Office for National Statistics

Statistical bulletin

Labour productivity, UK: July to September 2016

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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1 . Main points

- UK labour productivity, as measured by output per hour, is estimated to have grown by 0.4% from Quarter 2 (Apr to June) 2016 to Quarter 3 (July to Sept) 2016; looking over a broader period the "productivity puzzle" remains, with growth on average lower than prior to the downturn.

- Productivity grew in the services industries but not in the manufacturing industries; services productivity is estimated to have grown by 0.3% on the previous quarter, while manufacturing productivity is estimated to have fallen by 0.2% on the previous quarter.

- Earnings and other labour costs growth outpaced productivity growth, resulting in unit labour cost (ULC) growth of 2.3% in the year to Quarter 3 2016.

This edition forms part of our quarterly productivity bulletin which also includes an overarching commentary, summaries of recently published estimates and new quarterly estimates of public service productivity.

2 . Economist's comment

"These estimates of productivity show that while labour productivity is improving, particularly in the services sector, it is still weak compared to that experienced in the recent past, both in terms of the level of productivity and the rate of growth. ONS is continuing to explore potential reasons for this."

Richard Heys, Deputy Chief Economist, ONS

3 . Things you need to know about this release

This release reports labour productivity estimates for Quarter 3 (July to Sept) [1] 2016 for the whole economy and a range of industries, together with estimates of unit labour costs. Productivity is important as it is arguably the most important determinant of long-run improvements in average living standards.

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, or 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 upwards pressure on the prices of goods and services – sometimes referred to as "inflationary pressure". ULCs are therefore a closely watched indicator of inflationary pressure in the economy.

The technical equations for labour productivity and ULCs can be found in the Quality and methodology section.

The output statistics in this release are consistent with the latest Quarterly National Accounts published on 23 December 2016. Note that productivity in this release does not refer to gross domestic product (GDP) per person, which is a measure including 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. Measures of jobs and hours worked in this release are affected by revisions from data sources feeding into workforce jobs. These affect the industry splits of jobs and hours worked, as well as the whole-economy estimate for jobs.

Unless otherwise stated all figures are seasonally adjusted.

Our productivity teams are running a user group to discuss the development of the labour productivity statistics which we produce. The event will take place on 16 March 2017, and the group will cover recent developments undertaken by the productivity teams, including:

- the incorporation of a new market methodology for estimates of labour input

- new quarterly regional labour input estimates – both in aggregate and by industry

- recently published analyses of productivity

- plans for future work

To register for the user group, please email productivity@ons.gov.uk, including any information on your access needs and dietary requirements.

Notes for: Things you need to know about this release

1. Q1 refers to Quarter 1 (Jan to Mar), Q2 refers to Quarter 2 (Apr to June), Q3 refers to Quarter 3 (July to Sept), and Q4 refers to Quarter 4 (Oct to Dec).

4 . Labour productivity up in the third quarter of 2016, but the puzzle remains

Productivity – as measured by output per hour – grew by 0.4% in Quarter 3 (July to Sept) 2016. Productivity in Quarter 3 2016 was consequently 1.1% higher than in Quarter 1 (Jan to Mar) 2008, immediately prior to the recent economic downturn.

Quarterly growth of 0.4% is below the 1994 to 2007 average – which even taken together with recent stronger quarters, provides little sign of an end to the UK's "productivity puzzle". The term productivity puzzle refers to the relative stagnation of labour productivity since the recent economic downturn. This is in contrast with patterns following previous UK economic downturns where productivity initially fell, but subsequently returned to the previous trend. 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 our January 2016, May 2016 and June 2016 Economic Review, and also 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 illustrated by Figure 1, which shows 2 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 in Quarter 4 (Oct to Dec) 2007 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 the pre-downturn trend. Productivity in Quarter 3 2016, as measured by output per hour, stood 15.5% below its pre-downturn trend – or, equivalently, productivity would have been 18.4% higher had it followed this pre-downturn trend.

Figure 1: Output per hour and output per worker

Seasonally adjusted, Quarter 1 (Jan to Mar) 1994 to Quarter 3 (July to Sept) 2016, UK

Figure 1: Output per hour and output per worker

Seasonally adjusted, Quarter 1 (Jan to Mar) 1994 to Quarter 3 (July to Sept) 2016, UK

Index, Quarter 4 2007 = 100
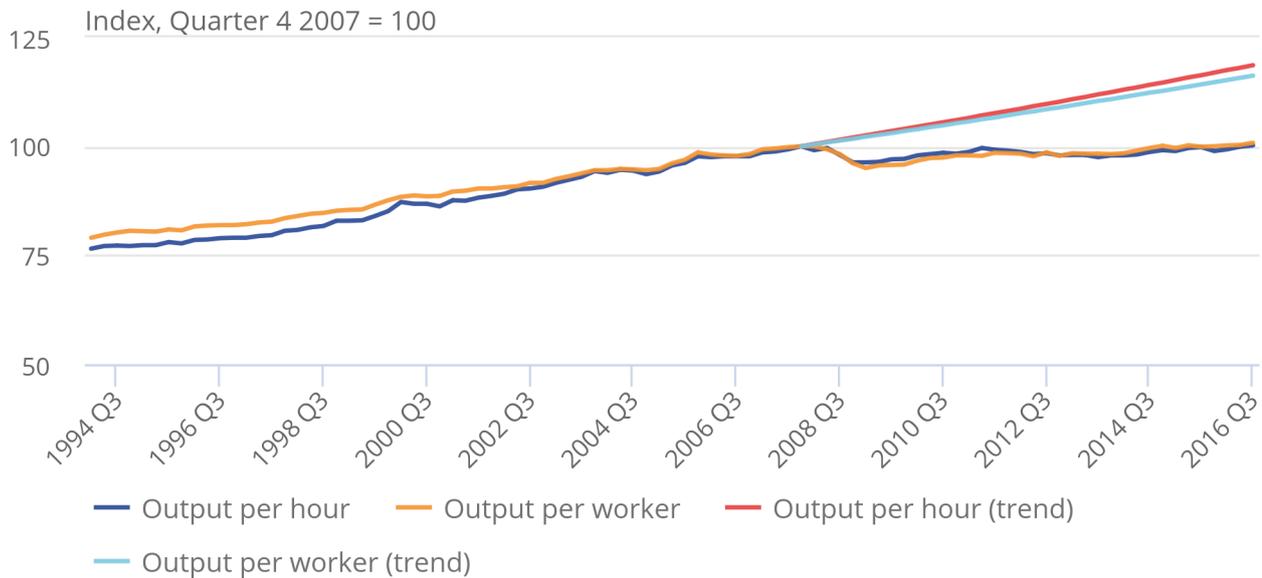
Source: Office for National Statistics

Notes:

1. Economic downturn = Quarter 2 (Apr to June) 2008 to Quarter 2 2009.

Figure 2 breaks down the growth in productivity between Quarter 1 2008 and Quarter 3 2016 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 equal, stronger (weaker) productivity growth in any given industry, or a movement of output and labour towards (away from) higher productivity industries will tend to raise (reduce) aggregate productivity growth. Non-financial services stand out as the main positive contributor to productivity growth over the period, while negative contributions from non-manufacturing production and finance largely offset this. The negative allocation effect – suggesting that output and labour have been moving away from the highest productivity industries in recent years – partly captures the falling share of output in mining and quarrying, which has among the highest levels of productivity of UK industry.

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

Seasonally adjusted, cumulative since Quarter 1 (Jan to Mar) 2008, Quarter 3 (July to Sept) 2016, UK
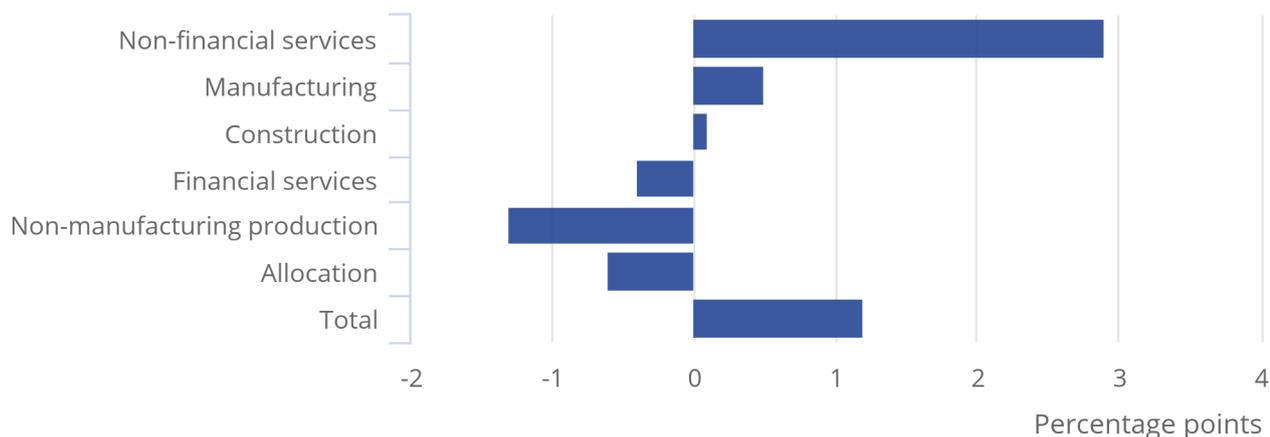
Source: Office for National Statistics

Notes:

1. Non-manufacturing production refers to: 1) Agriculture, Forestry and Fishing, 2) Mining and Quarrying, 3) Electricity, Gas, Steam and Air Conditioning Supply, and 4) Water Supply, Sewerage, Waste Management and Remediation Activities.

