5	−0.2	2.5	0.1	−0.2	−4.6	−2.5
Q2	0.4	−0.9	−0.2	0.6	−1.0	3.6	0.2	−0.6	−0.4	0.9	−0.7
Q3	0.8	0.4	1.5	4.2	0.5	0.4	3.1	−0.4	1.1	−6.8	−1.9
Q4	−1.2	0.8	1.4	3.2	−0.9	−0.6	0.9	1.6	0.1	2.4	−3.6
2018 Q1	1.2	−3.0	1.6	−1.5	−1.1	−0.2	−0.9	0.4	−0.8	−2.0	2.8

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

7 Market sector productivity
United Kingdom

Seasonally adjusted (2016=100)

	Output per worker			Output per hour worked		
	Index	Per cent change on quarter a year ago	Per cent change on previous quarter	Index	Per cent change on quarter a year ago	Per cent change on previous quarter
	GYY4	GYY5	GYY6	GYY7	GYY8	GYY9
2014	98.9†	..	..	98.6†	..	..
2015	99.4	..	..	99.2	..	..
2016	100.0	..	..	100.0	..	..
2017	101.8	..	..	101.8	..	..
2014 Q2	98.7†	0.5	0.5	98.3†	–†	0.1†
Q3	99.0	0.9†	0.3†	98.8	0.9	0.5
Q4	99.5	1.6	0.5	98.9	0.9	0.1
2015 Q1	99.1	0.9	–0.4	99.1	0.9	0.2
Q2	100.0	1.3	0.9	99.6	1.3	0.5
Q3	99.3	0.3	–0.7	99.7	0.9	–
Q4	99.0	–0.5	–0.3	98.5	–0.4	–1.2
2016 Q1	99.4	0.3	0.3	99.3	0.2	0.8
Q2	99.6	–0.4	0.2	99.6	–	0.3
Q3	100.0	0.7	0.5	100.1	0.4	0.4
Q4	101.0	2.0	1.0	101.0	2.5	0.9
2017 Q1	101.6	2.2	0.6	101.1	1.8	0.1
Q2	101.5	2.0	–0.1	101.1	1.4	–0.1
Q3	102.0	2.0	0.5	102.1	2.1	1.1
Q4	102.1	1.1	0.1	103.1	2.1	0.9
2018 Q1	101.7	0.1	–0.5	102.6	1.4	–0.5

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

8 Output per job and hour worked: Other industries[1]
United Kingdom

(2016=100)

	Agriculture, forestry and fishing		Construction	
	Output per job	Output per hour worked	Output per job	Output per hour worked
Section	A	A	F	F
Level (£)				
2013	31 200	14.2	46 300	24.0
Indices				
	DJ4K	DJJ9	DJD8	DJP6
2001	101.0[†]	101.4[†]	91.4[†]	89.1[†]
2002	116.3	118.3	94.9	93.4
2003	111.7	111.6	97.1	96.8
2004	106.6	106.5	99.7	99.6
2005	108.0	110.9	94.5	94.8
2006	103.1	103.4	94.0	94.2
2007	100.3	102.7	93.1	93.5
2008	103.4	105.5	90.3	91.9
2009	96.0	91.4	81.5	84.8
2010	89.7	84.8	93.4	95.8
2011	99.0	96.9	95.8	99.9
2012	92.1	94.4	89.9	93.2
2013	101.0	101.1	91.1	92.4
2014	98.2	97.8	96.3	95.3
2015	108.0	111.7	98.5	98.5
2016	100.0	100.0	100.0	100.0
2017	95.0	95.4	103.8	103.8
Per cent change on previous year				
	DJ4L	DJK2	DJE2	DJP8
2001	2.6[†]	6.0	−0.2	0.1
2002	15.1	16.7[†]	3.9	4.8
2003	−4.0	−5.7	2.3	3.7
2004	−4.5	−4.6	2.7	2.8
2005	1.3	4.2	−5.3	−4.8
2006	−4.6	−6.8	−0.5	−0.6
2007	−2.7	−0.6	−1.0	−0.8
2008	3.1	2.6	−3.1	−1.7
2009	−7.1	−13.3	−9.7	−7.7
2010	−6.6	−7.3	14.6	12.9
2011	10.3	14.3	2.5	4.3
2012	−7.0	−2.5	−6.1	−6.7
2013	9.7	7.0	1.4	−0.9
2014	−2.8	−3.3	5.7[†]	3.1[†]
2015	10.0	14.2	2.3	3.3
2016	−7.4	−10.5	1.5	1.6
2017	−5.0	−4.6	3.8	3.8

