Statistical bulletin

Gross Domestic Product Preliminary Estimate: Q4 2014

The first estimate of quarterly GDP based on less data but produced earlier, providing a timely indicator of economic growth.

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1. Main points

- Change in gross domestic product (GDP) is the main indicator of economic growth. GDP is estimated to have increased by 0.5% in Q4 2014 compared with growth of 0.7% in Q3 2014.

- Output increased in two of the four main industrial groupings within the economy in Q4 2014. In order of their contribution, output increased by 0.8% in services and 1.3% in agriculture. In contrast, output decreased by 1.8% in construction and 0.1% in production.

- GDP was 2.7% higher in Q4 2014 compared with the same quarter a year ago. GDP in 2014 as a whole was up 2.6% on 2013.

- In Q4 2014 GDP was estimated to have been 3.4% higher than the pre-economic downturn peak of Q1 2008. From the peak in Q1 2008 to the trough in Q2 2009, the economy shrank by 6.0%.

- The preliminary estimate of GDP is produced using the output approach to measuring GDP. At this stage, data content is less than half of the total required for the final output estimate. The estimate is subject to revision as more data become available, but these revisions are typically small between the preliminary and third estimates of GDP.

- All figures in this release are seasonally adjusted.

2. Understanding the preliminary estimate of GDP

About the preliminary estimate of GDP

Change in GDP is the main indicator of economic growth. The preliminary estimate of GDP is based solely on the output approach to measuring GDP and uses the same data that feed into the Index of Services, Index of Production, and Output in the Construction Industry datasets. The growth estimates within this release are created from short-term measures of output and should be considered alongside medium and long-term patterns in the series to give a more comprehensive picture of the key movements (further information on longer-term patterns of GDP, including a comparison with other countries, can be found in the Economic Context section).

The output approach measures gross value added (GVA) at a detailed industry level before aggregating to produce an estimate for the whole economy. GDP (as measured by the output approach) can then be calculated by adding taxes and subtracting subsidies (both only available at whole economy level) to this estimate of total GVA. However, as there is no information available on taxes and subsidies at this stage, the quarterly growth for output GVA is taken as a proxy for GDP growth (more information on creating the preliminary estimate of GDP is available on the Methods and sources page of the ONS website).

In the Second Estimate of GDP and the Quarterly National Accounts the output GVA and GDP estimates are balanced with the equivalent income and expenditure approaches to produce headline estimates of GVA and GDP. Further information on all three approaches to measuring GDP can be found in the Short Guide to National Accounts (136.8 Kb Pdf).

All data in this bulletin are seasonally adjusted estimates and have had the effect of price changes removed (in other words, the data are deflated). Further information on some of the key concepts (including seasonal adjustment and deflation) underlying the estimates can be found in background note 8.

The quality of the estimate of GDP

The preliminary estimate of GDP is produced around 25 days after the end of the quarter to provide a timely estimate of GDP and at this stage the data content of this estimate is around 44% of the total required for the final

output based estimate. The methods for producing the preliminary GDP estimate use monthly data for the first two months in the quarter (October and November) and forecasts for estimating the third month (December). More information about the data content for this release can be found in the Assumptions made for December 2014 section and the background notes. Revisions are an inevitable consequence of the trade-off between timeliness and accuracy. The estimate is subject to revisions as more data become available, but between the preliminary and third estimates of GDP, revisions are typically small (around 0.1 to 0.2 percentage points), with the frequency of upward and downward revisions broadly equal.

All estimates, by definition, are subject to statistical uncertainty and for many well-established statistics ONS measures and publishes the sampling error associated with the estimate, using this as an indicator of accuracy. The estimate of GDP, however, is currently constructed from a wide variety of data sources, some of which are not based on random samples and as such it is very difficult to measure the sampling error. While development work continues in this area, like all other G7 national statistical institutes, ONS does not publish a measure of the sampling error associated with GDP (more information on the quality of the output approach to measuring GDP can be found on the Methods and sources page on the ONS website). It should be noted that ONS is continually working on methodological changes to improve the accuracy of the output approach to measuring GDP (more information can be found on the Improvements web page). As part of the GDP Continuous Improvement Programme, articles are regularly published on the ONS statistical continuous improvement page, which provide detailed updates of the work carried out so far.

3. Key information

Table 1: Gross Domestic Product Preliminary Estimate key figures, Q4 2014

United Kingdom, 2012-2014

GDP Index (2011=100)		Percentage change on previous quarter				
		GDP	Agriculture	Production	Construction	Services
		Weights 1000	6	146	64	784
2012 Q4	100.8	-0.3	-0.1	-2.0	0.3	-0.2
2013 Q1	101.4	0.6	-4.5	0.1	-0.7	0.7
Q2	102.0	0.6	1.0	0.7	2.4	0.5
Q3	102.8	0.7	0.7	0.8	3.0	0.6
Q4	103.2	0.4	0.7	0.3	0.3	0.6
2014 Q1	103.8	0.6	0.5	0.4	2.0	0.8
Q2	104.7	0.8	-0.2	0.2	1.7	1.0
Q3	105.4	0.7	0.5	0.2	1.6	0.8
Q4	106.0	0.5	1.3	-0.1	-1.8	0.8

Source: Office for National Statistics

The preliminary estimate of GDP focuses on the growth in output between two consecutive quarters (in this release Q3 2014 and Q4 2014). GDP increased by 0.5% in the fourth quarter of 2014, with two of the four main industry groupings showing an increase.

Figure 1: GDP contributions (1) to the quarter-on-quarter % change, Q4 2014

United Kingdom, 2014
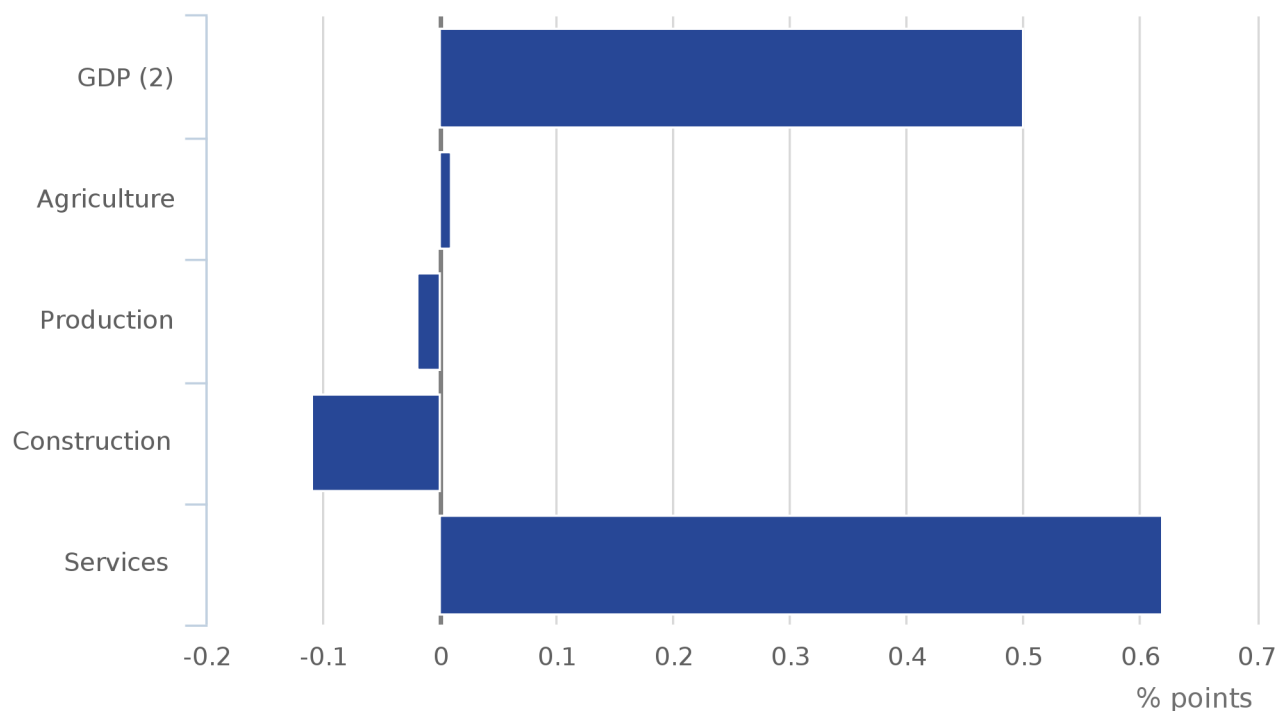
Source: Office for National Statistics

Notes:

1. Components may not sum due to rounding.

2. Percentage change.

The contribution an industry grouping makes to GDP quarterly growth is dependent on the change in that industry grouping and its weight within the output approach to measuring GDP. The current 2011 based weights are: services 78.4%; production 14.6%; construction 6.4%; and agriculture 0.6%.