5 . Output per hour up for services, but down for manufacturing

Manufacturing output per hour decreased in Quarter 3 (July to Sept) 2016, reflecting a larger fall in output than the fall in hours. In contrast, rising services output per hour reflected an increase in both output and hours, with the increase in output being larger. Output per hour in manufacturing and services grew at similar rates in Quarter 3 2016, but in opposite directions – manufacturing falling by 0.2% and services growing by 0.3%.

Figure 3 examines longer-term trends, showing output per hour and its components since Quarter 1 (Jan to Mar) 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 divergence of manufacturing gross value added (GVA) and hours, most pronounced in 2009 and 2011 to 2012, whereas GVA and hours for services follow fairly similar trends. However, in recent quarters services GVA grew faster than hours, potentially marking a break from this trend.

Figure 3: Components of manufacturing and services productivity measures

Seasonally adjusted, UK, Quarter 1 (Jan to Mar) 2007 to Quarter 3 (July to Sept) 2016
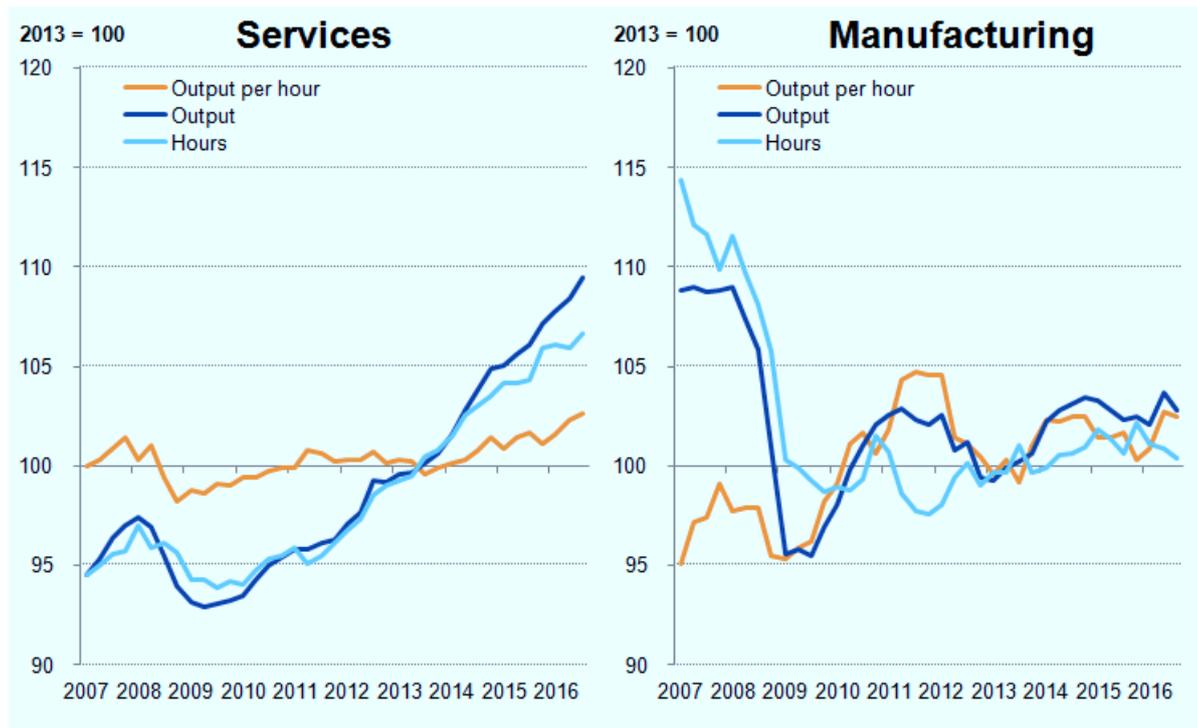
6 . Unit labour costs grow for the sixth consecutive quarter

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 2.3% in the year to Quarter 3 (July to Sept) 2016, reflecting a larger percentage increase in labour costs per hour than output per hour.

Figure 4 shows changes in ULCs since Quarter 1 (Jan to Mar) 2008 on a quarter on same quarter a year earlier basis. The bars represent the contribution to changes in ULCs from changes in labour costs per hour and changes in output per hour. Holding other factors constant, increasing output per hour reduces unit labour costs – 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 (negative) output per hour growth has a negative (positive) effect on ULC growth.

While growth in ULCs has been broadly positive since the period following the recent economic downturn, averaging around 1.5% since Quarter 1 2008, there has been substantial variation. During the recent economic downturn ULCs began to grow at a relative high rate, reaching a peak of 6.8% 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 (Oct to Dec) 2010. Since then ULC growth has been either low or negative, reflecting both low growth in hourly labour costs and productivity. The most recent quarterly observations are at the higher end of the range observed since 2011 – and are notably stronger than 2 years earlier – but have been relatively stable.

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 3 (July to Sept) 2016
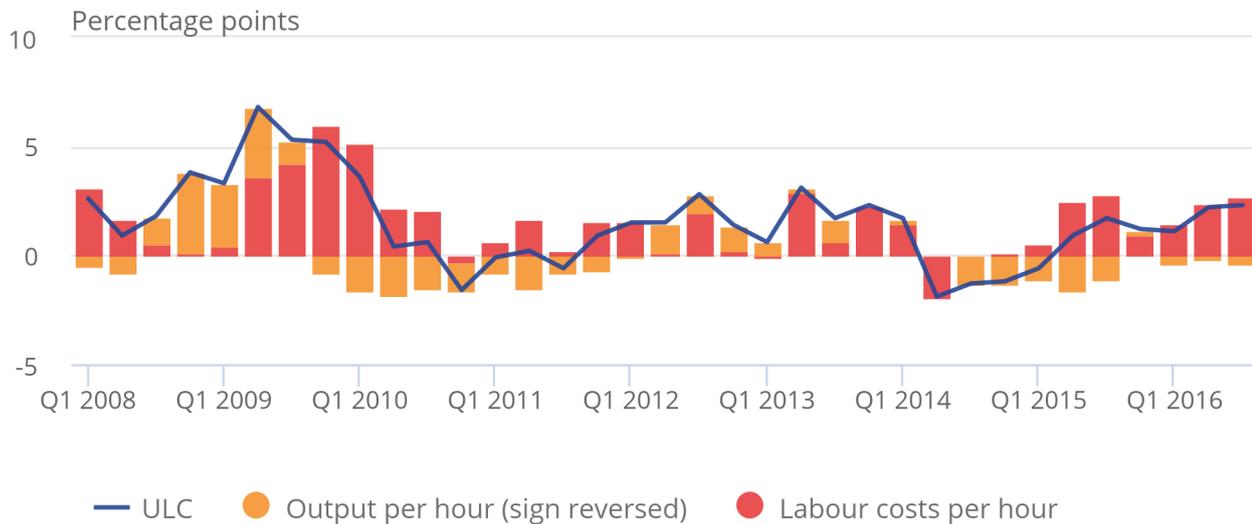
Source: Office for National Statistics

Notes:

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

7 . Links to related statistics

Recent highlights

Date	Release
6 January 17	UK productivity introduction: July to Sept 2016 draws together the headlines of the productivity releases into a single release, providing additional analysis of our productivity statistics.
6 January 17	Labour Productivity: July to Sept 2016 contains the latest estimates of labour productivity for the whole economy and a range of industries, together with estimates of unit labour costs.
6 January 17	Volume index of UK capital services (experimental): estimates to 2015 provide estimates of the contribution of the capital stock to production in the economy, split by asset and industry.
6 January 17	Management practices and productivity for manufacturing businesses in Great Britain: experimental estimates for 2015 is a secondary paper analysing the relationship between management practices and productivity, following the release of initial results in October.
6 October 16	International comparisons of UK productivity (ICP), first estimates: 2015 presents an international comparison of labour productivity across the G7 nations, in terms of growth in GDP per hour and GDP per worker.
6 October 16	Quality adjusted labour input: UK estimates to 2015 includes estimates of changes in the number of hours supplied in the UK economy adjusted for changes in the quality of the labour supply.
6 October 16	Experimental data on the management practices of manufacturing businesses in Great Britain: 2016 presents information on the design and initial results of the survey, focusing on descriptive statistics on the distribution of structured management practices across various characteristics of manufacturing businesses in Great Britain.
6 October 16	Measuring output in the Information Communication and Telecommunications industries: 2016 presents initial findings from a review of data sources and methods used in estimating output of the information communication and telecommunications industries, with a focus on the telecommunications industry.
6 October 16	Developing labour market metrics for the market sector, UK: 2016 details the development of new labour market metrics covering market sector employment, hours worked and labour remuneration, which have been compiled at component-industry level for the first time.