1 Productivity figures for industry F are experimental
[†]indicates that estimates are new or have been revised. The period marked
is the earliest in the table to have been revised

9 Productivity measures by region

(UK=100)

		2010	2011	2012	2013	2014	2015	2016
United Kingdom		100.0	100.0	100.0	100.0	100.0	100.0	100.0
Nominal GVA per filled job								
North East	DJDO	84.8	86.2	86.3	85.6	87.1	86.6	88.1
North West	DJDP	91.9	90.9	91.3	90.7	89.4	90.6	91.0
Yorkshire and The Humber	DMBC	86.6	86.9	86.6	86.5	85.2	85.4	84.8
East Midlands	DMBE	86.9	85.8	86.4	87.5	87.9	86.7	86.6
West Midlands	DMDN	87.4	88.0	87.7	87.7	88.9	88.9	89.4
East of England	DMDQ	97.7	97.1	95.9	96.1	95.9	96.2	95.7
London	DMGH	140.9	141.9	139.5	138.2	139.4	137.8	137.7
South East	DMGJ	106.8	105.7	106.2	106.7	105.6	106.6	104.4
South West	DMGK	89.0	87.4	88.5	88.0	88.1	87.6	88.9
England	DMGL	101.9	101.7	101.6	101.6	101.7	101.6	101.4
Wales	DMGM	79.2	81.6	81.5	82.3	79.7	80.6	81.3
Scotland	DMGX	96.6	96.4	95.8	96.9	97.3	97.4	98.3
Northern Ireland	DMOA	84.2	86.5	89.7	87.5	87.0	88.0	87.8
Nominal GVA per hour worked								
North East	DMOB	86.4	88.9	89.1	88.3	88.9	89.0	90.5
North West	DMOH	92.4	92.5	92.3	92.4	89.5	90.5	92.0
Yorkshire and The Humber	DMOK	87.9	87.7	87.6	87.7	86.2	87.3	87.4
East Midlands	DMOL	86.4	86.6	87.3	88.5	89.4†	86.0	87.0
West Midlands	DMON	86.6	88.3	87.5	87.5	88.4	86.9	88.6
East of England	DMOO	98.9	98.4	97.2	96.9	97.9	97.8	96.5
London	DMOR	131.9	132.2	130.6	129.9	131.4	130.5	129.3
South East	DMOS	109.8	107.6	107.2	108.2	106.6	108.8	105.5
South West	DMOT	92.1	90.0	91.4	90.8	91.3	90.9	92.5
England	DMOV	101.7	101.6	101.4	101.5	101.5	101.4	101.3
Wales	DMOW	81.5	82.4	84.1	84.2	82.5	82.1	83.4
Scotland	DMOY	97.7	97.4	97.7	97.9	98.9	99.5	99.8
Northern Ireland	DMWA	81.5	84.0	86.4	83.0	82.3	85.3	85.1

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

10 Labour input indices: Workers, productivity jobs and productivity hours
United Kingdom

Seasonally adjusted (2016=100)

