

Statistical bulletin

Gross Domestic Product, preliminary estimate: July to Sept 2016

Preliminary estimate for gross domestic product (GDP) containing constant price gross value added (GVA) data for the UK. Data are available by industrial sector.



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1 . Main points

Change in gross domestic product (GDP) is the main indicator of economic growth. GDP was estimated to have increased by 0.5% in Quarter 3 (July to Sept) 2016 compared with growth of 0.7% in Quarter 2 (Apr to June) 2016. GDP was 2.3% higher in Quarter 3 2016 compared with the same quarter a year ago.

This is the first release of GDP covering a full quarter of data following the EU referendum. The pattern of growth continues to be broadly unaffected following the EU referendum with a strong performance in the services industries offsetting falls in other industrial groups.

In Quarter 3 2016, the services industries increased by 0.8%. In contrast, output decreased in the other 3 main industrial groups with construction decreasing by 1.4%, agriculture decreasing by 0.7% and production decreasing by 0.4%, within which manufacturing decreased by 1.0%.

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, with no upward or downward bias to these revisions. All figures in this release are seasonally adjusted. In line with the National Accounts Revisions Policy, no earlier periods have been revised.

2 . Changes to publication schedule for economic statistics

As previously announced, from January 2017 we are improving the way we publish economic statistics in a number of ways.

We are publishing related data at the same time under new "theme" days. This will increase the coherence of our data releases and involve minor changes to the timing of certain publications. For more information see [Changes to publication schedule for economic statistics](#). This announcement does not impact the publication dates for the preliminary estimate of GDP.

We are also improving the format and structure of statistical bulletins, which means they will be shorter and more insightful. To complement this, analysis that provides an over-arching economic picture will also be published on each theme day.

3 . 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 main 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 our 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 3 approaches to measuring GDP can be found in the [national accounts](#).

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 main concepts (including seasonal adjustment and deflation) underlying the estimates can be found in background note 6.

The quality of the estimate of GDP

The national accounts are drawn together using data from many different sources. This ensures that the national accounts are comprehensive and provide different perspectives on the economy, for example, sales by retailers and purchases by households. One source of information is from business surveys which use information provided directly from UK businesses. These data are subject to many layers of vigorous quality assurance by highly trained personnel, from clarity and confirmation of individual unit data direct from the business contact to scrutiny of data at the macro level. By comparing and contrasting these different sources, the national accounts produce a single picture of the economy which is consistent, coherent and fully integrated.

The production and publication of each GDP release is managed by a highly skilled team with a strong emphasis on statistical, analytical and economic debate throughout the production process to publish the headline GDP estimate and components. Although a limited audience have access to GDP data ahead of publication, those involved in the process are selected to ensure each GDP estimate receives a rigorous statistical and economic challenge. A “balancing meeting” is held during each production round where presentations assess GDP and components against a swathe of external indicators and a focus on GDP headline components. This is attended by senior managers within the Office for National Statistics (ONS) who challenge the data to ensure consistency and plausibility of the GDP estimate.

The preliminary estimate of GDP is produced around 25 days after the end of the quarter based on data from the output measure only, to provide a timely estimate of GDP, 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 2 months in the quarter (July and August) and forecasts for estimating the third month (September), which incorporate early survey responses where available. More information about the data content for this release can be found in the Assumptions made for September 2016 section and the background notes.

Unlike many short-term indicators published by ONS, there is no simple way of measuring the accuracy of GDP. All estimates, by definition, are subject to statistical uncertainty and for many well-established statistics we measure and publish the sampling error and non-sampling error associated with the estimate, using this as an indicator of accuracy. Since sampling is typically done to determine the characteristics of a whole population, the difference between the sample and population values is considered a sampling error.

Non-sampling errors are a result of deviations from the true value that are not a function of the sample chosen, including various systematic errors and any other errors that are not due to sampling. The estimate of GDP, however, is currently constructed from a wide variety of data sources, some of which are not based on random samples or do not have published sampling and non-sampling errors available and as such it is very difficult to measure both error aspects and their impact on GDP. While development work continues in this area, like all other G7 national statistical institutes, we don't publish a measure of the sampling error/non-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 our website). It should be noted that we are continually working on methodological changes to improve accuracy of the [output approach to measuring GDP](#). As part of the GDP [Continuous Improvement Programme](#), articles are regularly published on the statistical continuous improvement page, which provide detailed updates of the work carried out so far.

One dimension of measuring accuracy is reliability, which is measured using evidence from analyses of revision to assess the closeness of early estimates to subsequently estimated values. Many users try to minimise the impact of uncertainty through using the historical experience of revisions as a basis for estimating how confident they are in early releases and predicting how far and in what direction the early release might be revised. 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. Many different approaches can be used to summarise revisions; the Validation and Quality Assurance section in the [Quality and Methodology Information](#) paper analyse the mean average revision and the mean absolute revision for GDP estimates over data publication iterations - in addition to this analysis, Section 14 of the [Revisions to GDP and components in Blue Books 2014 and 2015](#) article updates the metrics used to test revisions performance in order to answer the question "Is GDP biased?"

On 11 December 2014, the UK Statistics Authority announced its decision to suspend the designation of [Construction price and cost Indices \(CPCIs\)](#) due to concerns about the quality of these deflators. As a result, the UK Statistics Authority also suspended the designation of Output and New orders as National Statistics in respect of the Code of Practice for Official Statistics.

We took over responsibility for the publication and development of the CPCIs from the Department for Business Innovation and Skills on 1 April 2015. On 8 May 2015, we published an article describing the proposed [interim solution for construction price and cost indices \(CPCIs\)](#) to replace the statistical models that had been used in the production of chained volume measures (CVMs) for output in the construction industry since Quarter 3 (July to Sept) 2014 and to provide an ongoing source of data. Since the publication of the Quarterly National Accounts, Quarter 2 (Apr to June) 2015, this interim solution has been used for data periods from Quarter 1 (Jan to Mar) 2014 onwards. This [interim solution](#) is used within this release.

4 . Main information

Table 1: GDP preliminary estimate main figures, in Quarter 3 (July to Sept) 2016

UK, 2014 to 2016

| | | GDP Index (2013=100) | Percentage change on previous quarter | | | | |
|-------------------------|-------|-------------------------|---------------------------------------|-------------|------------|-----------------------|-----|
| | | | GDP | Agriculture | Production | Construction Services | |
| | | | Weights 1000 | 7 | 146 | 59 | 788 |
| Q2 2014 ¹ | 102.7 | 0.9 | 1.8 | 0.3 | 1.9 | 1.2 | |
| Q3 2014 | 103.5 | 0.8 | 2.0 | 0.2 | 2.5 | 1.0 | |
| Q4 2014 | 104.4 | 0.8 | 2.6 | 0.3 | 0.3 | 1.0 | |
| Q1 2015 | 104.6 | 0.3 | -2.9 | 0.4 | 2.6 | 0.1 | |
| Q2 2015 | 105.2 | 0.5 | 1.1 | 0.7 | 0.7 | 0.5 | |
| Q3 2015 | 105.5 | 0.3 | 0.1 | 0.0 | -0.8 | 0.5 | |
| Q4 2015 | 106.2 | 0.7 | 0.4 | -0.4 | 0.6 | 0.9 | |
| Q1 2016 | 106.6 | 0.4 | -0.1 | -0.1 | 0.8 | 0.7 | |
| Q2 2016 | 107.3 | 0.7 | -1.0 | 2.1 | -0.1 | 0.6 | |
| Q3 2016 | 107.9 | 0.5 | -0.7 | -0.4 | -1.4 | 0.8 | |