Related content

International comparisons of productivity is 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 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 [Phelps (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 Handbook](#).

8 . What's changed in this release?

[Several sources of revisions affecting workforce jobs](#) have been implemented, including a benchmark of employees to the Business Register and Employment Survey (BRES) in 2015, revised seasonal adjustment, changes to public sector employment, the reweighting of the Labour Force Survey, improvements in the coverage of the business survey population, and changes in the source for data on government-supported trainees.

These have no effect on whole-economy estimates of hours worked, and a minimal effect on estimates of whole-economy productivity jobs. The impact on industry estimates is larger beginning in 2015 – the period from which the annual benchmark to BRES takes effect. Prior to 2015, the impact on industry estimates is minimal.

9 . Quality and methodology

The measure of output used in these statistics is the chain 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). These measures differ because NGVA is not adjusted to account for price changes; this means that if prices were to rise more quickly in 1 region than the others, then this would be reflected in apparent improved measured productivity performance in that region relative to the others.

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 3 ways:

- to achieve consistency with the measurement of GVA, the employee component of productivity jobs is derived on a Reporting Unit (RU) basis, whereas the employee component of the WFJ estimates is on a Local Unit (LU) 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:

$$\Delta \text{Labour productivity} = \Delta \left(\frac{\text{Output in gross value added (GVA) terms}}{\text{Labour Input (hours, workers or jobs)}} \right) \approx \Delta \text{GVA} - \Delta \text{Labour Input}$$

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 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:

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

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 on the archived version of our website, 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 document 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 (2013=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
2012	99.8	99.8	100.5	100.1†	101.9†	100.3†	101.9	99.9	100.4
2013	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2014	101.0†	100.9	100.6	101.1	101.4	102.1	102.4†	100.8†	100.7†
2015	101.6†	101.7	101.5	101.1	101.6	101.0	101.2	101.6†	101.3†
2012 Q4	99.5	99.5	100.0	98.2†	100.3†	98.6†	100.5	99.9	100.1
2013 Q1	100.1	100.2	100.2	99.4	99.3	99.6	99.6	100.5	100.3
Q2	100.0	100.0	100.2	100.6	100.4	100.6	100.3†	100.0	100.2
Q3	100.0	99.9	99.6	99.9	99.2	99.7	99.2†	99.8	99.6
Q4	99.9	99.9	100.0	100.1	101.0	100.2	101.0	99.7	99.9
2014 Q1	100.2	100.2†	100.0	101.4	101.4	102.4	102.3	100.0	100.1
Q2	100.7	100.5	100.2	101.4	101.5	102.5	102.2	100.3	100.3†
Q3	101.3	101.2	100.9	100.7	101.4	101.7	102.5	101.0	100.8
Q4	101.8	101.8	101.3	100.7	101.3	101.8	102.5	101.8	101.4
2015 Q1	101.3	101.3	101.1	100.1	101.0	100.8	101.4	101.1†	100.9
Q2	101.9†	101.8	101.8	101.2	101.6	101.1	101.4	101.5	101.4
Q3	101.6†	101.7	102.0	101.4	102.6	100.8	101.7	101.5	101.7
Q4	101.7	101.9	101.1	101.8	101.0	101.3	100.3	102.1	101.1
2016 Q1	101.9	102.2	101.5†	101.5	101.8	101.2	100.9	102.6	101.6
Q2	102.1	102.2	102.0	102.8	104.1	101.7	102.7	102.5	102.3
Q3	102.5	102.7	102.4	102.9	104.3	101.5	102.5	103.2	102.6
Per cent change on quarter a year ago									
	A4YN	LNNP	LZVD	DJ4O†	DJK5†	DJ4R†	DJK8	DJE5	DJQ3
2012 Q4	−0.6	−0.6	−1.2	−5.9†	−4.9†	−4.4†	−3.9	0.8	−0.1
2013 Q1	0.1	0.2	−0.7	−3.5	−5.2	−3.3	−4.8	1.0	–
Q2	0.6	0.7	−0.2	0.6	−1.5	0.7	−1.1†	0.6	−0.1
Q3	−0.3	−0.4	−1.0	0.8	−1.5	0.1	−1.9†	−0.9	−1.1
Q4	0.4	0.4	–	1.9	0.7	1.6	0.5	−0.2	−0.2
2014 Q1	0.1	–†	−0.2	2.0	2.1	2.8	2.7	−0.5	−0.2†
Q2	0.7	0.5	–	0.8	1.1	1.9	1.9	0.3	0.1†
Q3	1.3	1.3	1.3	0.8	2.2	2.0	3.3	1.2	1.2
Q4	1.9	1.9	1.3	0.6	0.3	1.6	1.5	2.1	1.5
2015 Q1	1.1	1.1	1.1	−1.3	−0.4	−1.6	−0.9	1.1†	0.8
Q2	1.2†	1.3	1.6	−0.2	0.1	−1.4	−0.8	1.2	1.1
Q3	0.3†	0.5	1.1	0.7	1.2	−0.9	−0.8	0.5	0.9
Q4	−0.1	0.1	−0.2	1.1	−0.3	−0.5	−2.1	0.3	−0.3
2016 Q1	0.6	0.9	0.4†	1.4	0.8	0.4	−0.5	1.5	0.7
Q2	0.2	0.4	0.2	1.6	2.5	0.6	1.3	1.0	0.9
Q3	0.9	1.0	0.4	1.5	1.7	0.7	0.8	1.7	0.9
Per cent change on previous quarter									
	A4YO	DMWR	TXBB	DJ4N	DJK4†	DJ4Q†	DJK7	DJE4	DJQ2
2012 Q4	−0.8	−0.8	−0.6	−0.9	−0.4†	−1.0†	−0.6	−0.8	−0.6
2013 Q1	0.6	0.7	0.2	1.2†	−1.0	1.0	−0.9	0.6	0.2
Q2	−0.1	−0.2	–	1.2	1.1	1.0	0.7†	−0.5	−0.1
Q3	–	−0.1	−0.6	−0.7	−1.2	−0.9	−1.1†	−0.2	−0.6
Q4	−0.1	–	0.4	0.2	1.8	0.5	1.8	−0.1	0.3
2014 Q1	0.3	0.3†	–	1.3	0.4	2.2	1.3	0.3	0.2
Q2	0.5	0.3	0.2	–	0.1	0.1	−0.1	0.3	0.2†
Q3	0.6	0.7	0.7	−0.7	−0.1	−0.8	0.3	0.7	0.5
Q4	0.5	0.6	0.4	–	−0.1	0.1	–	0.8	0.6
2015 Q1	−0.5	−0.5	−0.2	−0.6	−0.3	−1.0	−1.1	−0.7†	−0.5
Q2	0.6†	0.5	0.7	1.1	0.6	0.3	–	0.4	0.5
Q3	−0.3†	−0.1	0.2	0.2	1.0	−0.3	0.3	–	0.3
Q4	0.1	0.2	−0.9	0.4	−1.6	0.5	−1.4	0.6	−0.6
2016 Q1	0.2	0.3	0.4†	−0.3	0.8	−0.1	0.6	0.5	0.5
Q2	0.2	–	0.5	1.3	2.3	0.5	1.8	−0.1	0.7
Q3	0.4	0.5	0.4	0.1	0.2	−0.2	−0.2	0.7	0.3

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

2 Unit labour costs and unit wage costs
United Kingdom

<div align="right">Seasonally adjusted (2013=100)</div>

	Whole economy		Manufacturing
	Unit labour costs	Unit wage costs	Unit wage costs
Section	A-U	A-U	C

Indices

	LNNL	LNNK	DIX4
2012	98.2	98.2	97.5†
2013	100.0	100.0	100.0
2014	99.3	100.4	100.0
2015	100.1†	101.8	102.4
2012 Q4	98.3	99.1	99.8†
2013 Q1	98.4	97.8	99.1
Q2	100.9	100.9	99.6
Q3	100.1	100.4	100.4
Q4	100.6	100.9	100.8
2014 Q1	100.1	100.6	99.4
Q2	99.0	100.3	99.4
Q3	98.8	99.8	100.2
Q4	99.3	100.7	100.8
2015 Q1	99.5†	101.2	101.8
Q2	99.8	101.3†	102.2
Q3	100.5	102.4	102.7
Q4	100.5	102.2	102.8
2016 Q1	100.6	102.4	103.2
Q2	102.0	103.3	103.9
Q3	102.8	103.6	104.7