The largest contribution to Q4 2014 GDP growth came from services; these industries increased by 0.8%, contributing 0.62 percentage points to the increase in GDP (as seen in Figure 1). This followed an increase of 0.8% in Q3 2014. In the latest quarter there was widespread growth, with increases in three of the four main services aggregates (distribution, hotels & restaurants; transport, storage & communication; business services & finance). Output from government & other services was flat for Q4 2014. Growth in each of the main services aggregates was lower than in Q3 2014 with the exception of distribution, hotels & restaurants which grew by 1.3%, following a rise of 0.7% for Q3 2014. Retail made the largest positive contribution to the increase. In Q4 2014 output from services was 7.9% above its pre-economic downturn peak in Q1 2008.

There was a downward contribution (0.02 percentage points) from the production industries; these industries fell by 0.1%, with energy supply decreasing by 2.8% reversing an increase of 2.8% in Q3 2014, and mining & quarrying decreasing by 0.6% following a decrease of 1.6% in Q3 2014. The decrease in energy was mainly caused by a decrease in the manufacture of gas. Partially offsetting these decreases was a rise of 1.2% in water & waste management, following a decrease of 0.3% in Q3 2014, and a rise of 0.1% in manufacturing following an increase of 0.3% in Q3 2014.

Construction output decreased by 1.8% in Q4 2014 when compared with Q3 2014, contributing -0.11 percentage points to GDP growth and follows a rise of 1.6% in Q3 2014. Compared with the previous month, November 2014 saw a dip in construction output of 2.0%, following a fall of 1.9% in October 2014. Early responses for December 2014 indicate a rise into December.

4. Economic context

Figure 2: GDP (£ billions) and quarter-on-quarter growth (1), Q4 2014

United Kingdom, 2003-2014
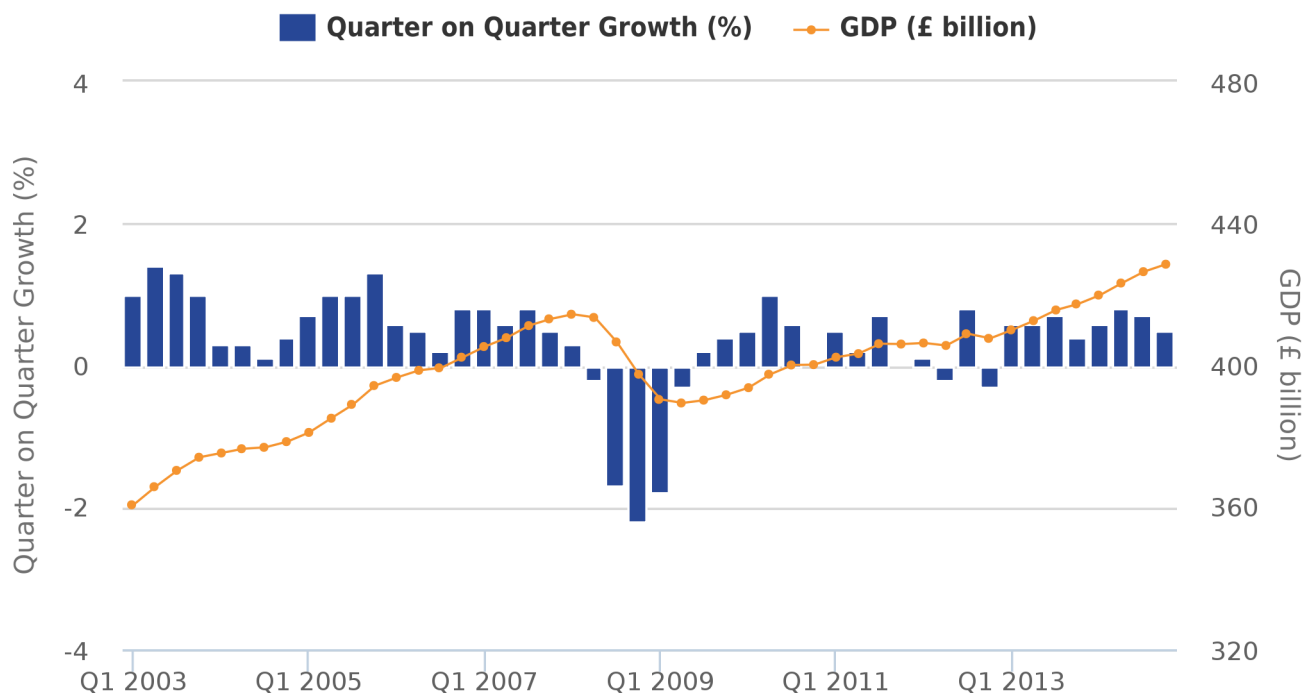
Source: Office for National Statistics

Notes:

1. Growth rates are calculated using unrounded data.

As seen in Figure 2, GDP in the UK grew steadily during the 2000s until a financial market shock affected UK and global economic growth in 2008 and 2009. Economic growth resumed towards the end of 2009, but generally at a slower rate than the period prior to 2008 (Figure 2). This growth was also erratic, with several quarters between 2010 and 2012 recording stagnant or declining GDP. This two-year period coincided with special events (e.g. severe winter weather in Q4 2010, the Diamond Jubilee in Q2 2012) that are likely to have affected growth. Since 2013, GDP has grown steadily, passing its pre-downturn peak in Q3 2013.

Figure 3 shows the annual (year-on-year) growth. The chart clearly shows the impact of the most recent economic downturn in 2008/09. Since then GDP growth has been slightly below what was observed in the period before the downturn, with the estimated 2.6% increase in annual growth in 2014 representing the strongest year-on-year growth since 2007, when it was also 2.6%.

Figure 3: GDP (£ billion) and annual growth (1)

United Kingdom, 1970 - 2014
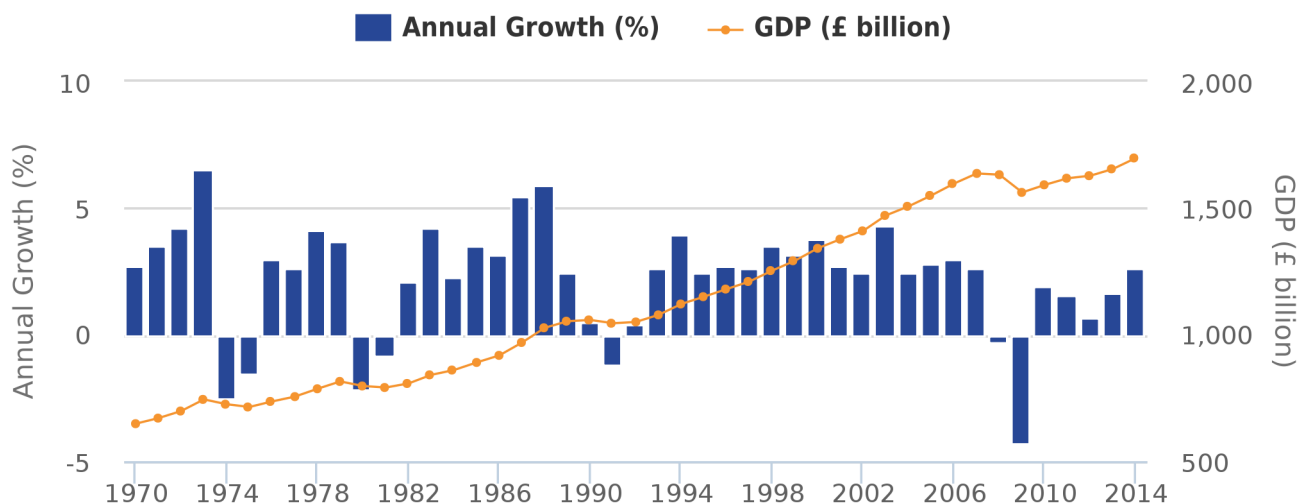
Source: Office for National Statistics

Notes:

1. Growth rates are calculated using unrounded data.

Figure 4 shows the industry breakdown of GDP from 2001. Up until the downturn, services in the UK grew steadily, while production output was broadly flat over the same period. Construction activity grew strongly from 2001 to 2003, and although there was a temporary decline in the mid-2000s, this was reversed by the end of 2007.