Source: Office for National Statistics

Notes:

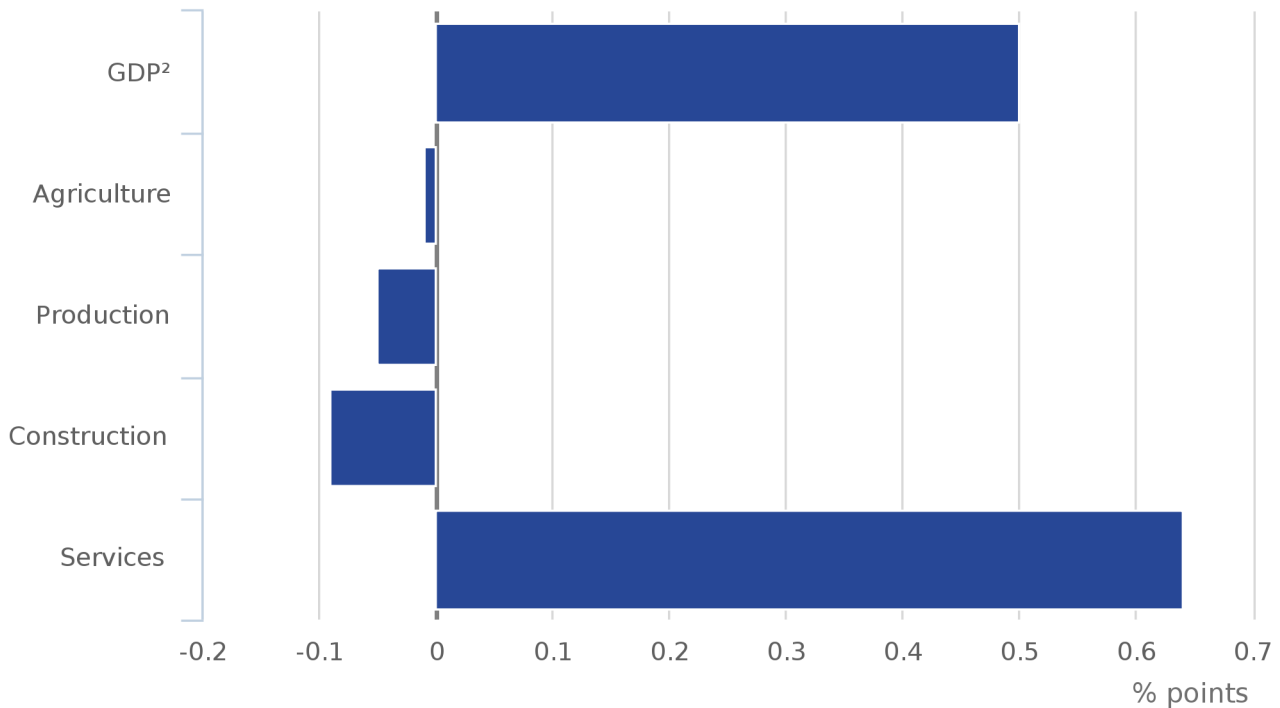
1. Q1 refers to Quarter 1 (Jan to Mar), Q2 refers to Quarter 2 (Apr to June), Q3 refers to Quarter 3 (July to Sept), Q4 refers to Quarter 4 (Oct to Dec).

The preliminary estimate of GDP focuses on the growth in output between 2 consecutive quarters (in this release Quarter 2 (Apr to June) 2016 and Quarter 3 (July to Sept) 2016). GDP increased by 0.5% in the third quarter of 2016.

In Quarter 3 2016, GDP was estimated to have been 8.2% higher than the pre-economic downturn peak of Quarter 1 (Jan to Mar) 2008. From the peak in Quarter 1 2008 to the trough in Quarter 2 2009, the economy shrank by 6.3%.

Figure 1: GDP contributions¹ to the quarter-on-quarter percentage change in Quarter 3 (July to Sept) 2016

UK



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 2013-based weights are: services 78.8%; production 14.6%; construction 5.9%; and agriculture 0.7%.

Growth in the services industries in Quarter 3 (July to Sept) 2016 increased by 0.8%, contributing 0.64 percentage points to quarterly GDP growth (as seen in Figure 1), compared with an increase of 0.6% in Quarter 2 (Apr to June) 2016.

In the latest period, all 4 of the main services aggregates (distribution, hotels and restaurants; transport, storage and communication; business services and finance; and government and other services) increased. Growth in the transport, storage and communication industries in Quarter 3 2016 increased by 2.2% compared with 0.6% in Quarter 2 2016 and was the main reason behind the increase in services growth between the 2 quarters. This is the fastest growth in transport, storage and communication industries since Quarter 4 (Oct to Dec) 2009; growth was primarily driven by the motion picture, video and TV programme production, sound recording and music publishing activities, and computer programming industries.

Growth in the production industries in Quarter 3 2016 decreased by 0.4% with a downward contribution of 0.05 percentage points to quarterly GDP growth (as seen in Figure 1), following an increase of 2.1% in Quarter 2 2016.

In the latest period, 3 of the main production aggregates decreased with: manufacturing decreasing by 1.0% following an increase of 1.6% in Quarter 2 2016; energy supply decreasing by 3.6% following an increase of 4.6% in Quarter 2 2016; and water and waste management decreasing by 0.2% following an increase of 2.1% in Quarter 2 2016. In contrast, mining and quarrying increased by 5.2% following an increase of 2.8% in Quarter 2 2016.

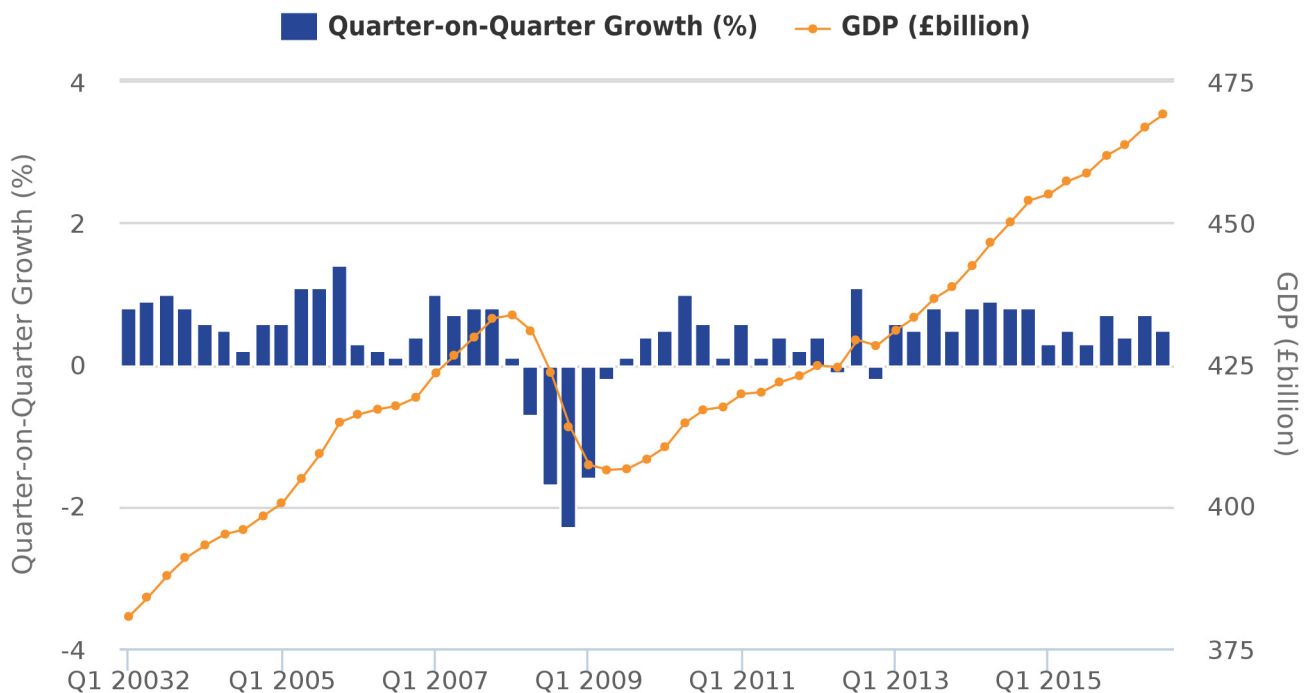
More information on the decline in manufacturing output and the recent depreciation of sterling is provided in the economic context section.

