Office for National Statistics

Statistical bulletin

Second Estimate of GDP: Q4 October to December 2014

The second quarterly estimate of GDP based on additional data but produced later than the preliminary estimate, providing a more precise indication of economic growth.

Contact:
Matthew Hughes
gdp@ons.gsi.gov.uk

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26 February 2015

Next release:
31 March 2015

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1. Key findings

- UK gross domestic product (GDP) in volume terms was estimated to have increased by 0.5% between Q3 2014 and Q4 2014, unrevised from the previous estimate of GDP published 27 January 2015
- GDP was estimated to have increased by 2.6% in 2014, compared with 2013, unrevised from the previously published estimate
- Between Q4 2013 and Q4 2014, GDP in volume terms increased by 2.7%, unrevised from the previously published estimate
- GDP in current prices was estimated to have increased by 0.4% between Q3 2014 and Q4 2014

2. Understanding GDP

Change in GDP is the main indicator of economic growth. There are three approaches used to measure GDP.

Gross value added (GVA) is the sum of goods and services produced within the economy less the value of goods and services used up in the production process (intermediate consumption). The output approach measures 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 (more information on creating the preliminary estimate of GDP is available on the Methods and sources page of the ONS website).

The income approach measures income generated by production in the form of gross operating surplus (profits), compensation of employees (income from employment) and mixed income (self-employment income) for the whole economy.

The expenditure approach is the sum of all final expenditures within the economy, that is, all expenditure on goods and services which are not used up or transformed in the process i.e. final consumption (not intermediate) for the whole economy.

The second estimate of GDP is based on revised output data, together with data from some expenditure and income components. 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 (105.5 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), with the exception of income data which is only available in current prices.

Growth for GDP and its components is given between different periods. Latest year on previous year gives the annual growth between one calendar year and the previous. Latest quarter on previous quarter growth gives growth between one quarter and the quarter immediately before it. Latest quarter on corresponding quarter of previous year shows the growth between one quarter and the same quarter a year ago.

In line with national accounts revisions policy, the earliest period open for revision in this release is Q1 2014.

About the second estimate of GDP

The second estimate of GDP is produced around seven and a half weeks after the end of the quarter to provide a timely estimate of GDP. At this stage the data content of this estimate from the output measure of GDP has risen

to around 80% of the total required for the final output based estimate. There is also around 50-60% data content available to produce estimates of GDP from the expenditure and income approaches.

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.

The quality of the GDP estimate

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 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, ONS like all other G7 national statistical institutes, does not publish a measure of the sampling error associated with GDP.

3. Headline GDP and selected components

Table 1: Q4 2014

	Current market prices		Chained volume measures		
	Gross domestic product	Compensation of employees	Gross domestic product	Household expenditure	Gross fixed capital formation
Seasonally adjusted					
Q4 2012	-0.1	-0.9	-0.3	0.7	1.1
Q1 2013	0.8	0.0	0.6	0.4	1.0
Q2 2013	2.0	2.9	0.6	0.3	0.6
Q3 2013	0.7	0.1	0.7	0.6	2.7
Q4 2013	1.1	0.3	0.4	0.4	2.3
Q1 2014	0.9	-0.2	0.7	0.6	2.4
Q2 2014	1.8	1.9	0.8	0.5	1.3
Q3 2014	0.6	1.3	0.7	0.7	0.5
Q4 2014	0.4	1.2	0.5	0.5	-0.5