Per cent change on quarter a year ago

	DMWN	LOJE	DJ4J
2012 Q4	1.4	2.7	6.6†
2013 Q1	0.6	1.0	5.7
Q2	3.1	2.5	1.8
Q3	1.7	1.9	1.8
Q4	2.3	1.7	1.0
2014 Q1	1.7	2.8	0.3
Q2	−1.9	−0.6	−0.2
Q3	−1.3	−0.6	−0.2
Q4	−1.2	−0.2	−
2015 Q1	−0.6†	0.6	2.4
Q2	0.9	1.0†	2.8
Q3	1.7	2.6	2.5
Q4	1.2	1.5	2.0
2016 Q1	1.1	1.2	1.4
Q2	2.2	2.0	1.7
Q3	2.3	1.2	1.9

Per cent change on previous quarter

	DMWO	DMWL	DJ4I
2012 Q4	−0.2	0.6	1.2†
2013 Q1	0.2	−1.3	−0.7
Q2	2.5	3.2	0.5
Q3	−0.8	−0.5	0.8
Q4	0.4	0.5	0.4
2014 Q1	−0.4	−0.3	−1.4
Q2	−1.1	−0.3	−
Q3	−0.2	−0.5	0.8
Q4	0.5	0.8	0.6
2015 Q1	0.2†	0.6†	1.0
Q2	0.3	0.1	0.4
Q3	0.6	1.1	0.5
Q4	−	−0.2	0.1
2016 Q1	0.2	0.2	0.4
Q2	1.4	0.9	0.7
Q3	0.8	0.3	0.8

† 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

Seasonally adjusted (2013=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 (£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
2012	102.2	106.6	96.1†	97.9	99.9	102.9†	103.5†	112.8†	94.0†	95.2†
2013	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2014	102.8†	95.5†	98.2	103.9†	104.9†	101.4	100.9	111.3	100.9	104.2
2015	100.0	104.0	98.2	109.2	101.8	99.3	104.0	96.1	101.9	100.6
2012 Q4	100.9†	107.7	95.4†	95.8	99.2	100.4†	104.3†	110.1†	94.2†	88.9†
2013 Q1	100.3	106.6†	97.5	96.2	101.1	99.4	103.1	99.1	100.4	96.9
Q2	101.3	100.2	101.0	105.2	98.0	99.0	102.7	98.3	99.6	99.1
Q3	98.8	98.2	101.7	98.3†	98.8	99.6	97.5	100.4	100.5	102.3
Q4	99.6	95.0	99.9	100.3	102.1	102.0	96.7	102.1	99.5	101.7
2014 Q1	103.9	97.8	99.1	102.3	106.5†	102.6	98.8	109.0	100.6	105.1
Q2	103.3	99.5	97.8	101.6	106.1	101.2	101.0	113.8	101.9	103.0
Q3	102.2	91.1	98.0	104.7	104.4	101.0	101.6	112.8	99.6	104.1
Q4	101.7	93.4	97.9	107.1	102.4	100.6	102.1	109.6	101.6	104.5
2015 Q1	100.5	101.0	98.7	108.4	101.3	101.0	100.4	99.8	101.7	99.9
Q2	99.0	105.1	97.0	108.5	99.3	101.3	105.8	96.1	103.7	101.2
Q3	100.2	106.6	98.4	109.5	103.1	96.2	105.3	94.1	101.0	100.6
Q4	100.2	103.1	98.8	110.5	103.5	98.6	104.6	94.2	101.3	100.7
2016 Q1	98.9	104.8	99.2	108.8	104.4	100.9	103.5	94.3	99.8	102.8
Q2	98.6	96.6	101.7	114.8	105.3	98.0	105.3	96.7	103.3	100.6
Q3	99.0	101.3	100.4	109.2	101.3	97.6	103.9	100.8	100.9	106.4
Per cent change on quarter a year ago										
	DJ56	DJ5E	DJ5H	DJ5K	DJ5N	DJB6	DJB9	DJC4	DJD2	DJD7
2012 Q4	−2.9†	−10.7†	−3.0†	−5.1	−4.2	0.5†	10.6†	−6.9†	−1.1†	−21.4†
2013 Q1	−2.8	−3.4	−4.2	−6.5	1.3	−3.6	1.5	−14.6	6.1	−7.3
Q2	−1.3	−3.7	8.1	10.0	−3.6	−3.2	−0.8	−13.9	7.6	2.6
Q3	−3.1	−6.0	8.7	0.9†	–	−5.7	−6.9	−9.4	6.1	12.5
Q4	−1.3	−11.8	4.7	4.7	2.9	1.6	−7.3	−7.3	5.6	14.4
2014 Q1	3.6	−8.3	1.6	6.3	5.3†	3.2	−4.2	10.0	0.2	8.5
Q2	2.0	−0.7	−3.2	−3.4	8.3	2.2	−1.7	15.8	2.3	3.9
Q3	3.4	−7.2	−3.6	6.5	5.7	1.4	4.2	12.4	−0.9	1.8
Q4	2.1	−1.7	−2.0	6.8	0.3	−1.4	5.6	7.3	2.1	2.8
2015 Q1	−3.3	3.3	−0.4	6.0	−4.9	−1.6	1.6	−8.4	1.1	−4.9
Q2	−4.2	5.6	−0.8	6.8	−6.4	0.1	4.8	−15.6	1.8	−1.7
Q3	−2.0	17.0	0.4	4.6	−1.2	−4.8	3.6	−16.6	1.4	−3.4
Q4	−1.5	10.4	0.9	3.2	1.1	−2.0	2.4	−14.1	−0.3	−3.6
2016 Q1	−1.6	3.8	0.5	0.4	3.1	−0.1	3.1	−5.5	−1.9	2.9
Q2	−0.4	−8.1	4.8	5.8	6.0	−3.3	−0.5	0.6	−0.4	−0.6
Q3	−1.2	−5.0	2.0	−0.3	−1.7	1.5	−1.3	7.1	−0.1	5.8
Per cent change on previous quarter										
	DJ55	DJ58	DJ5G	DJ5J	DJ5M	DJB3	DJB8	DJC3	DJC6	DJD4
2012 Q4	−1.1†	3.1	1.9†	−1.6	0.4	−4.9	−0.4†	−0.6†	−0.5	−2.2†
2013 Q1	−0.6	−1.0†	2.2	0.4	1.9	−1.0†	−1.2	−10.0	6.6†	9.0
Q2	1.0	−6.0	3.6	9.4	−3.1	−0.4	−0.4	−0.8	−0.8	2.3
Q3	−2.5	−2.0	0.7	−6.6†	0.8	0.6	−5.1	2.1	0.9	3.2
Q4	0.8	−3.3	−1.8	2.0	3.3	2.4	−0.8	1.7	−1.0	−0.6
2014 Q1	4.3	2.9	−0.8	2.0	4.3†	0.6	2.2	6.8	1.1	3.3
Q2	−0.6	1.7	−1.3	−0.7	−0.4	−1.4	2.2	4.4	1.3	−2.0
Q3	−1.1	−8.4	0.2	3.1	−1.6	−0.2	0.6	−0.9	−2.3	1.1
Q4	−0.5	2.5	−0.1	2.3	−1.9	−0.4	0.5	−2.8	2.0	0.4
2015 Q1	−1.2	8.1	0.8	1.2	−1.1	0.4	−1.7	−8.9	0.1	−4.4
Q2	−1.5	4.1	−1.7	0.1	−2.0	0.3	5.4	−3.7	2.0	1.3
Q3	1.2	1.4	1.4	0.9	3.8	−5.0	−0.5	−2.1	−2.6	−0.6
Q4	–	−3.3	0.4	0.9	0.4	2.5	−0.7	0.1	0.3	0.1
2016 Q1	−1.3	1.6	0.4	−1.5	0.9	2.3	−1.1	0.1	−1.5	2.1
Q2	−0.3	−7.8	2.5	5.5	0.9	−2.9	1.7	2.5	3.5	−2.1
Q3	0.4	4.9	−1.3	−4.9	−3.8	−0.4	−1.3	4.2	−2.3	5.8