Growth in the construction industries in Quarter 3 2016 decreased by 1.4% with a downward contribution to quarterly GDP growth of 0.09 percentage points, this follows a decrease of 0.1% in Quarter 2 2016. This marks the biggest downward movement in the construction industry since Quarter 3 2012; however, this is in the context of a pattern of growth to Quarter 1 2016 when construction surpassed its pre-downturn peak, more information on this is provided in the economic context section.

5 . Economic context

Figure 2: GDP (£ billions) and quarter-on-quarter growth¹, Quarter 3 (July to Sept) 2016

UK, 2003 to 2016



Source: Office for National Statistics

Notes:

1. Growth rates are calculated using unrounded data.
2. Q1 refers to Quarter 1 (Jan to Mar), Q2 refers to Quarter 2 (Apr to June), Q3 refers to Quarter 3 (July to Sept), Q4 refers to Quarter 4 (Oct to Dec).

As seen in Figure 2, GDP in the UK grew consistently 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. This growth was also erratic, with several quarters between 2010 and 2012 recording low or declining GDP growth. This 2-year period coincided with special events (for example, severe winter weather in Quarter 4 (Oct to Dec) 2010 and the Diamond Jubilee in Quarter 2 (Apr to June) 2012) that are likely to have affected growth.

Since 2013, GDP has grown steadily, passing its pre-downturn peak in Quarter 3 (July to Sept) 2013.

The latest GDP preliminary estimate shows that the UK economy grew by 0.5% in Quarter 3 2016, slightly slower than the 0.7% estimate for Quarter 2 2016. Growth in the latest quarter is lower than the average quarter-on-quarter growth (0.6%) seen since Quarter 1 (Jan to Mar) 2013, when the economy started growing steadily, but is not a significant departure from trend GDP growth over this period.

The latest quarter marks the 15th consecutive quarter of positive growth since the beginning of 2013 with the level of GDP now 8.2% above its pre-downturn peak (Quarter 1 2008). In addition, GDP grew by 2.3% between Quarter 3 2016 and Quarter 3 2015, slightly up on the previous quarter.

Three main trends have emerged from the most recent data: the continued growth of services which drove GDP growth in Quarter 3 2016, the impact of recent currency fluctuations on the volume of manufacturing output and a subdued performance in the construction industry. These points are addressed in more detail in this section.

Continued growth of services

Over the last 3 years, the services industries have driven GDP growth, growing by 9.7% since Quarter 1 2013.

The latest quarter of data shows no sign of a slow down in growth; there was broad-based strength across the industrial groupings in Quarter 3 2016, with some exceptions at the detailed industry level, notably real estate activities.

Of particular interest was the continued growth in consumer-focused industries. For example, retail output grew 1.8%, while output in domestic accommodation and restaurants rose 1.7%. Despite only accounting for 0.6% of the whole economy, motion picture and TV programme production activity (which includes cinema ticket sales) raised GDP growth by 0.1 percentage point, growing at a very strong rate of 16.4%.

Looking in more depth at the monthly path of services reveals a picture of sustained strength across the quarter, with growth of 0.4%, 0.2% and 0.2% in July, August and September respectively.

Impact of prices on manufacturing

Since the EU referendum vote at the end of June, the value of sterling has fallen sharply, to the extent that the level of the pound (on a trade weighted basis) was 14.4% lower in September 2016 compared with the same month in the previous year.

Recent ONS data suggests this change has affected the level of export and import prices, as well as the price of imported goods. Input producer prices (which are a mix of imported and domestically produced products) increased by 7.2% in the year to September 2016, compared with a 7.8% increase in the year to August 2016, the third consecutive month of positive input price inflation. The price of exported manufactured goods on a sterling basis rose faster, by 10.2% in the year to September 2016 – this can be explained by the fact that UK firms export a significant proportion of their goods in foreign currency, but it could also be due to import price pressures feeding through to exported output prices. Further detail can be found in the [UK trade](#) and [PPI](#) bulletins.

ONS uses the price of exported goods to deflate manufacturing output; therefore the recent increases in exported goods prices will have (all else being equal) reduced the volume of manufacturing output growth relative to value growth. The impact will have been larger on products that are more likely to be exported in a foreign currency and are more export intensive, such as cars and pharmaceutical products.

Construction

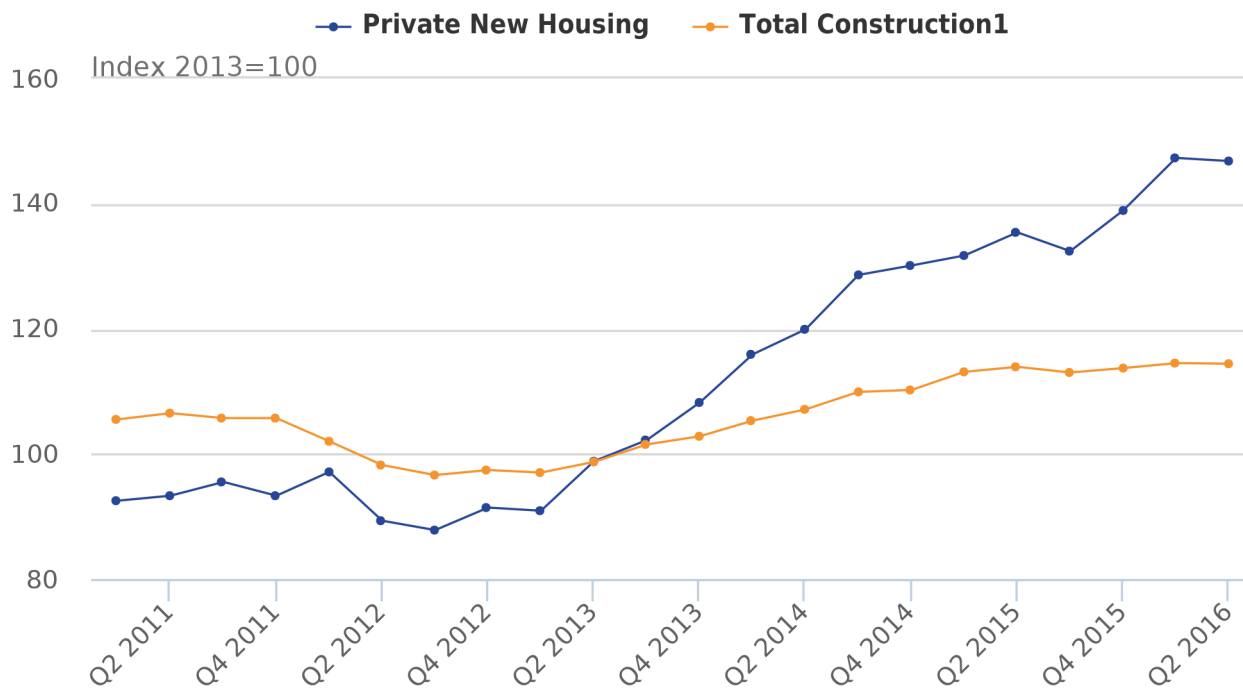
While the services industries continue to drive recent growth in GDP, the performance of the construction industries have deteriorated and have started to act as a drag on headline economic growth. Construction output fell 1.4% in Quarter 3 and subtracted 0.1 percentage point from GDP growth; this followed a 0.1% fall in output in Quarter 2.