Figure 4: GDP and main components, Q4 2014

United Kingdom, 2001-2014
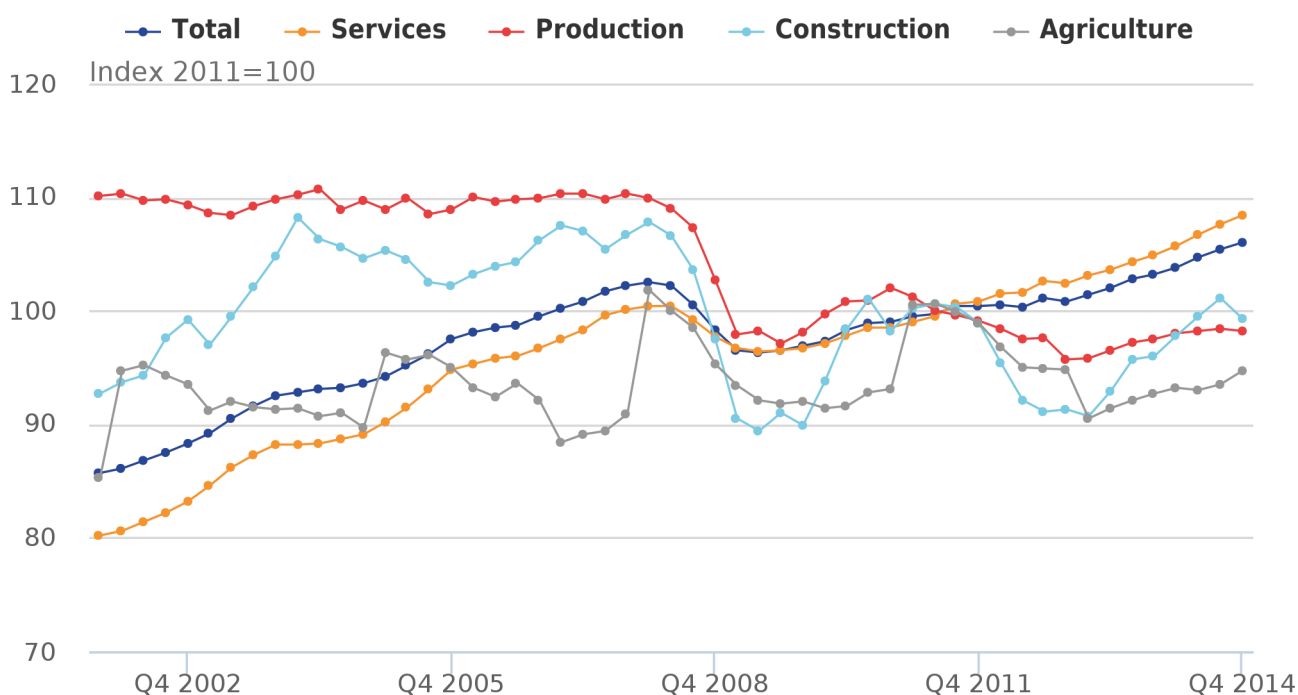
Source: Office for National Statistics

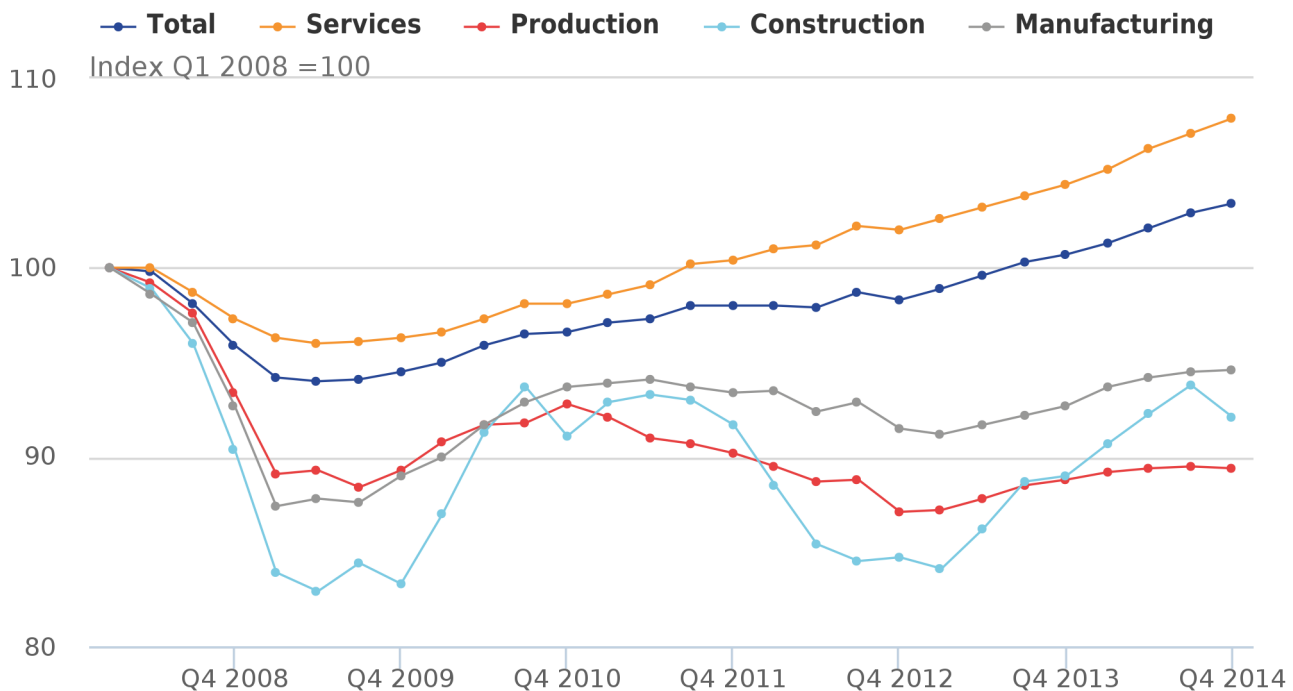GDP and all of its components are referenced to 2011, making the average index in 2011 equal to 100. It is for this reason that Figure 4 shows all components converging in 2011.

Figure 5: GDP and main components relative to Q1 2008 level

United Kingdom, 2008-2014

Source: Office for National Statistics

Industries have shown differing trends following the recent economic downturn. This is illustrated in Figure 5, which shows the path of GDP and its components (excluding agriculture, but including manufacturing which is a sub-component of production) relative to their level in Q1 2008. The construction and production industries were more acutely affected by the deterioration in economic conditions. Following the downturn, the services industries generally grew steadily, albeit slowly, with output exceeding its pre-downturn peak in Q3 2011.

Production and construction activity began to grow in 2010 - with manufacturing showing particular strength – but neither industry sustained this growth. Production output fell in both 2011 and 2012, falling below levels seen at the height of the downturn in 2009. As long-term economic uncertainty acted as a deterrent on investment, construction output sharply decreased in 2012, and was close to its 2009 trough after further contraction in Q1 2013. However, clear improvement in construction has been seen in 2014 with output in 2014 6.0% higher than 2013. Although there has been widespread growth across all major components of GDP since the start of 2013, the service industries remain the largest and steadiest contributor to economic growth (Table 1), and the only component of GDP where output has exceeded its pre-downturn peak.