† 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 hour worked: 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 (£)										
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
2012	102.8†	106.2	98.5	96.5	104.8	108.1	103.8	114.3†	93.7†	95.8
2013	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2014	103.9	94.6†	99.0†	104.6†	106.8†	102.1†	103.8†	109.3	99.4	102.8†
2015	99.9	100.3	98.3	110.9	101.1	100.9	106.3	96.6	99.9	102.1
2012 Q4	99.9	109.3†	99.2†	95.5†	102.2	107.1	105.6	109.9†	94.1	90.9
2013 Q1	100.4†	102.0	100.3	95.9	98.5†	101.5	104.1†	97.6	98.8	97.5†
Q2	101.6	98.8	101.8	102.3	98.9	99.0	100.5	97.8	99.5†	98.6
Q3	99.5	99.4	98.7	99.3	100.4	96.9	94.7	101.3	101.4	101.3
Q4	98.5	99.9	99.2	102.5	102.2	102.6	100.8	103.2	100.4	102.7
2014 Q1	102.4	101.4	98.5	103.9	105.9	103.2	99.5	108.5	100.7	104.6
Q2	103.5	100.5	98.8	103.3	108.6	100.2†	103.5	111.4	98.0	101.5
Q3	104.6	89.5	99.1	104.0	110.4	101.6	105.3	105.3	98.9	102.2
Q4	104.9	86.9	99.4	107.3	102.3	103.4	107.0	108.6	100.0	103.0
2015 Q1	101.5	93.7	102.6	109.6	99.2	101.5	104.1	100.7	99.7	102.7
Q2	100.8	98.2	98.0	111.4	98.2	104.0	105.7	96.6	99.7	103.2
Q3	99.2	105.0	97.1	112.0	102.5	100.7	108.5	95.9	100.0	102.5
Q4	98.0	104.4	95.5	110.4	104.3	97.5	106.7	93.0	100.2	99.9
2016 Q1	98.2	97.5	96.9	110.6	107.6	102.2	103.8	96.5	99.4	100.5
Q2	96.4	94.7	104.7	115.2	110.7	103.2	105.2	95.3	104.9	99.5
Q3	102.6	97.5	106.6	108.9	104.8	102.3	103.7	98.9	100.0	100.3
Per cent change on quarter a year ago										
	DJL3	DJL6	DJM3	DJM6	DJM9	DJN6	DJN9	DJO7	DJP2	DJP5
2012 Q4	−4.2	−9.4†	−1.7†	−7.5†	−6.8	2.1†	13.8†	−7.7†	−2.0	−17.7
2013 Q1	−5.3	−4.4	−1.0	−6.7	−8.0†	−4.1	3.4	−17.1	4.7†	−8.0†
Q2	−1.3	−5.9	6.4	8.7	−7.1	−6.4	−3.0	−17.3	7.0	2.3
Q3	−2.9†	−4.2	1.0	6.1	−2.8	−14.9	−10.0	−9.1	8.7	12.8
Q4	−1.4	−8.6	–	7.3	–	−4.2	−4.5	−6.1	6.7	13.0
2014 Q1	2.0	−0.6	−1.8	8.3	7.5	1.7	−4.4	11.2	1.9	7.3
Q2	1.9	1.7	−2.9	1.0	9.8	1.2	3.0	13.9	−1.5	2.9
Q3	5.1	−10.0	0.4	4.7	10.0	4.9	11.2	7.2	−2.5	0.9
Q4	6.5	−13.0	0.2	4.7	0.1	0.8	6.2	5.2	−0.4	0.3
2015 Q1	−0.9	−7.6	4.2	5.5	−6.3	−1.6	4.6	−7.2	−1.0	−1.8
Q2	−2.6	−2.3	−0.8	7.8	−9.6	3.8	2.1	−13.3	1.7	1.7
Q3	−5.2	17.3	−2.0	7.7	−7.2	−0.9	3.0	−11.7	1.1	0.3
Q4	−6.6	20.1	−3.9	2.9	2.0	−5.7	−0.3	−14.4	0.2	−3.0
2016 Q1	−3.3	4.1	−5.6	0.9	8.5	0.7	−0.3	−4.2	−0.3	−2.1
Q2	−4.4	−3.6	6.8	3.4	12.7	−0.8	−0.5	−1.3	5.2	−3.6
Q3	3.4	−7.1	9.8	−2.8	2.2	1.6	−4.4	3.1	–	−2.1
Per cent change on previous quarter										
	DJL2	DJL5	DJM2	DJM5	DJM8	DJN5	DJN8	DJO6	DJO9	DJP4
2012 Q4	−2.5†	5.3†	1.5	2.0	−1.1	−5.9	0.4	−1.3	0.9	1.2
2013 Q1	0.5	−6.7	1.1†	0.4†	−3.6†	−5.2	−1.4†	−11.2†	5.0	7.3†
Q2	1.2	−3.1	1.5	6.7	0.4	−2.5	−3.5	0.2	0.7†	1.1
Q3	−2.1	0.6	−3.0	−2.9	1.5	−2.1	−5.8	3.6	1.9	2.7
Q4	−1.0	0.5	0.5	3.2	1.8	5.9	6.4	1.9	−1.0	1.4
2014 Q1	4.0	1.5	−0.7	1.4	3.6	0.6	−1.3	5.1	0.3	1.9
Q2	1.1	−0.9	0.3	−0.6	2.5	−2.9†	4.0	2.7	−2.7	−3.0
Q3	1.1	−10.9	0.3	0.7	1.7	1.4	1.7	−2.5	0.9	0.7
Q4	0.3	−2.9	0.3	3.2	−7.3	1.8	1.6	–	1.1	0.8
2015 Q1	−3.2	7.8	3.2	2.1	−3.0	−1.8	−2.7	−7.3	−0.3	−0.3
Q2	−0.7	4.8	−4.5	1.6	−1.0	2.5	1.5	−4.1	–	0.5
Q3	−1.6	6.9	−0.9	0.5	4.4	−3.2	2.6	−0.7	0.3	−0.7
Q4	−1.2	−0.6	−1.6	−1.4	1.8	−3.2	−1.7	−3.0	0.2	−2.5
2016 Q1	0.2	−6.6	1.5	0.2	3.2	4.8	−2.7	3.8	−0.8	0.6
Q2	−1.8	−2.9	8.0	4.2	2.9	1.0	1.3	−1.2	5.5	−1.0
Q3	6.4	3.0	1.8	−5.5	−5.3	−0.9	−1.4	3.8	−4.7	0.8

† 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 (2013=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 (£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
2012	95.8	98.4†	105.0	101.1	101.2	104.8†	98.4	96.0	101.1†	104.7	103.5†
2013	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2014	104.4	104.8	98.3†	96.4†	98.3†	101.3	100.9	103.3†	100.2	97.9†	102.8
2015	107.3	101.7	99.6	99.5	101.3	99.6	101.8†	104.9	99.9	94.7	107.1
2012 Q4	96.5	98.4	104.2†	100.0†	100.1	103.7†	98.0†	98.7†	101.2†	101.4†	100.7†
2013 Q1	98.1	101.2	103.1	100.9	101.0†	103.7	99.8	96.7	101.0	100.0	103.7
Q2	99.7	100.3	101.0	100.6	100.3	99.4	100.1	99.7	99.7	100.1	100.2
Q3	100.8	98.6	99.1	100.0	99.7	98.2	100.8	101.0	99.5	99.6	98.6
Q4	101.4	99.9†	96.7	98.5	99.1	98.6	99.2	102.7	99.7	100.4	97.5
2014 Q1	102.8	102.8	97.0	96.0	98.0	99.8	98.8	102.9	99.9	98.5	101.5
Q2	104.0	103.5	98.2	96.1	97.1	101.8	100.1	103.3	99.9	99.6	100.2
Q3	104.6†	106.3	98.8	96.0	96.7	102.5	101.4	103.6	100.5	97.6	104.4
Q4	106.2	106.4	99.0	97.4	101.2	100.9	103.3	103.5	100.5	95.8	105.2
2015 Q1	106.0	105.2	99.4	97.5	101.9	98.9	101.2	104.3	99.3	94.6	104.6
Q2	107.2	102.5	99.3	98.7	100.5	98.2	102.4	104.8	99.9	94.8	104.7
Q3	107.6	100.4	98.9	99.5	99.8	100.1	101.5	105.9	100.2	93.9	107.3
Q4	108.2	98.8	100.7	102.2	102.9	101.3	102.1	104.4	100.0	95.4	111.7
2016 Q1	110.4	97.5	101.0	103.2	104.5	100.2	102.1	105.0	99.9	95.5	112.5
Q2	110.5	96.6	101.8	101.9	105.9	100.5	103.2	105.8	99.4	94.9	113.0
Q3	111.1	95.6	102.7	106.1	106.4	102.7	103.4	108.2	99.5	95.7	111.3