Although output has fallen in the last 2 quarters, the industry has grown strongly in recent years and the level of activity has tipped only slightly below that seen in Quarter 3 2015. Between Quarter 1 2013 and Quarter 1 2016, the construction industries grew at a rate of 1.4% per quarter, significantly higher than overall GDP growth over the same period.

The strong growth over the years 2013 to 2016 was mainly driven by a surge in private house building construction – as shown in Figure 3 – which coincided with higher levels of house price inflation. Between Quarter 1 2013 and Quarter 1 2016, private house building rose 4.1% per quarter. However, in the most recent quarter for which data are available (Quarter 2 2016) the construction of new housing fell, for the first time since Quarter 3 2015. Before then, private house building construction hadn't fallen since Quarter 1 2013.

Figure 3: Output in the construction industry, total output and private new housing, 2013=100

UK, 2011 to 2016



Source: Office for National Statistics

Notes:

1. The GDP estimate aligns to Output in the construction industry growth rates to 1 decimal place, this can lead to minor differences in the index numbers between the 2 publications.
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), Q4 refers to Quarter 4 (Oct to Dec).

6 . Industry analysis

Agriculture

Agriculture output decreased by 0.7% in Quarter 3 (July to Sept) 2016, following a decrease of 1.0% in the previous quarter. Between Quarter 3 2015 and Quarter 3 2016, agriculture output decreased by 1.4%.

Production

The index of production decreased by 0.4% in Quarter 3 2016, following an increase of 2.1% in the previous quarter. Manufacturing contributed the most to the decrease, falling by 1.0%. Between Quarter 3 2015 and Quarter 3 2016, production output increased by 1.2%.

Construction

Construction output decreased by 1.4% in Quarter 3 2016, following a decrease of 0.1% in the previous quarter. Between Quarter 3 2015 and Quarter 3 2016, construction output decreased by 0.2%.

Distribution, hotels and restaurants

The index for distribution, hotels and restaurants increased by 1.1% in Quarter 3 2016, following an increase of 1.1% in the previous quarter. Retail trade except of motor vehicles and motorcycles made the largest positive contribution to the increase. Between Quarter 3 2015 and Quarter 3 2016, distribution, hotels and restaurants output increased by 5.1%.

Transport, storage and communication

The index for transport, storage and communication increased by 2.2% in Quarter 3 2016, following an increase of 0.6% in the previous quarter. Motion picture, video and TV programme production, sound recording and music publishing activities made the largest positive contribution to the increase. Between Quarter 3 2015 and Quarter 3 2016, transport, storage and communication output increased by 4.0%.

Business services and finance

The index for business services and finance increased by 0.5% in Quarter 3 2016, following an increase of 0.6% in the previous quarter. Activities of head offices, management consultancy activities made the largest positive contribution to the increase. Between Quarter 3 2015 and Quarter 3 2016, business services and finance output increased by 2.6%.

Government and other services

The index for government and other services increased by 0.3% in Quarter 3 2016, following an increase of 0.1% in the previous quarter. Human health activities made the largest positive contribution to the increase. Between Quarter 3 2015 and Quarter 3 2016, government and other services output increased by 1.7%.

7 . Assumptions made for September 2016 in the Quarter 3 (July to Sept) 2016 GDP preliminary estimate

Background

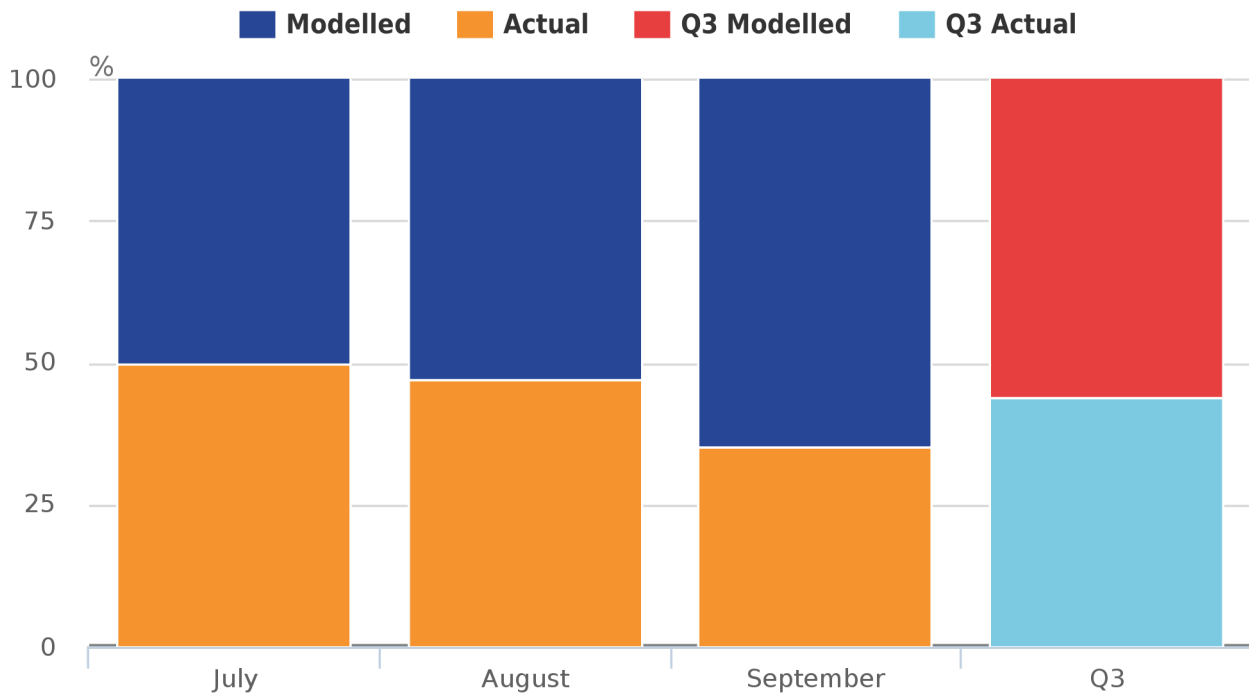
The methods for producing the preliminary GDP estimate use monthly data for the first 2 months in the quarter and forecasts for estimating the third month. The forecasts are reinforced by early responses to our Monthly Business Survey (MBS), but the monthly response rate is generally lower at this stage (typically between 30% and 50% at this point in time).