Figure 6: Quarterly growth in GDP across the G7 nations
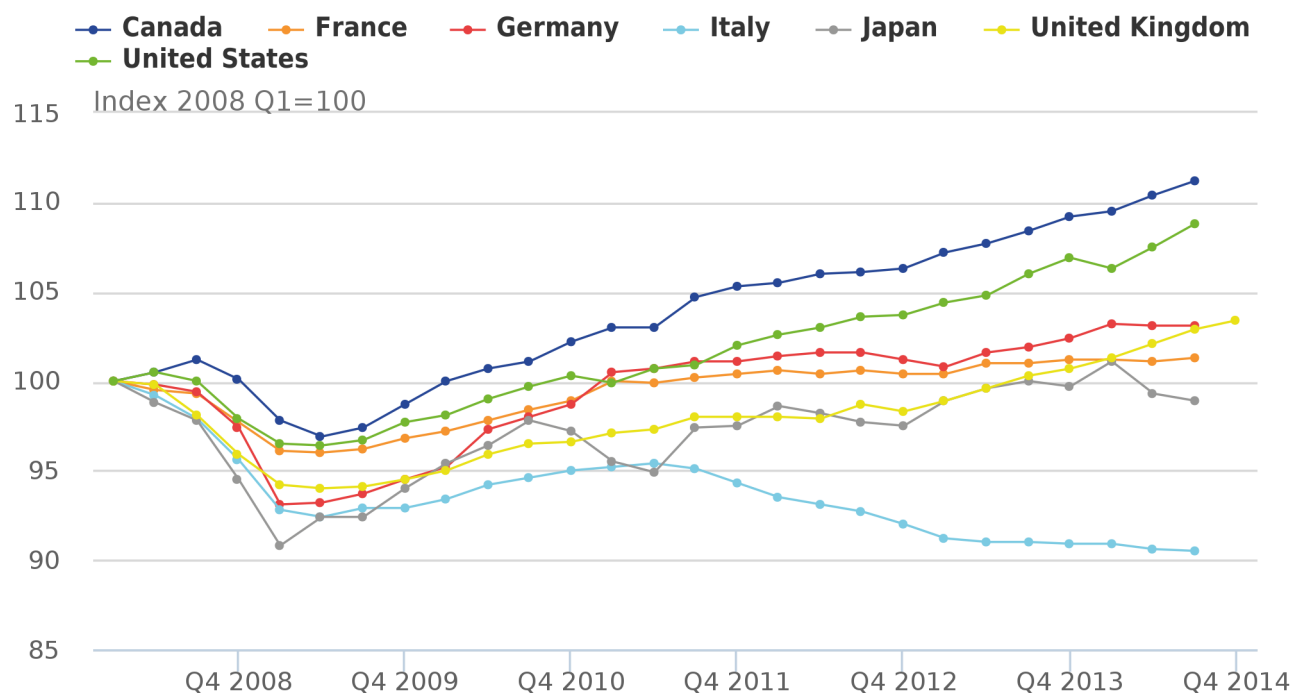
Source: Office for National Statistics

Notes:

1. At the time of publication, data for Q4 2014 was only available for the United Kingdom.

Table 2: Quarterly growth in GDP across the G7 nations (1)

	Growth, quarter-on-quarter %		Growth, quarter-on-year %	
	2014 Q3	2014 Q4	2014 Q3	2014 Q4
United Kingdom	0.7	0.5	2.6	2.7
Canada	0.7	..	2.6	..
France	0.3	..	0.4	..
Germany	0.1	..	1.2	..
Italy	-0.1	..	-0.5	..
Japan	-0.5	..	-1.2	..
United States of America	1.2	..	2.7	..
OECD²	0.6	..	1.8	..

Source: OECD and Office for National Statistics

Notes:

1. Where a country has not yet published an estimate of GDP for 2014 Q4, this is represented by ..

2. Organisation for Economic Co-operation and Development.

The ONS preliminary estimate of GDP is one of the earliest GDP releases to be published internationally. As a result, comprehensive cross country GDP comparisons cannot yet be made for Q4 2014.

However GDP data are widely available for most major economies up to the third quarter of 2014, and a comparison of this information is shown in Figure 6. Each country has been indexed to Q1 2008 so that a comparison of recoveries since the global downturn can be made between countries. Cross country GDP data are publicly available from the [Organisation for Economic Co-operation and Development](#) (OECD).

The level of GDP in the UK took until Q3 2013 to surpass its pre-downturn peak. Figure 6 indicates that the UK recovery took longer than some other countries in the G7. This is in part due to the nature of the downturn in the UK; GDP fell to a greater extent and as a result has taken longer to recover.

European economies have continued to struggle since the euro area sovereign debt crisis in 2011, with Italy particularly affected. In Q3 2014, GDP growth in France was positive at 0.3% after two consecutive quarters of either flat or negative growth. Meanwhile, GDP had returned to positive growth in Germany of 0.1%, while Italy continued a negative trend. Quarter-on-year growth in Italy has been negative for 12 consecutive quarters, between Q4 2011 and Q3 2014 inclusive.

GDP in Japan fell by 1.7% and 0.5% in Q2 2014 and Q3 2014 respectively. This is likely to reflect the previously announced increase in consumption tax which came into effect in April 2014, which encouraged consumers to make major purchases before the increase (Q1 2014 growth was positive at 1.4%). Consumer spending only increased by 0.4% in Q3 2014, after falling 5.2% between Q1 2014 and Q2 2014.

5. Industry analysis

Agriculture

Agriculture output increased by 1.3% in Q4 2014, following an increase of 0.5% in the previous quarter. Between Q4 2013 and Q4 2014, agriculture output increased by 2.1%.

Production

The Index of Production decreased by 0.1% in Q4 2014, following an increase of 0.2% in the previous quarter. Energy supply contributed the most to the decrease, contracting by 2.8%. Between Q4 2013 and Q4 2014, production output increased by 0.7%.

Construction

Construction output decreased by 1.8% in Q4 2014, following an increase of 1.6% in the previous quarter. Between Q4 2013 and Q4 2014, construction output increased by 3.5%.

Distribution, hotels & restaurants

The index for distribution, hotels & restaurants increased by 1.3% in Q4 2014, following an increase of 0.7% in the previous quarter. Retail made the largest positive contribution to the increase. Between Q4 2013 and Q4 2014, distribution, hotels & restaurants output increased by 4.7%.

Transport, storage & communication

The index for transport, storage & communication increased by 1.1% in Q4 2014, following an increase of 1.2% in the previous quarter. Computer programming, consultancy & related activities made the largest contribution to the increase. Between Q4 2013 and Q4 2014, transport, storage & communication output increased by 4.5%.

Business services & finance

The index for business services & finance increased by 0.9% in Q4 2014, following an increase of 1.0% in the previous quarter. Architectural & engineering activities made the largest positive contribution to the increase. Between Q4 2013 and Q4 2014, business services & finance output increased by 4.0%.

Government & other services

The index for government & other services showed no growth for Q4 2014, following an increase of 0.2% in the previous quarter. The largest positive contribution came from human health activities, while the largest negative contribution came from libraries, archives, museums & other cultural activities. Between Q4 2013 and Q4 2014, government & other services output increased by 1.0%.

6. Growth and contributions to growth – output components

Table 3: Growth, quarter-on-quarter, for the output components of GDP

United Kingdom, 2013-2014

%

	2013 Q4	2014 Q1	2014 Q2	2014 Q3	2014 Q4
Agriculture, forestry & fishing	0.7	0.5	-0.2	0.5	1.3
Total Production	0.3	0.4	0.2	0.2	-0.1
Mining & quarrying (Extraction)	-1.3	-0.1	0.1	-1.6	-0.6
Manufacturing	0.6	1.1	0.5	0.3	0.1
Electricity, gas, steam & air (Utilities)	1.7	-4.1	0.9	2.8	-2.8
Water supply, sewerage etc.	0.1	-0.4	-2.6	-0.3	1.2
Construction	0.3	2.0	1.7	1.6	-1.8
Total Services	0.6	0.8	1.0	0.8	0.8
Distribution, hotels & restaurants	0.5	1.6	1.0	0.7	1.3
Transport, storage & communication	0.1	0.6	1.5	1.2	1.1
Business services & finance	1.0	0.8	1.3	1.0	0.9
Government & other services	0.4	0.3	0.4	0.2	0.0

Source: Office for National Statistics

Table 4: Contributions to growth (1), quarter-on-quarter, for the output components of GDP (2)

United Kingdom, 2013-2014

%

	2013 Q4	2014 Q1	2014 Q2	2014 Q3	2014 Q4
Agriculture, forestry & fishing	0.0	0.0	0.0	0.0	0.0
Total Production	0.0	0.1	0.0	0.0	0.0
Mining & quarrying (Extraction)	0.0	0.0	0.0	0.0	0.0
Manufacturing	0.1	0.1	0.1	0.0	0.0