Per cent change on quarter a year ago

	DJE8	DJF3	DJF6	DJF9	DJG8	DJH6	DJH9	DJI4	DJI7	DJJ5	DJJ8
2012 Q4	0.7†	−1.4†	−0.2†	1.3†	−2.6†	−1.8†	−0.5†	8.0	1.6†	−0.2	−2.6
2013 Q1	3.0	2.7	−1.3	−1.3	−0.1	−0.6	−0.2	2.1†	0.8	−2.4†	0.2†
Q2	5.3	1.9	−3.7	−0.5	−1.3	−6.9	3.5	6.0	−1.0	−3.6	−3.4
Q3	4.1	0.5	−6.8	−0.9	−2.2	−6.0	2.0	4.9	−2.6	−10.4	−7.1
Q4	5.1	1.5	−7.2	−1.5	−1.0	−4.9	1.2	4.1	−1.5	−1.0	−3.2
2014 Q1	4.8	1.6	−5.9	−4.9	−3.0	−3.8	−1.0	6.4	−1.1	−1.5	−2.1
Q2	4.3	3.2	−2.8	−4.5	−3.2	2.4	–	3.6	0.2	−0.5	–
Q3	3.8	7.8	−0.3	−4.0	−3.0	4.4	0.6	2.6	1.0	−2.0	5.9
Q4	4.7	6.5	2.4	−1.1	2.1	2.3	4.1	0.8	0.8	−4.6	7.9
2015 Q1	3.1	2.3	2.5	1.6	4.0	−0.9	2.4	1.4	−0.6	−4.0	3.1
Q2	3.1	−1.0	1.1	2.7	3.5	−3.5	2.3	1.5	–	−4.8	4.5
Q3	2.9	−5.6	0.1	3.6	3.2	−2.3	0.1	2.2	−0.3	−3.8	2.8
Q4	1.9	−7.1	1.7	4.9	1.7	0.4	−1.2	0.9	−0.5	−0.4	6.2
2016 Q1	4.2	−7.3	1.6	5.8	2.6	1.3	0.9	0.7	0.6	1.0	7.6
Q2	3.1	−5.8	2.5	3.2	5.4	2.3	0.8	1.0	−0.5	0.1	7.9
Q3	3.3	−4.8	3.8	6.6	6.6	2.6	1.9	2.2	−0.7	1.9	3.7

Per cent change on previous quarter

	DJE7	DJF2	DJF5	DJF8	DJG6	DJH5	DJH8	DJI3	DJI6	DJJ4	DJJ7
2012 Q4	−0.3†	0.3†	−2.0	−0.9†	−1.8	−0.8†	−0.8†	2.5†	−1.0	−8.7†	−5.1
2013 Q1	1.7	2.8	−1.1	0.9	0.9†	–	1.8	−2.0	−0.2†	−1.4	3.0†
Q2	1.6	−0.9	−2.0†	−0.3	−0.7	−4.1	0.3	3.1	−1.3	0.1	−3.4
Q3	1.1	−1.7	−1.9	−0.6	−0.6	−1.2	0.7	1.3	−0.2	−0.5	−1.6
Q4	0.6	1.3	−2.4	−1.5	−0.6	0.4	−1.6	1.7	0.2	0.8	−1.1
2014 Q1	1.4	2.9	0.3	−2.5	−1.1	1.2	−0.4	0.2	0.2	−1.9	4.1
Q2	1.2	0.7	1.2	0.1	−0.9	2.0	1.3	0.4	–	1.1	−1.3
Q3	0.6	2.7	0.6	−0.1	−0.4	0.7	1.3	0.3	0.6	−2.0	4.2
Q4	1.5	0.1	0.2	1.5	4.7	−1.6	1.9	−0.1	–	−1.8	0.8
2015 Q1	−0.2	−1.1	0.4	0.1	0.7	−2.0	−2.0	0.8	−1.2	−1.3	−0.6
Q2	1.1	−2.6	−0.1	1.2	−1.4	−0.7	1.2	0.5	0.6	0.2	0.1
Q3	0.4	−2.0	−0.4	0.8	−0.7	1.9	−0.9	1.0	0.3	−0.9	2.5
Q4	0.6	−1.6	1.8	2.7	3.1	1.2	0.6	−1.4	−0.2	1.6	4.1
2016 Q1	2.0	−1.3	0.3	1.0	1.6	−1.1	–	0.6	−0.1	0.1	0.7
Q2	0.1	−0.9	0.8	−1.3	1.3	0.3	1.1	0.8	−0.5	−0.6	0.4
Q3	0.5	−1.0	0.9	4.1	0.5	2.2	0.2	2.3	0.1	0.8	−1.5

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

6 Output per hour worked: Services sections
United Kingdom

Seasonally adjusted (2013=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
2012	96.9	98.4	107.3	102.4	101.4†	100.9†	99.2	95.9†	101.3†	102.6	104.2
2013	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2014	103.4	104.9†	99.2	96.1†	97.7	100.1	100.2†	106.9	99.7	96.3	102.3†
2015	107.3†	102.0	98.6†	100.1	102.0	97.3	100.5	106.0	99.6	92.8†	107.3
2012 Q4	96.7	98.7	105.7†	103.6	101.1†	101.6	99.2	99.1†	100.5†	100.6	99.7†
2013 Q1	98.2	100.0	102.5	101.5	101.8	103.5†	99.9	95.4	101.2	98.7	103.7
Q2	99.6†	100.4	101.7	101.3†	100.2	101.9	100.1	98.7	100.2	100.4	101.3
Q3	100.7	99.4	98.7	99.0	98.5	96.8	100.5†	101.6	99.1	100.8	99.8
Q4	101.6	100.2†	97.1	98.3	99.5	97.8	99.6	104.3	99.5	100.1	95.2
2014 Q1	102.5	101.6	98.7	95.7	96.8	98.3	99.7	106.0	99.7	98.5†	98.8
Q2	103.1	103.0	99.4	95.6	96.4	100.7	99.0	107.7	99.6	96.1	101.1
Q3	102.8	107.1	99.8	96.5	96.9	103.9	100.1	107.5	99.9	97.0	101.9
Q4	105.3	107.9	98.8	96.6	100.7	97.4	101.8	106.4	99.6	93.5	107.5
2015 Q1	105.7	105.6	98.6	98.1	103.0	95.8	99.3	106.5	99.3	90.6	103.6
Q2	107.0	103.1	98.0	98.8	101.3	95.2	101.1	106.8	99.9	93.2	106.7
Q3	108.7	101.1	97.6	100.9	101.5	96.6	101.4	107.0	100.1	93.8	107.4
Q4	107.8	98.2	100.0	102.7	102.1	101.4	100.3	103.6	99.0	93.4	111.4
2016 Q1	109.3	98.1	101.1	102.3	102.8	99.1	100.2	104.6	99.4	93.1	111.2
Q2	110.9	97.7	100.6	102.2	104.5	94.7	105.2	102.1	100.4	95.6	109.5
Q3	111.1	96.9	101.9	104.0	103.9	101.0	103.9	105.4	99.6	94.6	111.5
Per cent change on quarter a year ago											
	DJQ6	DJQ9	DJR4	DJR7	DJS5	DJS8	DJT6	DJT9	DJU7	DJV8	DJW3
2012 Q4	0.4	−1.9†	−1.8†	5.6	−0.6†	−0.1	−0.7	6.1	−1.1†	3.1†	−3.7
2013 Q1	2.1	2.2	−4.7	−0.1†	0.5	5.8†	−1.1	0.4	−0.6	−1.8	0.4
Q2	3.0†	1.9	−5.8	−1.2	−2.0	−0.2	2.0†	4.8†	−0.9	−1.9	−3.6
Q3	3.0	0.8	−8.6	−2.8	−2.6	−5.3	2.2	6.5	−2.7	−5.9	−8.2
Q4	5.1	1.5	−8.1	−5.1	−1.6	−3.7	0.4	5.2	−1.0	−0.5	−4.5†
2014 Q1	4.4	1.6	−3.7	−5.7	−4.9	−5.0	−0.2	11.1	−1.5	−0.2	−4.7
Q2	3.5	2.6	−2.3	−5.6	−3.8	−1.2	−1.1	9.1	−0.6	−4.3	−0.2
Q3	2.1	7.7	1.1	−2.5	−1.6	7.3	−0.4	5.8	0.8	−3.8	2.1
Q4	3.6	7.7	1.8	−1.7	1.2	−0.4	2.2	2.0	0.1	−6.6	12.9
2015 Q1	3.1	3.9	−0.1	2.5	6.4	−2.5	−0.4	0.5	−0.4	−8.0	4.9
Q2	3.8	0.1	−1.4	3.3	5.1	−5.5	2.1	−0.8	0.3	−3.0	5.5
Q3	5.7	−5.6	−2.2	4.6	4.7	−7.0	1.3	−0.5	0.2	−3.3	5.4
Q4	2.4	−9.0	1.2	6.3	1.4	4.1	−1.5	−2.6	−0.6	−0.1	3.6
2016 Q1	3.4	−7.1	2.5	4.3	−0.2	3.4	0.9	−1.8	0.1	2.8	7.3
Q2	3.6	−5.2	2.7	3.4	3.2	−0.5	4.1	−4.4	0.5	2.6	2.6
Q3	2.2	−4.2	4.4	3.1	2.4	4.6	2.5	−1.5	−0.5	0.9	3.8
Per cent change on previous quarter											
	DJQ5	DJQ8	DJR3	DJR6	DJS4	DJS7	DJT2	DJT8	DJU6	DJV7	DJW2
2012 Q4	−1.1	0.1	−2.1†	1.8	−†	−0.6†	0.9	3.9	−1.3	−6.1	−8.3†
2013 Q1	1.6	1.3	−3.0	−2.0	0.7	1.9	0.7	−3.7†	0.7†	−1.9	4.0
Q2	1.4†	0.4	−0.8	−0.2†	−1.6	−1.5	0.2	3.5	−1.0	1.7	−2.3
Q3	1.1	−1.0	−2.9	−2.3	−1.7	−5.0	0.4†	2.9	−1.1	0.4	−1.5
Q4	0.9	0.8†	−1.6	−0.7	1.0	1.0	−0.9	2.7	0.4	−0.7	−4.6
2014 Q1	0.9	1.4	1.6	−2.6	−2.7	0.5	0.1	1.6	0.2	−1.6†	3.8
Q2	0.6	1.4	0.7	−0.1	−0.4	2.4	−0.7	1.6	−0.1	−2.4	2.3
Q3	−0.3	4.0	0.4	0.9	0.5	3.2	1.1	−0.2	0.3	0.9	0.8
Q4	2.4	0.7	−1.0	0.1	3.9	−6.3	1.7	−1.0	−0.3	−3.6	5.5
2015 Q1	0.4	−2.1	−0.2	1.6	2.3	−1.6	−2.5	0.1	−0.3	−3.1	−3.6
Q2	1.2	−2.4	−0.6	0.7	−1.7	−0.6	1.8	0.3	0.6	2.9	3.0
Q3	1.6	−1.9	−0.4	2.1	0.2	1.5	0.3	0.2	0.2	0.6	0.7
Q4	−0.8	−2.9	2.5	1.8	0.6	5.0	−1.1	−3.2	−1.1	−0.4	3.7
2016 Q1	1.4	−0.1	1.1	−0.4	0.7	−2.3	−0.1	1.0	0.4	−0.3	−0.2
Q2	1.5	−0.4	−0.5	−0.1	1.7	−4.4	5.0	−2.4	1.0	2.7	−1.5
Q3	0.2	−0.8	1.3	1.8	−0.6	6.7	−1.2	3.2	−0.8	−1.0	1.8