Each of the first 2 months includes monthly data from MBS with the 44,000 businesses sampled, covering the production, manufacturing, services, and retail and construction industries.

The forecasts for September use our standard 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 and beverage services). More information on creating the preliminary estimate of GDP is available on the [methods and sources](#) page.

Figure 4: Data content within this GDP estimate

UK, July 2016 to Sept 2016



Source: Office for National Statistics

Notes:

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), Q4 refers to Quarter 4 (Oct to Dec).

Purpose of this section

This section provides details of the assumptions made for September 2016 for each of the main components of the output approach to measuring GDP: services, production and construction.

Table 2: Monthly growth rates in production, construction and services, Quarter 3 (July to Sept) 2016

UK

| Period | Previously Published | | Current | | |
|---------------------|----------------------|------------|----------|------------|----------------------------|
| | July (%) | August (%) | July (%) | August (%) | September (%) ¹ |
| Index of Production | 0.1 | -0.4 | 0.0 | -0.2 | -0.1 |
| Construction Output | 0.5 | -1.5 | 0.5 | -0.8 | -0.4 |
| Index of Services | 0.4 | .. | 0.4 | 0.2 | 0.2 |

Source: Office for National Statistics

Notes:

1. Based on forecasts and early responses to the September Monthly Business Survey
2. No data represented by ..

Services

It was estimated that there was a 0.2% rise in the output of the services industries between August and September 2016.

At the more detailed level, it was estimated that 3 of the 4 main aggregates increased. Business services and finance increased by 0.2%, distribution, hotels and restaurants increased by 0.6% and government and other services increased by 0.2%. In contrast, transport, storage and communication decreased by 0.2%.

The services data for July and August 2016 used in the calculation of the Quarter 3 (July to Sept) 2016 GDP preliminary estimate are consistent with the data contained in the [August 2016 Index of Services](#) release published on 27 October 2016.

Production

It was estimated that there was a 0.1% decrease in the output of the production industries between August and September 2016. At the more detailed level, it was estimated that mining and quarrying decreased by 2.0% and water and waste management decreased by 1.0%. In contrast, energy supply increased by 0.4% and manufacturing increased by 0.4%.

Revisions to the July and August 2016 estimates, published in the latest [Index of Production \(IoP\)](#) release on 7 October 2016, have been used in the calculation of the Quarter 3 2016 GDP preliminary estimate. The previously published estimate for July has been revised down 0.1 percentage points from 0.1% to flat (0.0%), this was driven by the water and waste management sector. The previously published estimate for August has been revised up 0.2 percentage points from negative 0.4% to negative 0.2%, this was driven by the mining and quarrying sector.

Construction

As 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 Monthly Business Survey for September 2016. 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 fall of 1.4% in the output of the construction industries between Quarter 2 (Apr to June) 2016 and Quarter 3 (July to Sept) 2016.

Some revisions (due to receipt of additional survey data and revised seasonal factors allowing for the addition of September 2016 data) to the July and August 2016 estimates, published in the latest [Output in the Construction Industry – August 2016](#) release, on 14 October 2016, have been used in the calculation of the Quarter 3 2016 GDP preliminary estimate. On this occasion, there is no revision to the previously published July estimate for construction. The previously published estimate for August has been revised up 0.7 percentage points from negative 1.5% to negative 0.8%.

8 . Quality and methodology

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 our website.

“The [GDP Quality and Methodology Information document](#) contains important information on:

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

The national accounts provide an integrated description of all economic activity within the economic territory of the UK, including activity involving both domestic units (that is, 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 the [UK National Accounts: A Short Guide](#).

9. Background notes

1. What's new?

VAT project

The [VAT update October 2016](#) was published on 4 October 2016 and shared early VAT turnover analysis and data. The research article represents the first significant publication of new VAT turnover statistics as part of our commitment to develop a diverse range of administrative data sources for use in the national accounts.

The next article will be published in January 2017 and we would welcome feedback on how we could potentially improve our methods and data. Please contact us with your views: vatdev@ons.gsi.gov.uk.

Blue Book 2017 scope

An article was published on 21 September 2016 describing the [planned scope and content of the “UK National Accounts, The Blue Book: 2017 edition”, and the “UK Balance of Payments, The Pink Book: 2017 edition”](#), due to be published on 31 October 2017.

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: gdp@ons.gsi.gov.uk

3. Continuous improvement of GDP: sources, methods and communication

The [GDP Output Improvement Report](#), published on 1 July 2016, reports on improvements to the output measure of GDP for Blue Book 2016, outlining developments since September 2015, including progress on completed and current industry reviews and wider improvements including the VAT project.

Assessment reports by the UK Statistics Authority are available 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 5 year period (financial year ending 2014 to financial year ending 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 our programme of [National Statistics Quality Reviews \(NSQRs\)](#).

4. 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 3 different, but equivalent, approaches are used in the estimation of GDP:

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

5. Interpreting the data

Figures for the most recent quarter are provisional and subject to revision in light of:

- late responses to surveys and administrative sources
- forecasts being replaced by actual data
- 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 20 October 2016. However, the 2 series operate under different revisions policies meaning there can be timing differences in the updating of the 2 series. Also, adjustments to the data within the Index of Services release are sometimes made at the time of the Blue Book release to improve the coherence of the 3 approaches to measuring GDP. Therefore, inconsistencies between the 2 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.

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 1 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 2 months of the quarter and from about 20,000 businesses for the third month. In addition, we collect 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.

Response rates

Approximately 43% of the data used in the preliminary estimate of GDP are based on data collected via ONS's [Monthly Business Survey](#) (MBS) for production and services. In addition, approximately 6% of the data are collected via ONS's Retail Sales Inquiry (RSI) and approximately 6% are collected via ONS's Monthly Business Survey for Construction. The remainder is based on data received from other ONS sources and external data sources. At this stage the estimate of GDP includes actual data for July, August and September for the RSI element, but only July and August for the production, services and construction elements. Forecasts are generated to estimate September growth rates which are then compared with early responses to the MBS surveys to assess their credibility. Response rates (for the percentage of sampled turnover returned and also the percentage of questionnaire forms returned) for the most recent month and the 3 months prior are available in the background notes of the [Index of Services](#), [Index of Production](#) and [Retail Sales](#) statistical bulletins. The response rates for the historical periods are updated to reflect the current level of response, incorporating data from late returns. In addition, response rates for the most recent month are available in the latest [Output in the Construction Industry release](#).

6. Definitions and explanations

Definitions found within the main statistical bulletin are listed.

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.

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 \(2001\)](#) article, and an article 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 June 2016 and are consistent with the data published in the Blue Book 2016 dataset on 29 July 2016. All weights are given in parts per thousand.

7 . National Accounts Revisions Policy

In accordance with the [National Accounts Revisions Policy](#), 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 October 2016.

8. 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 main indicators. Tables 3 and 4 show summary information on the size and direction of the revisions which have been made to data covering a 5-year period. A statistical test has been applied to the average revision to find out if it is statistically significantly different from zero. An average revision close to zero is desirable as it suggests that revisions are not predictable in any one direction. The result of the test is that the average revision is not statistically different from zero.