	Whole economy				Production		Manufacturing		Services	
	Workers	Jobs	Hours	Ratio of jobs to workers	Productivity jobs	Productivity hours	Productivity jobs	Productivity hours	Productivity jobs	Productivity hours
Section	A-U	A-U	A-U	A-U	B-E	B-E	C	C	G-U	G-U
Indices										
	TXEL	LNNM	LZVA	TXET	DJW6	DK3S	DJW9	DK3V	DK2G	DK56
2014	96.9†	97.3†	97.2†	100.3†	99.0†	99.8†	99.1†	99.7†	97.1†	96.7†
2015	98.6	98.8	98.6	100.2	100.2	100.9	100.1	100.9	98.8	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	101.0	101.2	99.9	100.8	100.2	101.0	100.1	100.8	100.9
2014 Q2	96.8†	97.1†	97.1†	100.4†	98.5†	99.6†	98.7†	99.7†	97.0†	96.6†
Q3	97.2	97.5	97.5	100.3	99.5	99.9	99.8	99.8	97.3	97.1
Q4	97.5	97.8	97.9	100.3	99.6	100.4	99.9	100.3	97.6	97.5
2015 Q1	98.2	98.6	98.2	100.3	100.7	101.1	100.8	101.2	98.3	98.0
Q2	98.1	98.3	98.1	100.3	100.2	101.0	100.0	100.6	98.4	98.0
Q3	98.7	98.9	98.3	100.1	100.3	100.0	100.0	99.8	98.9	98.3
Q4	99.4	99.4	100.0	100.1	99.4	101.6	99.6	101.9	99.3	99.8
2016 Q1	99.5	99.5	99.6	100.0	99.6	100.4	99.5	100.5	99.4	99.6
Q2	100.0	100.0	99.9	100.0	100.4	100.3	100.6	100.4	100.0	99.7
Q3	100.2	100.2	100.2	100.1	100.1	99.5	100.2	99.6	100.3	100.4
Q4	100.3	100.3	100.4	100.0	99.9	99.7	99.8	99.5	100.2	100.3
2017 Q1	100.7	100.6	101.2	99.9	99.6	99.7	99.7	99.5	100.4	101.0
Q2	101.1	101.0	101.6	99.9	100.4	100.6	100.6	100.4	100.8	101.3
Q3	101.0	101.0	101.1	99.9	101.3	100.7	101.8	100.7	100.7	100.7
Q4	101.3	101.3	100.8	100.0	101.7	99.8	102.0	99.6	101.1	100.8
2018 Q1	101.9	101.9	101.4	100.0	102.4	101.7	102.5	101.3	101.8	101.3
Per cent change on quarter a year ago										
	DIW9	LNNO	LZVC		DJW8	DK3U	DJX3	DK44	DK2I	DK58
2014 Q2	2.6	2.8	3.2		0.6	0.4	1.0	0.8	2.8	3.0
Q3	2.4	2.5	2.4		0.6	−0.9	0.8	−0.5	2.4	2.5
Q4	2.2	2.2	2.8		0.6	1.0	1.1	1.3	2.2	2.7
2015 Q1	2.1	2.1	2.2		2.5	1.7	2.7	2.0	2.2	2.5
Q2	1.3	1.2	1.1		1.8	1.4	1.4	0.9	1.4	1.5
Q3	1.6	1.4	0.8		0.7	0.1	0.2	−†	1.6	1.2
Q4	1.9	1.6	2.1		−0.2	1.2	−0.3	1.6	1.7	2.4
2016 Q1	1.3	0.9	1.4		−1.1	−0.7†	−1.3	−0.7	1.1	1.7
Q2	2.0	1.7	1.8		0.2	−0.7	0.6†	−0.1	1.6	1.7
Q3	1.5	1.4	1.9		−0.2	−0.5	0.2	−0.2	1.4	2.2
Q4	0.9	0.8	0.4		0.4	−1.9	0.1	−2.4	0.9	0.5
2017 Q1	1.2	1.1	1.6		−0.1	−0.8	0.2	−1.0	1.0	1.4
Q2	1.1	1.0	1.8		−	0.3	−	−	0.8	1.6
Q3	0.9	0.8	0.9		1.3	1.1	1.7	1.1	0.4	0.3
Q4	1.0	1.0	0.4		1.9†	0.1	2.3	0.2	0.8†	0.5
2018 Q1	1.2	1.3	0.3		2.8	2.0	2.9	1.8	1.3	0.4
Per cent change on previous quarter										
	DIW8	TXAJ	TXBU		DJW7	DK3T	DJX2	DK3Y	DK2H	DK57
2014 Q2	0.6	0.6	1.0		0.3	0.1	0.5	0.6†	0.9	1.1
Q3	0.4	0.4	0.4		1.0	0.2†	1.1	0.1	0.3	0.5
Q4	0.4	0.3	0.5		0.1†	0.6	0.2	0.5	0.3	0.4
2015 Q1	0.7	0.8	0.3		1.0	0.7	0.8	0.9	0.7	0.5
Q2	−0.1	−0.2	−0.1		−0.4	−0.1	−0.7	−0.6	0.1	0.1
Q3	0.7	0.5	0.2		−	−1.0	−0.1	−0.7	0.5	0.2
Q4	0.7	0.6	1.7		−0.8	1.6	−0.3	2.0	0.4	1.6
2016 Q1	0.1	−	−0.4		0.2	−1.2	−0.2	−1.4	0.1	−0.3
Q2	0.5	0.5	0.3		0.8	−0.1	1.2†	−	0.6	0.1
Q3	0.1	0.2	0.3		−0.4	−0.8	−0.5	−0.8	0.3	0.7
Q4	0.1	0.1	0.2		−0.2	0.2	−0.4	−0.2	−0.1	−0.1
2017 Q1	0.4	0.3	0.8		−0.3	−0.1	−0.1	−	0.2	0.7
Q2	0.4	0.4	0.4		0.9	1.0	1.0	0.9	0.4	0.3
Q3	−	−	−0.5		0.9	−	1.2	0.3	−0.1	−0.5
Q4	0.3	0.3	−0.3		0.4	−0.8	0.2	−1.1	0.4	0.1
2018 Q1	0.6	0.6	0.6		0.6	1.9	0.5	1.7	0.7	0.5