† 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

	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
2012	100.1	..	..	100.7	..	..
2013	100.0	..	..	100.0	..	..
2014	100.9	..	..	100.5	..	..
2015	101.6†	..	..	101.5†	..	..
2012 Q4	99.4	−1.9†	−1.1	100.1	−1.8†	−0.7
2013 Q1	100.0	−0.8	0.6	100.1	−1.4	−
Q2	100.1	0.6	0.2†	100.2	−0.3	0.1
Q3	100.0	−0.5	−0.2	99.7	−1.0	−0.5†
Q4	99.9	0.5	−0.1	100.0	−0.1	0.2
2014 Q1	100.0	−	0.1	99.9	−0.2	−0.1
Q2	100.6	0.5	0.6	100.2	−	0.3
Q3	101.1	1.1	0.5	100.9†	1.1	0.6
Q4	101.8	1.9	0.7	101.2	1.2	0.3
2015 Q1	101.3†	1.3	−0.5	101.2	1.3	−
Q2	102.1	1.5	0.7	101.7	1.5	0.5
Q3	101.5	0.4	−0.5	101.9	1.0	0.1
Q4	101.6	−0.1	0.1	101.3	0.1	−0.5
2016 Q1	102.0	0.7	0.4	101.7	0.5	0.4
Q2	102.4	0.3	0.4	102.5	0.7	0.7
Q3	102.9	1.3	0.5	102.8	1.0	0.4

†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

(2013=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

Level (£)

2013	31 200	14.2	46 300	24.0

Indices

	DJ4K	DJJ9	DJD8	DJP6
1999	86.7[†]	85.4[†]	100.3	96.8[†]
2000	95.2	92.7	100.5	96.4
2001	97.6	98.2	100.3	96.5
2002	112.4	114.7	104.2[†]	101.0
2003	107.9	108.1	106.6	104.8
2004	103.0	103.1	109.4	107.7
2005	104.3	107.5	103.7	102.6
2006	99.6	100.1	103.2	102.0
2007	96.8	99.4	102.2	101.1
2008	99.8	102.0	99.1	99.5
2009	92.5	88.4	89.5	91.8
2010	86.4	81.8	102.5	103.6
2011	95.4	93.6	105.1	108.1
2012	88.5	91.1	98.7	101.0
2013	100.0	100.0	100.0	100.0
2014	100.3	99.5	104.9	102.3
2015	111.9	115.3	107.8	106.3

Per cent change on previous year

	DJ4L	DJK2	DJE2	DJP8
1999	16.7	17.3[†]	–	0.6[†]
2000	9.8	8.6	0.2	−0.4
2001	2.5[†]	5.9	−0.2	0.1
2002	15.2	16.7	3.9[†]	4.7
2003	−4.0	−5.8	2.3	3.7
2004	−4.5	−4.6	2.6	2.8
2005	1.3	4.3	−5.2	−4.8
2006	−4.5	−6.8	−0.5	−0.6
2007	−2.8	−0.7	−1.0	−0.8
2008	3.1	2.6	−3.0	−1.6
2009	−7.3	−13.4	−9.7	−7.7
2010	−6.6	−7.4	14.5	12.9
2011	10.4	14.4	2.5	4.3
2012	−7.2	−2.8	−6.1	−6.6
2013	13.0	9.8	1.3	−0.9
2014	0.3	−0.5	4.9	2.3
2015	11.6	15.9	2.8	3.9

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

<div align="right">(UK=100)</div>

		2009	2010	2011	2012	2013	2014	2015
United Kingdom		100.0	100.0	100.0	100.0	100.0	100.0	100.0
Nominal GVA per filled job								
North East	DJDO	83.2†	83.9	85.0	85.9	85.1	86.2	85.2
North West	DJDP	91.6†	90.9	88.9	89.6	90.0	88.7	90.2
Yorkshire and The Humber	DMBC	88.6†	87.2	86.8	86.9	86.7	85.0	84.3
East Midlands	DMBE	86.6†	87.5	86.7	87.2	88.4	88.9	87.7
West Midlands	DMDN	86.7†	88.1	88.4	88.0	87.6	88.3	87.3
East of England	DMDQ	98.6†	99.1	98.1	97.2	98.4	97.9	97.6
London	DMGH	138.9†	139.9	142.6	139.5	136.9	138.8	138.9
South East	DMGJ	106.8†	106.7	106.0	106.7	107.6	107.2	107.0
South West	DMGK	90.7†	91.2	89.0	90.1	89.3	89.0	89.5
England	DMGL	101.8†	102.1	102.0	101.9	101.8	102.0	101.9
Wales	DMGM	80.0†	78.8	81.2	81.2	81.6	78.5	79.1
Scotland	DMGX	96.9†	95.1	94.4	93.9	95.2	95.5	96.3
Northern Ireland	DMOA	85.5†	83.5	84.8	86.8	85.6	83.8	83.5
Nominal GVA per hour worked								
North East	DMOB	85.1†	85.5	87.6	88.6	87.8	88.0	87.5
North West	DMOH	93.1†	91.5	90.4	90.6	91.7	88.9	90.1
Yorkshire and The Humber	DMOK	90.0†	88.5	87.5	87.9	88.0	86.0	86.1
East Midlands	DMOL	87.0†	87.0	87.5	88.1	89.4	90.3	86.9
West Midlands	DMON	86.6†	87.2	88.8	87.8	87.5	87.9	85.3
East of England	DMOO	100.1	100.3†	99.5	98.6	99.2	99.9	99.3
London	DMOR	130.4†	131.0	132.9	130.6	128.7	130.8	131.5
South East	DMOS	108.6†	109.7	107.9	107.7	109.1	108.3	109.2
South West	DMOT	93.7†	94.4	91.7	93.1	92.0	92.2	92.8
England	DMOV	101.8†	101.9	101.9	101.7	101.8	101.8	101.7
Wales	DMOW	81.9†	81.0	82.0	83.8	83.5	81.3	80.6
Scotland	DMOY	97.1†	96.2	95.4	95.8	96.1	97.0	98.4
Northern Ireland	DMWA	81.4†	80.9	82.3	83.5	81.1	79.4	80.9