Table 3: Revisions to early estimates of gross value added (GVA) growth

UK

| | | Revisions between early estimates of GVA growth (quarterly, CVM) | |
|-----------------------------|-----------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Revisions to GVA growth | GVA Growth in the latest period % | Average over the last 5 years | Average over the last 5 years without regard to sign (average absolute revision) |
| Between Month 1 and Month 2 | 0.5 | 0.02 | 0.04 |
| Between Month 2 and Month 3 | 0.5 | 0.01 | 0.07 |

Source: Office for National Statistics

Table 3 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 November 2011 (Quarter 3 (July to Sept) 2011) to August 2016 (Quarter 2 (Apr to June) 2016). The analysis of revisions between month 2 and month 3 uses month 3 estimates published from December 2011 (Quarter 3 (July to Sept) 2011) to September 2016 (Quarter 2 (Apr to June) 2016).

Table 4: Revisions to gross value added (GVA) growth between the estimates published 3 months after the end of the quarter and the equivalent estimate 3 years later

UK

| | | Revisions between early estimates of GVA growth (quarterly, CVM) | |
|----------------------------|-----------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Revisions to GVA growth | GVA Growth in the latest period % | Average over the last 5 years | Average over the last 5 years without regard to sign (average absolute revision) |
| GVA growth (quarterly CVM) | 0.5 | 0.09 | 0.35 |

Source: Office for National Statistics

Table 4 shows the revisions to GVA growth between the estimates published 3 months after the end of the quarter and the equivalent estimate 3 years later. The analysis uses month 3 estimates first published from December 2008 (Quarter 3 (July to Sept) 2008) to September 2016 (Quarter 2 (Apr to June) 2016).

[Understanding the quality of early estimates of Gross Domestic Product](#), which was first published in December 2009, is available on our 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 our website.

We published [Revisions to GDP and components](#) on 28 January 2014 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.

The [Revisions to GDP and components in Blue Books 2014 and 2015](#) article updates the metrics used to test revisions performance in order to answer the question 'Is GDP biased?'

9. 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 our website.

10. 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.