Electricity, gas, steam & air (Utilities)	0.0	0.0	0.0	0.0	0.0
Water supply, sewerage etc.	0.0	0.0	0.0	0.0	0.0
Construction	0.0	0.1	0.1	0.1	-0.1
Total Services	0.5	0.6	0.8	0.6	0.6
Distribution, hotels & restaurants	0.1	0.2	0.1	0.1	0.2
Transport, storage & communication	0.0	0.1	0.2	0.1	0.1
Business services & finance	0.3	0.2	0.4	0.3	0.3
Government & other services	0.1	0.1	0.1	0.1	0.0

Source: Office for National Statistics

Notes:

1. Contributions are to output GVA and therefore may not sum to average GDP totals (see Key Information section).

2. Components may not sum to totals due to rounding.

Table 5: Growth, quarter-on-same-quarter a year ago, for the output components of GDP

United Kingdom, 2013-2014

					%
	2013 Q4	2014 Q1	2014 Q2	2014 Q3	2014 Q4
Agriculture, forestry & fishing	-2.2	3.0	1.7	1.5	2.1
Total Production	1.9	2.3	1.8	1.2	0.7
Mining & quarrying (Extraction)	6.1	4.3	2.0	-2.9	-2.2
Manufacturing	1.3	2.7	2.8	2.5	2.0
Electricity, gas, steam & air (Utilities)	-3.8	-10.2	-7.2	1.2	-3.3
Water supply, sewerage etc.	6.3	7.0	1.4	-3.1	-2.1
Construction	5.1	7.9	7.1	5.7	3.5
Total Services	2.4	2.5	3.0	3.2	3.3
Distribution, hotels & restaurants	4.4	4.9	4.3	3.9	4.7
Transport, storage & communication	1.4	0.3	2.2	3.5	4.5
Business services & finance	3.1	3.4	4.0	4.1	4.0
Government & other services	0.8	0.9	1.3	1.3	1.0

Source: Office for National Statistics

Table 6: Contributions to growth (1), quarter-on-same-quarter a year ago, for the output components of GDP (2)

United Kingdom, 2013-2014

					%
	2013 Q4	2014 Q1	2014 Q2	2014 Q3	2014 Q4
Agriculture, forestry & fishing	0.0	0.0	0.0	0.0	0.0
Total Production	0.3	0.3	0.2	0.2	0.1
Mining & quarrying (Extraction)	0.1	0.1	0.0	-0.1	0.0

Manufacturing	0.1	0.3	0.3	0.2	0.2
Electricity, gas, steam & air (Utilities)	0.0	-0.1	-0.1	0.0	0.0
Water supply, sewerage etc.	0.1	0.1	0.0	0.0	0.0
Construction	0.3	0.4	0.4	0.3	0.2
Total Services	1.9	2.0	2.4	2.5	2.7
Distribution, hotels & restaurants	0.6	0.7	0.6	0.6	0.7
Transport, storage & communication	0.1	0.0	0.2	0.4	0.5
Business services & finance	1.0	1.1	1.3	1.3	1.3
Government & other services	0.2	0.2	0.3	0.3	0.2

Source: Office for National Statistics

Notes:

1. Contributions are to output GVA and therefore may not sum to average GDP totals (see Key Information section).

2. Components may not sum to totals due to rounding.

Table 7: Growth, year-on-year, for the output components of GDP

United Kingdom, 2010-2014

%

	2010	2011	2012	2013	2014
Agriculture, forestry & fishing	-0.1	8.4	-4.6	-3.9	2.1
Total Production	3.1	-0.8	-2.7	-0.5	1.5
Mining & quarrying (Extraction)	-3.9	-14.1	-10.8	-2.5	0.2
Manufacturing	4.7	1.8	-1.3	-0.7	2.5
Electricity, gas, steam & air (Utilities)	4.0	-6.2	-0.8	0.3	-5.0
Water supply, sewerage etc.	-0.3	5.3	-0.9	3.4	0.7
Construction	8.5	2.2	-7.5	1.4	6.0
Total Services	1.4	2.1	2.0	1.9	3.0
Distribution, hotels & restaurants	1.6	2.0	1.5	3.5	4.4
Transport, storage & communication	3.6	1.8	1.4	1.4	2.6
Business services & finance	1.2	3.2	3.0	2.5	3.9
Government & other services	0.6	0.9	1.4	0.3	1.1

Source: Office for National Statistics

Table 8: Contributions to growth (1), year-on-year, for the output components of GDP(2)

United Kingdom, 2010-2014

%

	2010	2011	2012	2013	2014
Agriculture, forestry & fishing	0.0	0.1	0.0	0.0	0.0
Total Production	0.5	-0.1	-0.4	-0.1	0.2
Mining & quarrying (Extraction)	-0.1	-0.3	-0.2	-0.1	0.0

Manufacturing	0.5	0.2	-0.1	-0.1	0.2
Electricity, gas, steam & air (Utilities)	0.1	-0.1	0.0	0.0	-0.1
Water supply, sewerage etc.	0.0	0.1	0.0	0.0	0.0
Construction	0.5	0.1	-0.5	0.1	0.3
Total Services	1.1	1.6	1.6	1.5	2.4
Distribution, hotels & restaurants	0.2	0.3	0.2	0.5	0.6
Transport, storage & communication	0.4	0.2	0.1	0.1	0.3
Business services & finance	0.4	1.0	0.9	0.8	1.2
Government & other services	0.1	0.2	0.3	0.1	0.3

Source: Office for National Statistics

Notes:

1. Contributions are to output GVA and therefore may not sum to average GDP totals (see Key Information section).

2. Components may not sum to totals due to rounding.

7. Assumptions made for December 2014 in the Q4 2014 Gross domestic product preliminary estimate

Background

The methods for producing the preliminary GDP estimate use monthly data for the first two months in the quarter and forecasts for estimating the third month. The forecasts are reinforced by early responses to the ONS Monthly Business Survey (MBS) but the monthly response rate is generally lower at this stage (typically between 30 and 50% at this point in time).

Each of the first two months includes monthly data from the MBS of 44,000 businesses, covering the production, manufacturing, services, retail and construction industries.

The forecasts for December use the standard ONS method of fitting an autoregressive integrated moving average (ARIMA) model with adjustments made for Easter, trading days and outliers. The forecasts are calculated for each individual industry level series (for example, food & beverage services). More information on creating the Preliminary Estimate of GDP is available on the Methods and Sources page.

Purpose of this section

This section provides details of the assumptions made for December 2014 for each of the main components of the output approach to measuring GDP: services, production and construction.

Table 9: Monthly Index of Services (CVM, seasonally adjusted) month-on-month growth rates

United Kingdom, 2008-2014

							%
	2008	2009	2010	2011	2012	2013	2014
January	-0.1	-0.7	-0.8	0.3	0.4	0.5	0.2
February	0.5	-0.1	1.1	0.7	-0.6	0.7	0.3

March	-0.6	-0.6	0.4	0.5	0.7	-0.1	0.5
April	0.8	0.7	-0.2	-0.7	-0.3	0.3	0.2
May	-0.8	-0.8	0.2	1.1	0.9	0.1	0.4
June	-0.2	-0.1	0.5	-0.2	-1.5	0.0	0.4
July	-0.5	0.7	0.3	0.8	1.3	0.3	0.3
August	-0.3	-0.4	-0.1	-0.1	0.8	0.3	0.0
September	-0.7	0.2	0.3	0.4	-0.3	0.2	0.5
October	-0.4	0.1	-0.1	-0.7	0.0	0.1	0.3
November	-0.8	0.0	0.2	1.0	-0.2	0.3	0.1
December	0.2	0.4	-0.6	0.0	-0.3	0.1	0.4*

Source: Office for National Statistics

Notes:

1. *based on forecasts and early responses to the December Monthly Business Survey.

It was estimated that there was a 0.4% rise in the output of the services industries between November and December 2014.

At the more detailed level, it was estimated that distribution, hotels & restaurants rose by 0.4%, transport, storage & communication rose by 0.4%, business services & finance rose by 0.5%, and government & other services rose by 0.1%.

The services data for October and November 2014 used in the calculation of the Q4 2014 gross domestic product preliminary estimate are consistent with the data contained in the November 2014 Index of Services release, published on 27 January 2015.