†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 (2013=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
2012	98.9	98.9	98.2	100.0	100.6†	98.8	100.7†	99.1	98.4	97.9
2013	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2014	102.4	102.5	102.8	100.1	100.5	100.1†	100.8	100.5†	102.5	102.6
2015	104.2	104.1	104.3	100.0	101.6	101.1	101.7	101.5	104.3†	104.6†
2012 Q4	99.5	99.5	99.0	100.0	100.6†	98.4	100.8†	99.0	99.3	99.1
2013 Q1	99.3	99.2	99.2	99.9	99.8	99.9	99.6	99.7	99.1	99.3
Q2	99.7	99.7	99.5	100.0	99.3	99.5†	99.3	99.7†	99.7	99.5
Q3	100.2	100.3	100.6	100.1	100.4	101.0	100.5	101.0	100.3	100.5
Q4	100.8	100.8	100.7	100.0	100.5	99.6	100.5	99.6	100.9	100.7
2014 Q1	101.6	101.6	101.8	100.0	99.7	99.7	99.8	99.9	101.6	101.5
Q2	102.2	102.4†	102.7	100.2†	100.0	99.9	100.3	100.6	102.5	102.6
Q3	102.6	102.8	103.1	100.2	101.0	100.2	101.4	100.6	102.8	103.0
Q4	103.0	103.0	103.6	100.0	101.2	100.6	101.6	100.9	103.1†	103.5†
2015 Q1	103.7	103.8	104.0	100.1	102.2	101.3	102.4	101.9	103.9	104.1
Q2	103.7	103.7	103.8	100.0	101.7	101.3	101.7	101.4	104.0	104.2
Q3	104.3	104.3	103.9	100.0	101.6	100.4	101.5	100.7	104.5	104.3
Q4	105.0	104.7	105.6	99.8	100.8	101.6	101.2	102.2	105.0	105.9
2016 Q1	105.1	104.8	105.6	99.7	100.9	100.6	100.9	101.1	105.1	106.1
Q2	105.7	105.5	105.7	99.8	101.7	100.4	101.9	100.9	105.8	106.0
Q3	105.8	105.7	106.0	99.9	101.2	99.8	101.3	100.3	106.1	106.7
Per cent change on quarter a year ago										
	DIW9	LNNO	LZVC		DJW8	DK3U	DJX3	DK44	DK2I	DK58
2012 Q4	1.8	1.9	2.5		2.2†	1.1	1.8	1.4	2.3	3.1
2013 Q1	1.2	1.1	2.1		0.6	2.6†	0.1	1.6	1.6†	2.6
Q2	1.0	0.9	1.7		−1.6	0.5	−1.6†	0.3†	1.5	2.3†
Q3	1.1	1.3	1.8		−1.5	0.7	−1.1	0.9	1.8	2.0
Q4	1.3	1.3	1.7		−0.1	1.2	−0.3	0.6	1.6	1.6
2014 Q1	2.3	2.4	2.6		−0.1	−0.2	0.2	0.2	2.5	2.2
Q2	2.5	2.7†	3.2		0.7	0.4	1.0	0.9	2.8	3.1
Q3	2.4	2.5	2.5		0.6	−0.8	0.9	−0.4	2.5	2.5
Q4	2.2	2.2	2.9		0.7	1.0	1.1	1.3	2.2	2.8
2015 Q1	2.1	2.2	2.2		2.5	1.6	2.6	2.0	2.3	2.6
Q2	1.5	1.3	1.1		1.7	1.4	1.4	0.8	1.5	1.6
Q3	1.7	1.5	0.8		0.6	0.2	0.1	0.1	1.7	1.3
Q4	1.9	1.7	1.9		−0.4	1.0	−0.4	1.3	1.8	2.3
2016 Q1	1.4	1.0	1.5		−1.3	−0.7	−1.5	−0.8	1.2	1.9
Q2	1.9	1.7	1.8		−	−0.9	0.2	−0.5	1.7	1.7
Q3	1.4	1.3	2.0		−0.4	−0.6	−0.2	−0.4	1.5	2.3
Per cent change on previous quarter										
	DIW8	TXAJ	TXBU		DJW7	DK3T	DJX2	DK3Y	DK2H	DK57
2012 Q4	0.4	0.5	0.2		−1.3†	−1.9	−0.8	−1.1	0.8	0.6
2013 Q1	−0.2	−0.3	0.2		−0.8	1.5	−1.2†	0.7†	−0.2	0.2
Q2	0.4	0.5	0.3		−0.5	−0.4†	−0.3	−†	0.6	0.2
Q3	0.5	0.6	1.1		1.1	1.5	1.2	1.3	0.6	1.0
Q4	0.6	0.5	0.1		0.1	−1.4	−	−1.4	0.6	0.2
2014 Q1	0.8	0.8	1.1		−0.8	0.1	−0.7	0.3	0.7	0.8
Q2	0.6	0.8†	0.9		0.3	0.2	0.5	0.7	0.9	1.1
Q3	0.4	0.4	0.4		1.0	0.3	1.1	−	0.3	0.4
Q4	0.4	0.2	0.5		0.2	0.4	0.2	0.3	0.3†	0.5†
2015 Q1	0.7	0.8	0.4		1.0	0.7	0.8	1.0	0.8	0.6
Q2	−	−0.1	−0.2		−0.5	−	−0.7	−0.5	0.1	0.1
Q3	0.6	0.6	0.1		−0.1	−0.9	−0.2	−0.7	0.5	0.1
Q4	0.7	0.4	1.6		−0.8	1.2	−0.3	1.5	0.5	1.5
2016 Q1	0.1	0.1	−		0.1	−1.0	−0.3	−1.1	0.1	0.2
Q2	0.6	0.7	0.1		0.8	−0.2	1.0	−0.2	0.7	−0.1
Q3	0.1	0.2	0.3		−0.5	−0.6	−0.6	−0.6	0.3	0.7

†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
2012 Q2	–	–	–	–	–	–	–	–
Q3	–	–	–	–	–	–	–	–
Q4	–	–	–	–	–	–	–	–
2013 Q1	–	–	–	–	–	–	–	–
Q2	–	–	–	–	–	–	–	–
Q3	–	–	–	–	–	–	–	–
Q4	–	–	–	–	–	–	–	–
2014 Q1	–	–	0.1	0.1	–	–	–	–
Q2	–	–	–	–0.1	–	–	–	–
Q3	–	–	–	–	–	–	–	–
Q4	–	–	–	–	–	–	–	–
2015 Q1	–	–	–0.1	–	–	–	–0.1	–0.1
Q2	–	–	–	–	–	–	0.1	0.1
Q3	–0.1	–0.1	–	–	–	–	–0.4	–0.5
Q4	–0.1	–	–0.1	–0.1	–	–	–0.1	0.2
2016 Q1	–0.1	–	–0.1	–	–0.1	–0.1	0.3	0.4
Q2	–0.1	–	–0.1	–	–0.2	–0.1	0.3	0.2

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
2012 Q2	–	0.1	–	–	–0.1	–0.2
Q3	–	–	–0.1	–	–	0.1
Q4	–0.1	–0.2	–	–	0.2	0.2
2013 Q1	0.1	0.2	–	–	–0.1	–0.2
Q2	0.1	0.1	–	–	–0.2	–0.3
Q3	0.1	–	0.1	0.1	–0.2	0.1
Q4	0.1	–0.2	–	–0.1	–0.2	0.2
2014 Q1	–0.1	–	–	–	–	–
Q2	–0.1	0.1	–0.1	–0.1	0.1	–0.2
Q3	–0.2	–0.1	–	0.2	0.1	0.1
Q4	0.3	0.3	0.3	0.2	–0.2	–0.1
2015 Q1	0.5	0.3	0.6	0.3	–0.5	–0.3
Q2	0.9	0.5	0.9	0.2	–0.9	–0.6
Q3	1.4	0.3	1.3	0.7	–1.4	–0.4
Q4	1.4	0.3	1.2	–	–1.4	–0.1
2016 Q1	1.1	–	0.9	–	–1.0	–
Q2	0.4	–0.2	0.3	–0.4	–0.3	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
2012 Q2	–	–	–	–
Q3	–	–	–	–
Q4	–	–	–	–
2013 Q1	–	–	–	–
Q2	–	–	–	–
Q3	–	–	–	–
Q4	–	–	–	–
2014 Q1	–	–	–	–
Q2	–	–	0.1	0.1
Q3	–	–	–	–0.1
Q4	–	–	–0.1	–0.1
2015 Q1	–0.2	–0.2	–0.2	–0.1
Q2	–0.2	–	–0.4	–0.1
Q3	–0.4	–0.2	–0.5	–0.2
Q4	–0.4	–	–0.5	–0.1
2016 Q1	–0.2	–	–0.4	–
Q2	–0.2	–	–0.2	0.1