| Analysis by categories of output ³ | | | | | | | | | | | | | | |
|------------------------------------------------------------------------------|-----------------------------------|----------------------|-----------------|--------------------------------|----------------------------|-----------|----------------|----------------------------------------|----------------------------------------|-------------------------------|---------------------------------|----------------|--------------------------------------------------------|---------------------------------|
| | Production | | | | | | | Services | | | | | Gross domestic product at market prices ^{4,5} | Gross value added exc oil & gas |
| | Agriculture, forestry and fishing | Mining and quarrying | Manu- facturing | Electricity gas, steam and air | Water supply, sewerage etc | Total IOP | Constru- ction | Distribu- tion, hotels and restaurants | Transport, storage and commun- ication | Business services and finance | Govern- ment and other services | Total Services | | |
| 2013 Weights ² | 7 | 18 | 103 | 15 | 11 | 146 | 59 | 136 | 106 | 317 | 229 | 788 | 1000 | 986 |
| Index numbers | | | | | | | | | | | | | | |
| | L2KL | L2KR | L2KX | L2MW | L2N2 | L2KQ | L2N8 | L2PZ | KI8M | KI8O | KI8Q | L2NC | YBEZ | KLH7 |
| 2011 | 107.1 | 115.3 | 102.5 | 101.0 | 96.0 | 103.5 | 105.9 | 95.1 | 96.2 | 94.9 | 97.9 | 96.0 | 96.9 | 97.2 |
| 2012 | 99.3 | 102.8 | 101.0 | 100.2 | 95.9 | 100.7 | 98.6 | 96.6 | 98.3 | 97.9 | 99.7 | 98.3 | 98.1 | 98.5 |
| 2013 | 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 |
| 2014 | 113.9 | 100.6 | 102.9 | 94.0 | 100.7 | 101.5 | 108.0 | 104.8 | 103.0 | 103.9 | 101.7 | 103.3 | 103.1 | 103.5 |
| 2015 | 115.5 | 109.1 | 102.8 | 94.4 | 104.1 | 102.8 | 113.3 | 109.6 | 106.8 | 106.6 | 102.3 | 105.9 | 105.4 | 105.9 |
| 2013 | Q1 | 98.2 | 97.8 | 99.2 | 103.7 | 96.2 | 99.2 | 97.0 | 98.4 | 100.7 | 99.2 | 100.3 | 99.6 | 99.4 |
| | Q2 | 98.8 | 99.3 | 99.9 | 102.1 | 98.1 | 99.9 | 98.7 | 99.7 | 100.0 | 99.5 | 99.8 | 99.7 | 99.6 |
| | Q3 | 100.8 | 101.8 | 100.2 | 96.3 | 102.6 | 100.3 | 101.5 | 100.8 | 99.5 | 100.3 | 99.8 | 100.1 | 100.4 |
| | Q4 | 102.2 | 101.1 | 100.6 | 97.8 | 103.1 | 100.6 | 102.8 | 101.1 | 99.7 | 101.0 | 100.6 | 100.9 | 100.7 |
| 2014 | Q1 | 110.6 | 100.9 | 102.2 | 92.5 | 103.0 | 101.1 | 105.1 | 102.6 | 100.5 | 101.9 | 101.0 | 101.6 | 101.8 |
| | Q2 | 112.6 | 101.3 | 102.8 | 93.1 | 99.9 | 101.4 | 107.1 | 104.2 | 102.3 | 103.2 | 101.7 | 102.8 | 102.7 |
| | Q3 | 114.8 | 99.4 | 103.1 | 96.1 | 99.2 | 101.7 | 109.8 | 105.4 | 103.9 | 104.5 | 102.1 | 103.9 | 103.5 |
| | Q4 | 117.8 | 100.8 | 103.4 | 94.1 | 100.5 | 101.9 | 110.1 | 107.0 | 105.2 | 106.0 | 102.1 | 104.9 | 105.0 |
| 2015 | Q1 | 114.4 | 102.6 | 103.4 | 96.0 | 100.9 | 102.3 | 113.0 | 108.0 | 105.6 | 106.0 | 101.6 | 105.0 | 104.6 |
| | Q2 | 115.6 | 110.8 | 102.9 | 93.7 | 104.9 | 103.1 | 113.8 | 109.0 | 106.3 | 106.2 | 102.1 | 105.5 | 105.2 |
| | Q3 | 115.7 | 112.8 | 102.5 | 94.9 | 104.8 | 103.1 | 112.9 | 110.0 | 107.1 | 106.7 | 102.3 | 106.0 | 105.5 |
| | Q4 | 116.1 | 110.2 | 102.6 | 92.8 | 105.6 | 102.7 | 113.5 | 111.6 | 108.4 | 107.5 | 103.1 | 107.0 | 106.2 |
| 2016 | Q1 | 116.0 | 108.9 | 102.2 | 93.5 | 108.2 | 102.6 | 114.4 | 113.2 | 108.4 | 108.2 | 103.6 | 107.7 | 106.6 |
| | Q2 | 114.8 | 111.9 | 103.9 | 97.8 | 110.5 | 104.7 | 114.3 | 114.4 | 109.0 | 108.9 | 103.7 | 108.4 | 107.3 |
| | Q3 | 114.1 | 117.8 | 102.9 | 94.2 | 110.3 | 104.3 | 112.6 | 115.6 | 111.4 | 109.5 | 104.0 | 109.2 | 107.9 |
| Preliminary Estimate | | | | | | | | | | | | | | |
| | Q3 | 114.1 | 117.8 | 102.9 | 94.2 | 110.3 | 104.3 | 112.6 | 115.6 | 111.4 | 109.5 | 104.0 | 109.2 | 107.9 |
| Percentage changes: annual and latest quarter on previous quarter | | | | | | | | | | | | | | |
| | L3BB | L3BH | L3BN | L3DM | L3DQ | L3BG | L3DW | L3GP | KI8L | KI8N | KI8P | L3E2 | IHYQ | KLH8 |
| 2011 | 10.9 | -14.3 | 2.2 | -6.1 | 5.7 | -0.6 | 2.2 | 1.6 | 2.3 | 2.2 | 0.3 | 1.5 | 1.5 | 1.8 |
| 2012 | -7.3 | -10.9 | -1.4 | -0.9 | -0.1 | -2.7 | -6.9 | 1.6 | 2.1 | 3.2 | 1.9 | 2.4 | 1.3 | 1.3 |
| 2013 | 0.7 | -2.7 | -1.0 | -0.2 | 4.3 | -0.7 | 1.5 | 3.5 | 1.8 | 2.1 | 0.3 | 1.8 | 1.9 | 1.5 |
| 2014 | 13.9 | 0.6 | 2.9 | -6.0 | 0.7 | 1.5 | 8.0 | 4.8 | 3.0 | 3.9 | 1.7 | 3.3 | 3.1 | 3.5 |
| 2015 | 1.3 | 8.5 | -0.1 | 0.4 | 3.4 | 1.3 | 4.9 | 4.6 | 3.8 | 2.6 | 0.5 | 2.5 | 2.2 | 2.3 |
| 2013 | Q1 | -0.4 | 3.1 | -0.2 | 1.2 | -0.2 | 0.4 | -0.4 | 1.0 | 1.6 | 0.1 | 0.1 | 0.4 | 0.6 |
| | Q2 | 0.6 | 1.5 | 0.7 | -1.6 | 2.0 | 0.7 | 1.7 | 1.4 | -0.7 | 0.3 | -0.5 | 0.1 | 0.5 |
| | Q3 | 2.0 | 2.6 | 0.3 | -5.6 | 4.6 | 0.4 | 2.8 | 1.0 | -0.5 | 0.8 | - | 0.4 | 0.8 |
| | Q4 | 1.3 | -0.7 | 0.4 | 1.5 | 0.5 | 0.4 | 1.3 | 0.3 | 0.2 | 0.7 | 0.4 | 0.5 | 0.6 |
| 2014 | Q1 | 8.2 | -0.2 | 1.6 | -5.4 | -0.1 | 0.5 | 2.3 | 1.4 | 0.8 | 0.9 | 0.9 | 1.0 | 0.8 |
| | Q2 | 1.8 | 0.4 | 0.6 | 0.6 | -3.0 | 0.3 | 1.9 | 1.6 | 1.8 | 1.3 | 0.7 | 1.2 | 0.9 |
| | Q3 | 2.0 | -2.0 | 0.3 | 3.3 | -0.7 | 0.2 | 2.5 | 1.1 | 1.6 | 1.2 | 0.4 | 1.0 | 0.8 |
| | Q4 | 2.6 | 1.4 | 0.3 | -2.1 | 1.3 | 0.3 | 0.3 | 1.6 | 1.2 | 1.5 | -0.1 | 1.0 | 0.8 |
| 2015 | Q1 | -2.9 | 1.8 | -0.1 | 2.0 | 0.4 | 0.4 | 2.6 | 0.8 | 0.4 | - | -0.5 | 0.1 | 0.3 |
| | Q2 | 1.1 | 8.0 | -0.4 | -2.5 | 3.9 | 0.7 | 0.7 | 0.9 | 0.7 | 0.1 | 0.5 | 0.5 | 0.4 |
| | Q3 | 0.1 | 1.7 | -0.4 | 1.3 | -0.1 | - | -0.8 | 0.9 | 0.7 | 0.5 | 0.1 | 0.5 | 0.3 |
| | Q4 | 0.4 | -2.2 | 0.1 | -2.2 | 0.8 | -0.4 | 0.6 | 1.5 | 1.2 | 0.7 | 0.8 | 0.9 | 0.7 |
| 2016 | Q1 | -0.1 | -1.2 | -0.3 | 0.7 | 2.4 | -0.1 | 0.8 | 1.4 | - | 0.7 | 0.5 | 0.7 | 0.4 |
| | Q2 | -1.0 | 2.8 | 1.6 | 4.6 | 2.1 | 2.1 | -0.1 | 1.1 | 0.6 | 0.6 | 0.1 | 0.6 | 0.7 |
| | Q3 | -0.7 | 5.2 | -1.0 | -3.6 | -0.2 | -0.4 | -1.4 | 1.1 | 2.2 | 0.5 | 0.3 | 0.8 | 0.5 |
| Preliminary Estimate | | | | | | | | | | | | | | |
| | Q3 | -0.7 | 5.2 | -1.0 | -3.6 | -0.2 | -0.4 | -1.4 | 1.1 | 2.2 | 0.5 | 0.3 | 0.8 | 0.5 |
| Percentage changes: quarter on corresponding quarter of previous year | | | | | | | | | | | | | | |
| | L3ZZ | L427 | L42D | L44C | L44G | L426 | L44M | L47F | KI12 | KI19 | KI18 | L44Q | IHYR | KLH9 |
| 2014 | Q3 | 13.9 | -2.4 | 2.9 | -0.2 | -3.3 | 1.4 | 8.2 | 4.4 | 4.2 | 2.4 | 3.7 | 3.1 | 3.9 |
| | Q4 | 15.3 | -0.3 | 2.8 | -3.8 | -2.5 | 1.3 | 7.1 | 5.9 | 5.5 | 4.9 | 1.9 | 4.3 | 3.5 |
| 2015 | Q1 | 3.4 | 1.6 | 1.1 | 3.7 | -2.0 | 1.2 | 7.5 | 5.2 | 5.0 | 4.0 | 0.6 | 3.4 | 2.8 |
| | Q2 | 2.7 | 9.4 | 0.1 | 0.6 | 5.0 | 1.6 | 6.2 | 4.5 | 4.0 | 2.9 | 0.4 | 2.6 | 2.4 |
| | Q3 | 0.8 | 13.5 | -0.6 | -1.3 | 5.6 | 1.4 | 2.9 | 4.4 | 3.1 | 2.2 | 0.1 | 2.1 | 1.9 |
| | Q4 | -1.4 | 9.4 | -0.8 | -1.3 | 5.1 | 0.8 | 3.1 | 4.2 | 3.0 | 1.4 | 1.0 | 2.0 | 1.7 |
| 2016 | Q1 | 1.4 | 6.1 | -1.1 | -2.7 | 7.2 | 0.2 | 1.3 | 4.8 | 2.7 | 2.0 | 1.9 | 2.6 | 1.9 |
| | Q2 | -0.7 | 1.0 | 1.0 | 4.4 | 5.3 | 1.6 | 0.4 | 5.0 | 2.5 | 2.6 | 1.5 | 2.7 | 2.1 |
| | Q3 | -1.4 | 4.5 | 0.4 | -0.7 | 5.2 | 1.2 | -0.2 | 5.1 | 4.0 | 2.6 | 1.7 | 3.0 | 2.3 |

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 our website as a [Time series dataset](#)