†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		Unit labour costs	
	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	Per cent change on quarter a year ago	Per cent change on previous quarter
	A4YN	A4YO	LNNP	DMWR	LZVD	TXBB	DMWN	DMWO
2013 Q4	–	–0.1	–	–0.1	–	–0.1	–0.1	–0.3
2014 Q1	–0.2	–0.1	–0.1	–	–0.1	–0.1	0.1	0.1
Q2	–0.2	–	–0.2	–	–0.1	–	0.2	0.1
Q3	–0.2	–0.1	–0.2	–	–0.2	–	0.5	0.6
Q4	–0.2	–0.1	–0.2	–0.1	–0.2	–0.1	0.2	–0.6
2015 Q1	–0.1	–	–0.1	0.1	–	–	–0.2	–0.3
Q2	–	0.1	–	0.1	–	0.1	–0.1	0.2
Q3	0.1	0.1	0.2	0.1	0.2	0.1	–	0.6
Q4	0.1	–0.2	0.1	–0.2	0.1	–0.2	0.4	–0.2
2016 Q1	0.2	0.2	0.2	0.2	0.2	0.2	–0.7	–1.3
Q2	0.1	–	0.1	–	0.1	–	–0.3	0.5
Q3	–	0.1	–	0.1	–	0.1	–0.7	0.3
Q4	0.5	0.2	0.5	0.1	0.4	0.2	–1.6	–1.1
2017 Q1	0.4	0.1	0.3	–	0.3	–	–0.4	–0.1
Q2	0.3	–0.1	0.2	–0.1	0.3	–	–0.7	0.2
Q3	–	–0.1	0.1	–0.1	–	–0.1	–0.7	0.2
Q4	–0.1	–	–0.2	–0.1	–0.1	–0.1	0.8	0.3

Manufacturing

	Output per job		Output per hour worked		Unit wage costs	
	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
	DJ4R	DJ4Q	DJK8	DJK7	DJ4J	DJ4I
2013 Q4	0.1	–0.1	0.1	–0.1	–0.1	0.1
2014 Q1	–	–0.1	–	–0.1	0.1	0.1
Q2	0.1	0.2	0.1	0.1	–	–0.2
Q3	–	–	–	–	–	–
Q4	–0.1	–0.2	–0.1	–0.2	0.2	0.1
2015 Q1	–	–	–	0.1	–0.1	–
Q2	–	0.1	–	0.1	–	–0.2
Q3	–	–	–0.1	–	–	0.1
Q4	–0.2	–0.3	–0.2	–0.4	0.1	0.3
2016 Q1	–0.3	–0.1	–0.3	–	0.4	0.2
Q2	–0.8	–0.2	–0.8	–0.3	0.8	0.3
Q3	–0.6	0.1	–0.5	0.1	0.6	–0.1
Q4	–0.4	–0.2	–0.4	–0.2	0.4	0.1
2017 Q1	–0.3	–	–0.4	–	0.4	0.1
Q2	0.2	0.3	0.2	0.2	–0.1	–0.3
Q3	–0.1	–0.1	–	–	0.1	0.1
Q4	0.1	–	0.1	–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
2013 Q4	–	–0.1	–	–0.1
2014 Q1	–0.1	–0.1	–0.1	–0.1
Q2	–0.2	–	–0.1	–
Q3	–0.2	–	–0.3	–
Q4	–0.3	–0.1	–0.3	–0.1
2015 Q1	–	0.1	–	0.1
Q2	–	–	–	–
Q3	0.1	0.1	0.1	0.2
Q4	0.2	–0.1	0.2	–0.1
2016 Q1	–0.4	–0.5	–0.4	–0.5
Q2	–0.6	–0.2	–0.7	–0.2
Q3	–0.8	–	–0.7	–
Q4	–0.4	0.3	–0.5	0.2
2017 Q1	0.1	0.1	0.2	0.1
Q2	0.4	–	0.4	–
Q3	0.4	–	0.4	0.1
Q4	0.1	–	0.2	–