Table 10: Monthly Index of Production (CVM, seasonally adjusted) month-on-month growth rates

United Kingdom, 2008-2014

							%
	2008	2009	2010	2011	2012	2013	2014
January	0.4	-2.5	0.3	0.4	-0.1	-0.9	-0.6
February	0.0	-0.3	1.0	-1.8	-0.4	0.2	1.3
March	-1.5	-0.9	1.7	-0.2	-0.6	0.2	-0.1
April	1.2	1.9	-0.2	-0.8	-0.1	-0.2	0.1
May	-1.0	-1.7	0.1	0.5	0.6	0.5	-0.4
June	-1.0	0.6	-0.9	0.1	-2.0	1.0	0.0
July	-1.1	-0.1	-0.2	-0.6	2.4	-0.3	0.2
August	1.2	-1.6	1.2	0.0	-0.2	-0.4	-0.2
September	-0.8	0.8	0.4	-0.1	-3.1	1.3	0.7
October	-1.8	0.7	0.1	0.0	-0.6	-0.4	-0.3
November	-3.0	0.7	0.3	-0.6	0.7	-0.3	-0.1
December	-1.0	-0.3	0.0	0.1	0.9	0.4	-0.4*

Source: Office for National Statistics

Notes:

1 *based on forecasts and early responses to the December Monthly Business Survey.

It was estimated that there was a decrease of 0.4% in output of the production industries between November and December 2014.

At the more detailed level, it was estimated that there were decreases of 0.1% in manufacturing and 2.7% in mining & quarrying. It was estimated that energy supply increased by 0.6% and water & waste management increased by 0.2%.

Small revisions (following revised seasonal factors allowing for the addition of December data) to the October and November 2014 estimates, published in the latest Index of Production (IoP) release on 9 January 2015, have been used in the calculation of the Q4 2014 gross domestic product preliminary estimate. To retain coherence between the published monthly and quarterly indices for Q4 2014, small adjustments have been made to the monthly growth rates for December 2014 for total production, mining & quarrying, energy supply and water & waste management. This ensures that if the monthly growth rates for December are applied to the published November 2014 indices for total production and the main components (and then an average taken of the October, November and December 2014 indices), the results are consistent with the published quarterly indices.

Table 11: Output in the construction industry (CVM, seasonally adjusted) month-on-month growth rates

United Kingdom, 2010-2014

					%
	2010	2011	2012	2013	2014
January	..	0.5	-6.4	0.1	3.8
February	7.1	2.5	0.6	2.2	-2.2
March	3.6	4.7	1.1	-0.8	2.2
April	-0.6	-4.3	-5.0	1.8	1.2
May	-0.5	0.1	4.0	1.1	-0.9
June	3.5	2.5	-5.9	-0.9	1.1
July	-0.8	-2.0	2.9	2.7	2.5
August	2.2	-0.1	-0.2	1.5	-3.0
September	-0.3	0.4	-3.0	-1.5	2.2
October	-3.3	-4.4	3.9	3.6	-1.9
November	1.4	3.2	-0.1	-4.3	-2.0
December	-3.1	1.9	-4.3	0.7	2.8*

Source: Office for National Statistics

Notes:

1. No data represented by ..

2. *based on forecasts and early responses to the December Monthly Business Survey.

Monthly data for the construction industries are only available from January 2010.

The forecast for construction is calculated slightly differently to production and services due to the shorter time span of monthly turnover data. More weight is placed on early responses to the MBS for December. Responses

from businesses were the starting point to inform the forecasts; this was then adjusted (using information collected in previous months) in recognition that these early responses from businesses tend to be lower than later responses. This approach led to an estimated 1.8% fall between October and December 2014.

Small revisions (following revised seasonal factors allowing for the addition of December data) to the October and November 2014 estimates, published in the latest Output in the Construction Industry - November 2014 release on 9 January 2015, have been used in the calculation of the Q4 2014 gross domestic product preliminary estimate. To retain coherence between the published monthly and quarterly indices for Q4 2014, small adjustments have been made to the monthly growth rates for December 2014 for construction output. This ensures that if the monthly growth rates for December are applied to the published November 2014 indices for construction output (and then an average taken of the October, November and December 2014 indices), the results are consistent with the published quarterly indices.

8. Background notes

1. **What's new?**

   ONS has implemented an updated version of the seasonal adjustment software called X-13-ARIMA-SEATS. The new version is in line with international best practice and is a change from the previously used version X-12-ARIMA. In practice, this will result in improved quality of outputs for seasonally adjusted estimates.

   ONS has been running a National Accounts Survey to gather views from users on the short-term output indicators that feed into the Preliminary Estimate of GDP. Initial results of the short-term output indicators user survey (51 Kb Excel sheet) are now available on the ONS website.

   In addition, on 7 January 2015, ONS published papers on the Impact of quarterly employment question on monthly survey response (163.7 Kb Pdf) and MBS variance of change (110 Kb Pdf).

2. **What do you think?**

   As a user of our statistics we would welcome your feedback on this publication. If you would like to get in touch please contact us via email: ios.enquiries@ons.gsi.gov.uk. Alternatively, ONS is currently gathering views from users on how short-term economic indicators are used, and we would welcome your views by completing the National Accounts Survey.

3. **Continuous Improvement of GDP: sources, methods and communication**

   The GDP Output Improvement Report, published on 30 September 2014, provides a detailed update of the implementation of improvements for Blue Book 2014, progress on industry reviews and wider cross-cutting improvements, a comprehensive timetable for the industry review project, an update of industry quality ratings and progress on experimental statistics. It also features sections on deflation and annual coherence adjustments to improve the understanding and transparency of the methods involved in producing IoP, IoS, and GDP(O).

   Assessment reports by the UK Statistics Authority are available on the ONS website for the output approach to measuring GDP and the short-term indicators that feed into it. Furthermore, the priorities for National Accounts production and development over a five year period (2013/2014 to 2017/2018) are highlighted in the National Accounts and Related Statistics Work Plan and an independent review of the UK's National Accounts and Balance of Payments has been produced as part of ONS's programme of National Statistics Quality Reviews (NSQRs).

4. **Special events**

   ONS maintains a list of candidate special events in the Special Events Calendar. As explained in ONS's Special Events policy, it is not possible to separate the effects of special events from other changes in the series.

5. **Understanding the data**

   Short guide to GDP

   Gross domestic product (GDP) is an integral part of the UK national accounts and provides a measure of the total economic activity in the UK. GDP is often referred to as one of the main 'summary indicators' of economic activity and references to 'growth in the economy' invariably refer to the growth in GDP during the latest quarter.

   In the UK three different, but equivalent, approaches are used in the estimation of GDP:

   - GDP from the output or production approach - GDP(O) measures the sum of the value added created through the production of goods and services within the economy (our production or output as an economy). This approach provides the first estimate of GDP and can be used to show how much different industries (for example, services) contribute within the economy.

   - GDP from the income approach - GDP(I) measures the total income generated by the production of goods and services within the economy. The figures breakdown income into, for example, income earned by companies (corporations), employees and the self employed.

   - GDP from the expenditure approach - GDP(E) measures the total expenditures on all finished goods and services produced within the economy.

   How ONS statistics explain the economy

   The Index of Services is mentioned in a video summary which highlights 14 ways ONS statistics help you understand the economy. The video summary, along with an interactive version of the video, was released on the ONS website on 27 June 2014 alongside the Quarterly National Accounts for Q1 2014.

   The Changing Shape of UK Manufacturing, an event coordinated jointly with the Department for Business, Innovation and Skills, took place on 22nd October 2014. The event featured a range of talks from users, producers and suppliers of manufacturing statistics, not just from government, but also business representatives and academics. To view the content of the day, please visit Storify.

6. **Short guide to National Accounts**

   The national accounts provide an integrated description of all economic activity within the economic territory of the UK, including activity involving both domestic units (i.e. individuals and institutions resident in the UK) and external units (those resident in other countries). In addition to being comprehensive, the accounts are fully integrated and internally consistent. More information can be found in UK national accounts: a short guide (105.5 Kb Pdf).