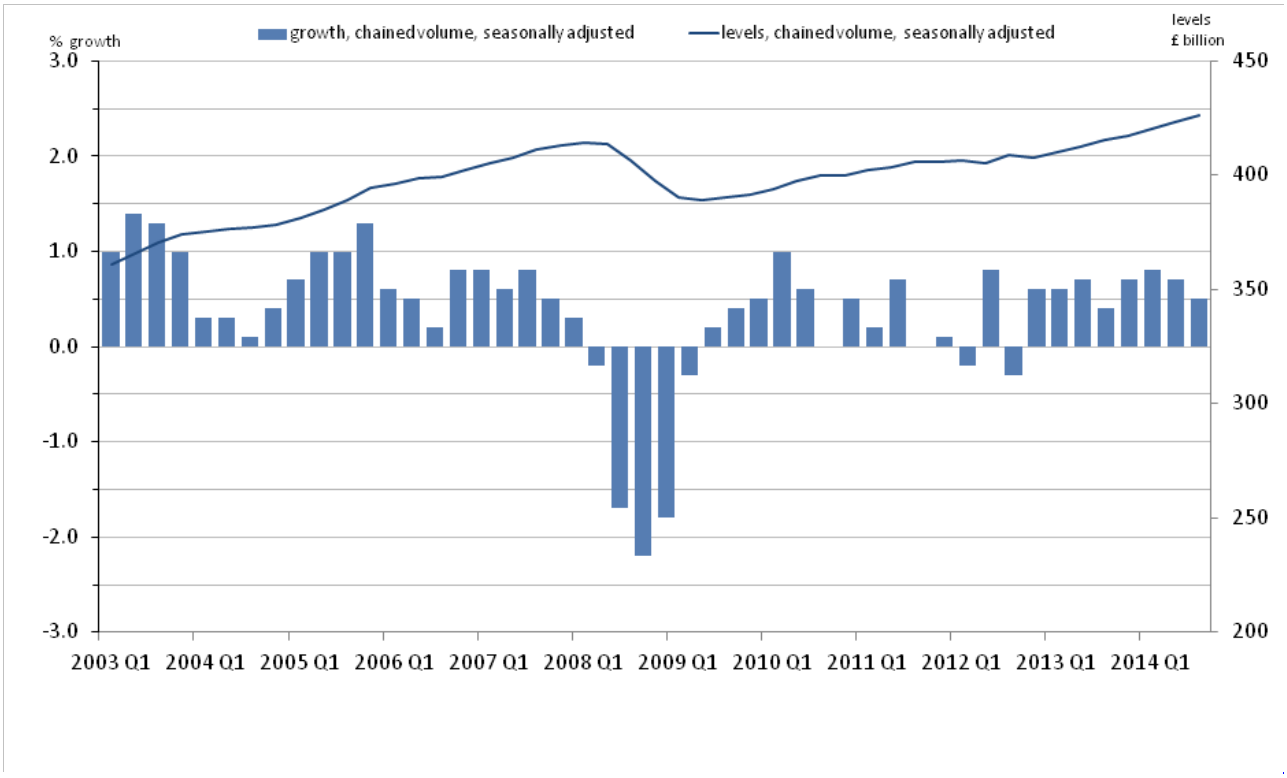
Source: Office for National Statistics

Notes:

1. Percentage change on previous quarter

4. Historical context

Figure 1: Quarterly growth and levels of GDP, table A2



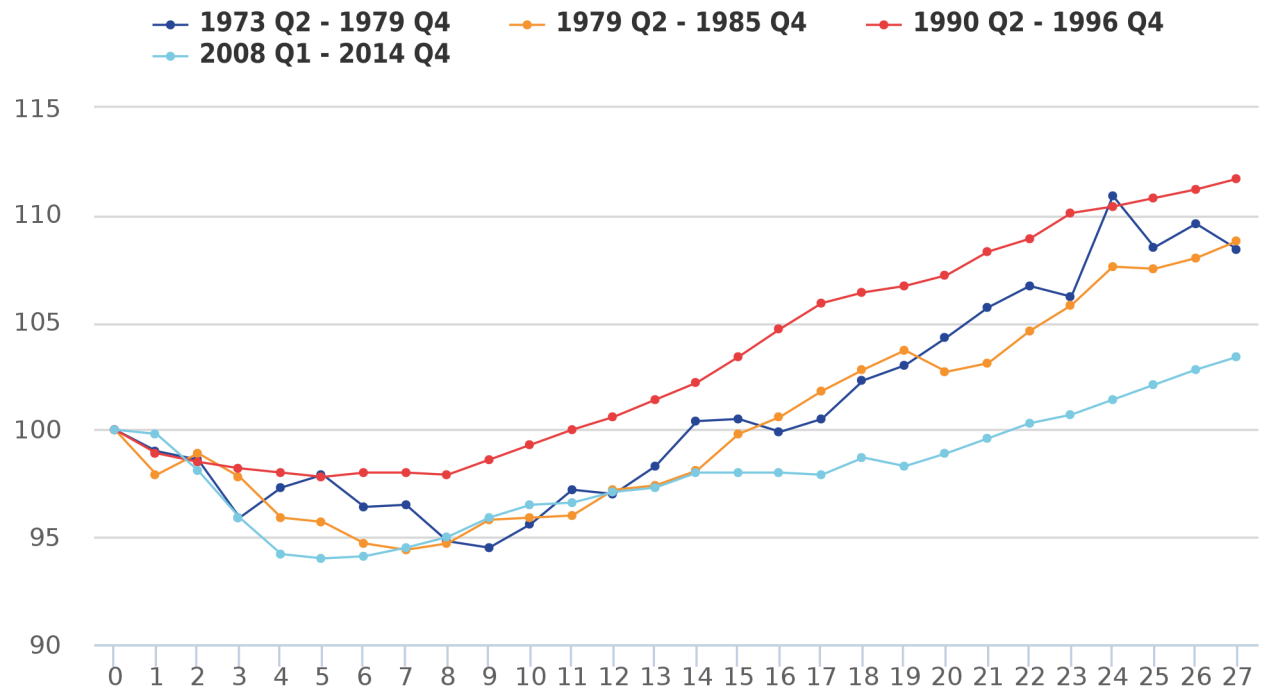
Source: Office for National Statistics

Figure 1 shows 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 typically at a slower rate than the period prior to 2008. From the peak in Q1 2008 to the trough in Q2 2009, GDP decreased by 6.0%. This can be compared to previous economic downturns in the early 1980s and early 1990s which saw lower levels of impact on GDP (see Figure 2). In the early 1990s downturn, GDP decreased by 2.2% from the peak in Q2 1990 to the trough in Q3 1991. In the early 1980s downturn, GDP decreased by 5.6% from the peak in Q2 1979 to the trough in Q1 1981.

From Q3 2009 growth continued to be erratic, with several quarters between 2010 and 2012 recording broadly flat 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, with the economy exceeding pre-downturn peak levels in Q3 2013.

Figure 2: GDP quarter-on-quarter growth from peak for previous and latest economic downturns

chained volume measure, seasonally adjusted



Source: Office for National Statistics

The latest figures for Q4 2014 show the UK recovery continuing, with GDP in real terms growing by 0.5% compared with the previous quarter; by 2.7% between Q4 2013 and Q4 2014, and by 2.6% between 2013 and 2014.

5. GDP analysed by output categories, chained volume measure, tables B1 and B2

Annex A (31 Kb Excel sheet) contains growth rates back to Q1 2013.

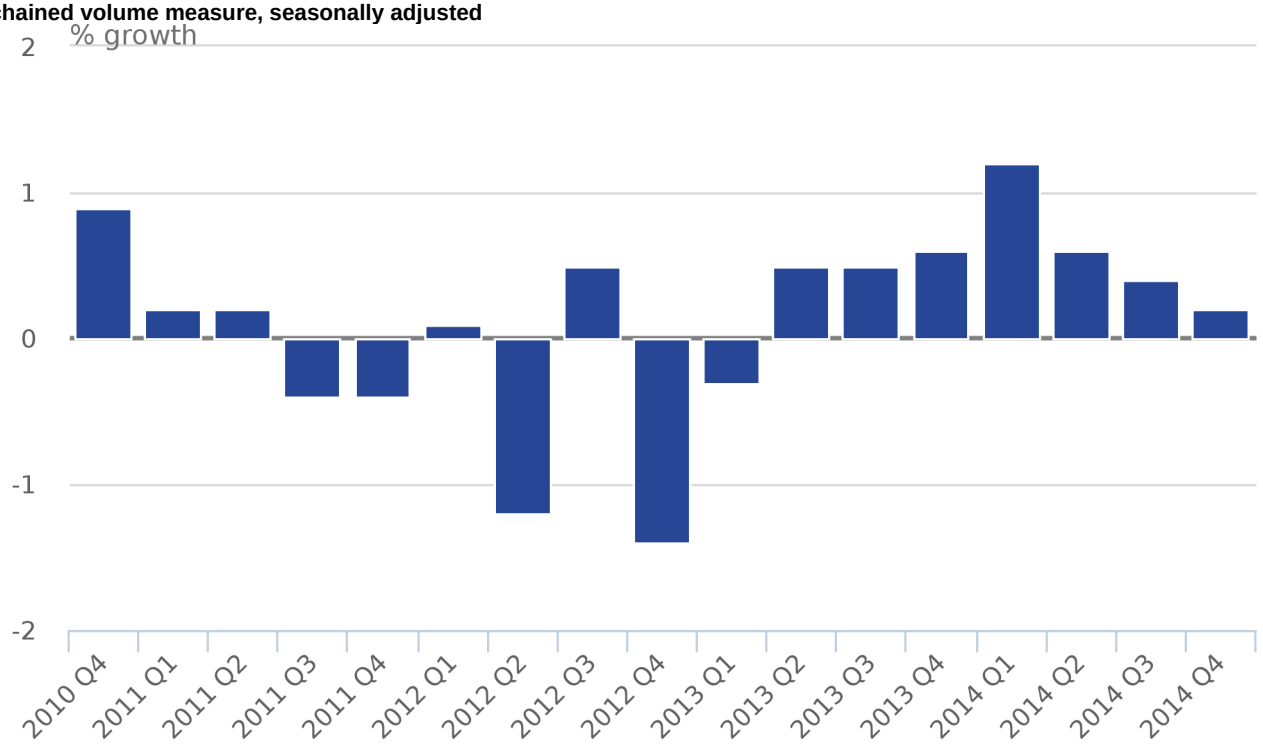
The output components of GDP show increases in Q4 2014 for agriculture, forestry and fishing, production and services. The only component to decrease was construction.