NB: Q1 is Jan-Mar, Q2 is Apr-June, Q3 is July-Sept, Q4 is Oct-Dec

Annex A -contributions to growth - output components

Contributions to growth¹, quarter-on-quarter, for the output components of GDP², CVM SA

| Component | 2015Q3 | 2015Q4 | 2016Q1 | 2016Q2 | 2016Q3 |
|--------------------------------------------|--------|--------|--------|--------|--------|
| Agriculture | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Production | 0.0 | -0.1 | 0.0 | 0.3 | -0.1 |
| Mining & quarrying inc oil and gas extract | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| Manufacturing | 0.0 | 0.0 | 0.0 | 0.2 | -0.1 |
| Electricity, gas and air | 0.0 | 0.0 | 0.0 | 0.1 | -0.1 |
| Water and Sewerage | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Construction | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 |
| Total Services | 0.4 | 0.7 | 0.5 | 0.5 | 0.6 |
| Distn, hotels and catering | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 |
| Transport, storage and comms | 0.1 | 0.1 | 0.0 | 0.1 | 0.2 |
| Business services and finance | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Government and other services | 0.0 | 0.2 | 0.1 | 0.0 | 0.1 |

- Contributions are to output GVA and therefore may not sum to average GDP totals
- Components may not sum to totals due to rounding.

Contributions to growth¹, quarter on same quarter of previous year, for the output components of GDP², CVM SA

| Component | 2015Q3 | 2015Q4 | 2016Q1 | 2016Q2 | 2016Q3 |
|--------------------------------------------|--------|--------|--------|--------|--------|
| Agriculture | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Production | 0.2 | 0.1 | 0.0 | 0.2 | 0.2 |
| Mining & quarrying inc oil and gas extract | 0.2 | 0.2 | 0.1 | 0.0 | 0.1 |
| Manufacturing | -0.1 | -0.1 | -0.1 | 0.1 | 0.0 |
| Electricity, gas and air | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Water and Sewerage | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Construction | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 |
| Total Services | 1.6 | 1.6 | 2.0 | 2.1 | 2.4 |
| Distn, hotels and catering | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 |
| Transport, storage and comms | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 |
| Business services and finance | 0.7 | 0.5 | 0.7 | 0.8 | 0.8 |
| Government and other services | 0.0 | 0.2 | 0.4 | 0.3 | 0.4 |

- Contributions are to output GVA and therefore may not sum to average GDP totals
- Components may not sum to totals due to rounding.

Contributions to growth¹, year on year, for the output components of GDP², CVM SA

| Component | 2013 | 2014 | 2015 |
|--------------------------------------------|------|------|------|
| Agriculture | 0.0 | 0.1 | 0.0 |
| Total Production | -0.1 | 0.2 | 0.2 |
| Mining & quarrying inc oil and gas extract | -0.1 | 0.0 | 0.1 |
| Manufacturing | -0.1 | 0.3 | 0.0 |
| Electricity, gas and air | 0.0 | -0.1 | 0.0 |
| Water and Sewerage | 0.0 | 0.0 | 0.0 |
| Construction | 0.1 | 0.5 | 0.3 |
| Total Services | 1.4 | 2.6 | 2.0 |
| Distn, hotels and catering | 0.5 | 0.7 | 0.6 |
| Transport, storage and comms | 0.2 | 0.3 | 0.4 |
| Business services and finance | 0.7 | 1.2 | 0.8 |
| Government and other services | 0.1 | 0.4 | 0.1 |

- Contributions are to output GVA and therefore may not sum to average GDP totals
- Components may not sum to totals due to rounding.

Table P: GDP Per Head ¹
UK

£

| | UK resident population mid-year estimates (persons, thousands) ² | Chained volume measure (Reference year = 2013) | |
|------|-----------------------------------------------------------------------------|------------------------------------------------------|---------------------------------|
| | | Gross domestic product at market prices ³ | Gross domestic product per head |
| | EBAQ | ABMI | IHXW |
| 2011 | 63 285 | 1 684 820 | 26 623 |
| 2012 | 63 705 | 1 706 942 | 26 794 |
| 2013 | 64 106 | 1 739 563 | 27 136 |
| 2014 | 64 597 | 1 792 976 | 27 756 |
| 2015 | 65 110 | 1 832 807 | 28 149 |

Seasonally adjusted

| | | | |
|---------|--------|---------|-------|
| 2011 Q3 | 63 390 | 421 918 | 6 656 |
| Q4 | 63 495 | 422 965 | 6 661 |
| 2012 Q1 | 63 600 | 424 834 | 6 680 |
| Q2 | 63 705 | 424 468 | 6 663 |
| Q3 | 63 805 | 429 319 | 6 729 |
| Q4 | 63 905 | 428 321 | 6 702 |
| 2013 Q1 | 64 005 | 431 025 | 6 734 |
| Q2 | 64 106 | 433 271 | 6 759 |
| Q3 | 64 228 | 436 560 | 6 797 |
| Q4 | 64 351 | 438 707 | 6 817 |
| 2014 Q1 | 64 474 | 442 425 | 6 862 |
| Q2 | 64 597 | 446 519 | 6 912 |
| Q3 | 64 725 | 450 141 | 6 955 |
| Q4 | 64 854 | 453 891 | 6 999 |
| 2015 Q1 | 64 982 | 455 027 | 7 002 |
| Q2 | 65 110 | 457 321 | 7 024 |
| Q3 | 65 226 | 458 708 | 7 033 |
| Q4 | 65 341 | 461 751 | 7 067 |
| 2016 Q1 | 65 457 | 463 678 | 7 084 |
| Q2 | 65 572 | 466 790 | 7 119 |
| Q3 | 65 686 | 469 124 | 7 142 |

Percentage change, latest year on previous year

| | | |
|------|-------------|-------------|
| | IHYP | N3Y6 |
| 2011 | 1.5 | 0.7 |
| 2012 | 1.3 | 0.6 |
| 2013 | 1.9 | 1.3 |
| 2014 | 3.1 | 2.3 |
| 2015 | 2.2 | 1.4 |

Percentage change, latest quarter on previous quarter

| | | |
|---------|-------------|-------------|
| | IHYQ | N3Y7 |
| 2011 Q3 | 0.4 | 0.3 |
| Q4 | 0.2 | 0.1 |
| 2012 Q1 | 0.4 | 0.3 |
| Q2 | -0.1 | -0.3 |
| Q3 | 1.1 | 1.0 |
| Q4 | -0.2 | -0.4 |
| 2013 Q1 | 0.6 | 0.5 |
| Q2 | 0.5 | 0.4 |
| Q3 | 0.8 | 0.6 |
| Q4 | 0.5 | 0.3 |
| 2014 Q1 | 0.8 | 0.7 |
| Q2 | 0.9 | 0.7 |
| Q3 | 0.8 | 0.6 |
| Q4 | 0.8 | 0.6 |
| 2015 Q1 | 0.3 | 0.0 |
| Q2 | 0.5 | 0.3 |
| Q3 | 0.3 | 0.1 |
| Q4 | 0.7 | 0.5 |
| 2016 Q1 | 0.4 | 0.2 |
| Q2 | 0.7 | 0.5 |
| Q3 | 0.5 | 0.3 |

Source: Office for National Statistics

1. This data uses the latest population estimates with the exception of the latest year where population projections are used. The quarterly data in this table does not sum to annuals (excluding GDP at market prices), please see explanation in the notes section.

2. Last published 23rd June 2016; next published June 2017.

3. GDP is presented in £ million.