7. **Interpreting the data**

   Figures for the most recent quarter are provisional and subject to revision in light of (a) late responses to surveys and administrative sources, (b) forecasts being replaced by actual data and (c) revisions to seasonal adjustment factors which are re-estimated every quarter and reviewed annually.

   Data for the retail industry are broadly comparable with the Retail Sales Index, published on 23 January 2015. However, the two series operate under different revisions policies meaning there can be timing differences in the updating of the two series. Also, adjustments to the data within the IoS release are sometimes made at the time of the Blue Book to improve the coherence of the three approaches to measuring GDP. Therefore, inconsistencies between the two series are not unusual but tend to be small. There are also conceptual and coverage differences between retail sales and retail output which can lead to apparent inconsistencies.

8. **Definitions and explanations**

Definitions found within the main statistical bulletin are listed here:

Index number

An index number is a number which indicates the change in magnitude relative to the magnitude at a specified point, the latter usually taken as 100. For example, the level of GDP for Q4 2014 is given in Table 1 as 106.0. This means that GDP was 6.0% higher than the average in the reference period, which is currently 2011.

Seasonal adjustment

The index numbers in this statistical bulletin are all seasonally adjusted. This aids interpretation by removing annually recurring fluctuations, for example, due to holidays or other regular seasonal patterns. Unadjusted data are also available.

Seasonal adjustment removes regular variation from a time series. Regular variation includes effects due to month lengths, different activity near particular events such as shopping activity before Christmas, and regular holidays such as the May bank holiday.

Some features of the calendar are not regular each year, but are predictable if we have enough data - for example the number of certain days of the week in a month may have an effect, or the impact of the timing of Easter. As Easter changes between March and April we can estimate its effect on time series and allocate it between March and April depending on where Easter falls. Estimates of the effect of the day of the week and Easter are used respectively to make trading day and Easter adjustments prior to seasonal adjustment.

X-13-ARIMA-SEATS is the current seasonal adjustment software used for the short-term indicators that feed into the Preliminary Estimate of GDP.

Deflation

It is standard practice to present many economic statistics in terms of 'constant prices'. This means that changes or growth, are not affected by changes in price. The process of removing price changes is known as deflation and the resulting series is often described as volume (as opposed to value). The index numbers in this bulletin are volume measures.

Chained volume

The indices in this bulletin are 'chained volume' measures. This means that successive volume estimates are linked (or chained) together. The process of annual chain-linking was introduced in 2003. More information on chain-linking can be found in the Tuke and Reed (2001) (92.8 Kb Pdf) article, and a paper on chain-linking weights in the output approach to measuring GDP can be found on the Methods and Sources page.

Gross Value Added Industry Weights Dataset

An update to the annual weights used within the output approach of GDP has been included in our dataset. These weights have been used since the Quarterly National Accounts, published on 30 September 2014 and are consistent with the data used in the Blue Book 2014 dataset, published on 31 October 2014. All weights are given in parts per thousand.

Sample sizes and data content

This is the first estimate of GDP, based on preliminary information for the quarter. Although based on a significant number of returns from businesses, there is still a lot of information to come in, particularly for September.

The amount of data available at this stage is about 44% of the total data that will be available in one year's time. The estimates in this release are, however, based on a large amount of information returned by businesses across the whole of the economy. Information on activity (more specifically, turnover or sales) is available from about 44,000 businesses for each of the first two months of the quarter and from about 20,000 businesses for the third month. In addition, ONS collects price information on nearly 200,000 individual products each month from around 30,000 businesses. This information is used to remove the effect of price changes from the estimates.

9. **Quality**

   Some general information on the quality of the estimate of GDP can be found in the 'Understanding the Preliminary Estimate of GDP' section in the main part of this statistical bulletin. Further information is available on the Methods and Sources page of the ONS website

   In addition, a quality and methodology report (518.9 Kb Pdf) for estimates of Gross Domestic Product is provided on the National Statistics website. This report describes, in detail, the intended uses of the statistics presented in this publication, their general quality and the methods used to produce them.

10. **National Accounts revisions policy**

    In accordance with the National Accounts revision policy (43.3 Kb Pdf), there are no periods open for revision in this release. More information on revisions in the output approach to measuring GDP can be found on the Methods and Sources page.

    This release includes information available up to 19 January 2015.

11. **Revisions Triangles**

    Spreadsheets giving revisions triangles (real time databases) of estimates from 1992 to date are available to download. They can be found under the section Revisions triangles for gross value added at basic prices, chained volume measure.

    The revisions triangles for the components of GDP have been temporarily removed following the move to the new Standard Industrial Classification (SIC2007) in October 2011. The revisions triangles for total GDP are still available and the services industry analysis is separately available on a monthly basis via the Index of Services dataset.

    Revisions to data provide one indication of the reliability of key indicators. Tables 12 and 13 show summary information on the size and direction of the revisions which have been made to data covering a five year period. A statistical test has been applied to the average revision to find out if it is statistically significantly different from zero. The result of the test is that the average revision is not statistically different from zero.

Table 12: Revisions to early estimates of GVA growth

	Revisions between early estimates of GVA growth (quarterly, CVM)		
Revisions to GVA growth	GVA Growth in the latest period %	Average over the last five years	Average over the last five years without regard to sign (average absolute revision)
Between M1 and M2	0.5	0.03	0.05
Between M2 and M3	0.5	-0.02	0.06

Source: Office for National Statistics

Table 12 shows the revisions between the early estimates of gross value added (GVA). The analysis of revisions between month 1 and month 2 uses month 2 estimates published from January 2010 (Q4 2009) to October 2014 (Q3 2014). The analysis of revisions between month 2 and month 3 uses month 3 estimates published from February 2010 (Q4 2009) to November 2014 (Q3 2014).

Table 13: Revisions to GVA growth between the estimate published three months after the end of the quarter and the equivalent estimate three years later

	Revisions between early estimates of GVA growth (quarterly, CVM)		
Revisions to GVA growth	GVA Growth in the latest period %	Average over the last five years	Average over the last five years without regard to sign (average absolute revision)
GVA growth (quarterly CVM)	0.5	-0.01	0.37

Table 13 shows the revisions to GVA growth between the estimate published three months after the end of the quarter and the equivalent estimate three years later. The analysis uses month 3 estimates first published from March 2010 (Q4 2006) to December 2014 (Q3 2011).

An article titled 'Understanding the quality of early estimates of Gross Domestic Product' (122.9 Kb Pdf) , which was first published in December 2009, is available on the ONS Statistics website.

This article presents an analysis of revisions to the early estimates of GDP based on a long period database of real time GDP back to 1955. This database is regularly updated and is available on the ONS website.

ONS published an article titled 'Revisions to GDP and components' (513.5 Kb Pdf) which updates analysis undertaken previously on GDP revisions as well as launching a real time £ million database for all the components of both the expenditure and income approaches to measuring GDP.

12. **Following ONS**

You can follow ONS on Twitter and Facebook.

13. **Publication policy**

Details of the policy governing the release of new data are available from the media relations team. Also available is a Pre release Access List of those given pre-publication access to the contents of this release:

Accessing data

The data presented in the tables of this statistical bulletin are also available to download from the data section of this publication. A completed run of data is available as a time series dataset on the ONS website.

14. **Code of Practice for Official Statistics**

National Statistics are produced to high professional standards set out in the Code of Practice for Official Statistics. They undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political interference.

Code of Practice

The UK Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics.

Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs

- are well explained and readily accessible

- are produced according to sound methods

- are managed impartially and objectively in the public interest

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

15. Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gsi.gov.uk

These National Statistics are produced to high professional standards and released according to the arrangements approved by the UK Statistics Authority.

B1 Gross Domestic Product by Gross Value Added [1]
chained volume measures of industry output at basic prices

2011= 100

Analysis by categories of output [3]

| | Agriculture, forestry and fishing | Production | | | | | Constru-ction | Services | | | | | Gross domestic product at market prices [4,5] | Gross value added exc oil & gas |
		Mining & quarrying	Manu-facturing	Electricity gas, steam and air	Water supply, sewerage etc	Total IOP		Distribution, hotels and restaurants	Transport, storage and commun-cation	Business services and finance	Govern-ment and other services	Total Services		
2011 Weights	6	23	101	10	12	146	64	139	104	307	234	784	1000	981

Index numbers

		L2KL	L2KR	L2KX	L2MW	L2N2	L2KQ	L2N8	L2PZ	KI8M	KI80	KI8Q	L2NC	YBEZ	KLH7
2010		92.2	116.5	98.2	106.6	95.0	100.8	97.9	98.1	98.2	96.9	99.1	98.0	**98.4**	97.9
2011		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**100.0**	100.0
2012		95.4	89.2	98.7	99.2	99.1	97.3	92.5	101.5	101.4	103.0	101.4	102.0	**100.7**	101.0
2013		91.7	87.0	98.0	99.5	102.5	96.8	93.8	105.1	102.8	105.6	101.7	104.0	**102.3**	102.7
2014		93.6	87.2	100.5	94.5	103.1	98.2	99.4	109.8	105.5	109.7	102.9	107.1	**105.0**	105.4
2011	Q2	100.6	98.9	100.4	98.3	100.2	100.0	100.6	99.9	99.4	99.3	99.7	99.5	**99.7**	99.7
	Q3	99.9	96.7	99.9	103.1	99.0	99.6	100.3	100.4	101.0	100.9	100.1	100.6	**100.4**	100.5
	Q4	98.9	97.4	99.6	96.2	101.4	99.1	98.9	100.3	100.7	101.5	100.3	100.8	**100.4**	100.5
2012	Q1	96.8	93.5	99.7	95.4	99.4	98.4	95.4	100.7	102.2	102.1	100.8	101.5	**100.5**	100.8
	Q2	95.0	90.2	98.5	101.9	98.9	97.5	92.1	100.8	101.1	102.7	101.0	101.6	**100.3**	100.6
	Q3	94.9	90.2	99.0	98.6	98.7	97.6	91.1	102.6	101.0	103.5	102.3	102.6	**101.1**	101.4
	Q4	94.8	83.0	97.6	101.1	99.2	95.7	91.3	102.0	101.3	103.8	101.3	102.4	**100.8**	101.1
2013	Q1	90.5	84.4	97.3	103.8	98.2	95.8	90.7	103.2	103.1	104.3	101.5	103.1	**101.4**	101.8
	Q2	91.4	86.3	97.8	101.4	100.9	96.5	92.9	104.8	102.7	105.0	101.5	103.6	**102.0**	102.4
	Q3	92.1	89.2	98.3	95.6	105.3	97.2	95.7	106.0	102.6	105.9	101.8	104.3	**102.8**	103.1
	Q4	92.7	88.1	98.8	97.2	105.4	97.5	96.0	106.5	102.8	107.0	102.1	104.9	**103.2**	103.5
2014	Q1	93.2	88.0	99.9	93.2	105.1	98.0	97.8	108.2	103.4	107.8	102.4	105.7	**103.8**	104.1
	Q2	93.0	88.1	100.5	94.1	102.3	98.2	99.5	109.3	104.9	109.2	102.8	106.7	**104.7**	105.0
	Q3	93.5	86.6	100.8	96.7	102.0	98.4	101.1	110.1	106.2	110.3	103.1	107.6	**105.4**	105.9
	Q4	94.7	86.1	100.8	94.0	103.2	98.2	99.3	111.6	107.4	111.4	103.1	108.4	**106.0**	106.4

Preliminary Estimate

		L2KL	L2KR	L2KX	L2MW	L2N2	L2KQ	L2N8	L2PZ	KI8M	KI80	KI8Q	L2NC	YBEZ	KLH7
	Q4	94.7	86.1	100.8	94.0	103.2	98.2	99.3	111.6	107.4	111.4	103.1	108.4	**106.0**	106.4

Percentage changes: annual and latest quarter on previous quarter

		L3BB	L3BH	L3BN	L3DM	L3DQ	L3BG	L3DW	L3GP	KI8L	KI8N	KI8P	L3E2	IHYP	KLH8
2010		-0.1	-3.9	4.7	4.0	-0.3	3.1	8.5	1.6	3.6	1.2	0.6	1.4	**1.9**	2.3
2011		8.4	-14.1	1.8	-6.2	5.3	-0.8	2.2	2.0	1.8	3.2	0.9	2.1	**1.6**	2.2
2012		-4.6	-10.8	-1.3	-0.8	-0.9	-2.7	-7.5	1.5	1.4	3.0	1.4	2.0	**0.7**	1.0
2013		-3.9	-2.5	-0.7	0.3	3.4	-0.5	1.4	3.5	1.4	2.5	0.3	1.9	**1.7**	1.7
2014		2.1	0.2	2.5	-5.0	0.7	1.5	6.0	4.4	2.6	3.9	1.1	3.0	**2.6**	2.6
														IHYQ	
2011	Q2	0.1	-7.6	0.2	-4.0	0.7	-1.2	0.4	0.6	0.6	0.9	-0.1	0.5	0.2	0.5
	Q3	-0.7	-2.2	-0.4	4.9	-1.2	-0.4	-0.3	0.5	1.6	1.7	0.4	1.1	0.7	0.8
	Q4	-1.0	0.7	-0.4	-6.7	2.4	-0.5	-1.4	-0.1	-0.3	0.6	0.2	0.2	-	-
2012	Q1	-2.1	-4.0	0.1	-0.8	-2.0	-0.8	-3.5	0.4	1.5	0.6	0.5	0.6	0.1	0.2
	Q2	-1.9	-3.5	-1.2	6.9	-0.5	-0.9	-3.5	0.1	-1.1	0.5	0.2	0.1	-0.2	-0.2
	Q3	-0.1	-	0.5	-3.3	-0.2	0.1	-1.1	1.9	-0.1	0.8	1.3	1.0	0.8	0.8
	Q4	-0.1	-8.0	-1.4	2.5	0.5	-2.0	0.3	-0.6	0.3	0.4	-1.0	-0.2	-0.3	-0.3
2013	Q1	-4.5	1.7	-0.3	2.7	-1.0	0.1	-0.7	1.1	1.8	0.4	0.2	0.7	0.6	0.6
	Q2	1.0	2.3	0.5	-2.3	2.7	0.7	2.4	1.6	-0.4	0.7	-0.1	0.5	0.6	0.6
	Q3	0.7	3.4	0.5	-5.8	4.4	0.8	3.0	1.1	-	0.9	0.3	0.6	0.7	0.6
	Q4	0.7	-1.3	0.6	1.7	0.1	0.3	0.3	0.5	0.1	1.0	0.4	0.6	0.4	0.4
2014	Q1	0.5	-0.1	1.1	-4.1	-0.4	0.4	2.0	1.6	0.6	0.8	0.3	0.8	0.6	0.6
	Q2	-0.2	0.1	0.5	0.9	-2.6	0.2	1.7	1.0	1.5	1.3	0.4	1.0	0.8	0.8
	Q3	0.5	-1.6	0.3	2.8	-0.3	0.2	1.6	0.7	1.2	1.0	0.2	0.8	0.7	0.8
	Q4	1.3	-0.6	0.1	-2.8	1.2	-0.1	-1.8	1.3	1.1	0.9	-	0.8	0.5	0.5

Preliminary Estimate

		L3BB	L3BH	L3BN	L3DM	L3DQ	L3BG	L3DW	L3GP	KI8L	KI8N	KI8P	L3E2	IHYP	KLH8
	Q4	1.3	-0.6	0.1	-2.8	1.2	-0.1	-1.8	1.3	1.1	0.9	-	0.8	**0.5**	0.5

Percentage changes: latest quarter on corresponding quarter of previous year

		L3ZZ	L427	L42D	L44C	L44G	L426	L44M	L47F	KII2	KIH9	KIH8	L44Q	IHYR	KLH9
	Q4	2.1	-2.2	2.0	-3.3	-2.1	0.7	3.5	4.7	4.5	4.0	1.0	3.3	**2.7**	2.8

1 Estimates are not accurate to the last digit shown
2 Weights may not sum to the totals due to rounding
3 Components of output are valued at basic prices which excludes
  subsidies on products, whereas GDP is valued at market prices
4 Includes an implicit discrepancy compared with the sum of the
  previous columns, because the GDP aggregate takes account of other
  information based on income and expenditure

5 In this, the preliminary estimate of GDP, series YBEZ (GDP chained volume
  indices) appears alongside GVA industry components as output is the
  sole contributor to GDP change for the latest quarter at this stage
6 A complete run of data is available on the ONS website as a   Time series dataset