Production output increased by 0.1% in Q4 2014 compared with Q3 2014, revised up 0.2 percentage points from the previously published estimate. Within the production sub-industries, output from mining and quarrying, including oil and gas extraction, rose by 0.5%; manufacturing (the largest component of production) increased by 0.2% (see Figure 3), while electricity, gas, steam and air conditioning, and supply industries fell by 2.7%. Water supply and sewerage rose by 0.5%.

When comparing Q4 2014 with Q4 2013, production output rose by 0.8%. Manufacturing was the only production component to have increased between these periods, growing by 2.4%, while mining and quarrying, electricity, gas, steam and air conditioning, and supply industries and water supply and sewerage contracted by 2.2%, 4.3% and 3.4% respectively.

Figure 3: Manufacturing growth, quarter-on-quarter

chained volume measure, seasonally adjusted



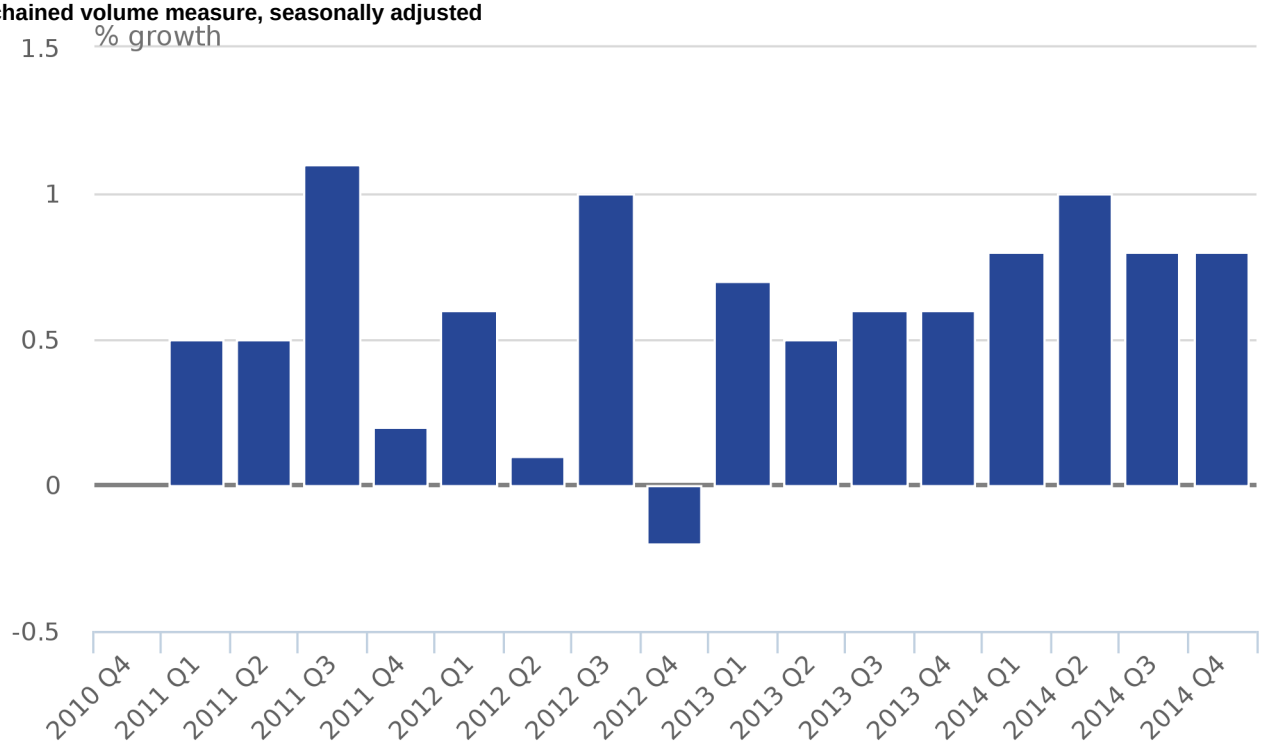
Source: Office for National Statistics

Construction output decreased by 2.1% in Q4 2014, revised down 0.3 percentage points from the previously published estimate. Construction output has risen by 4.7% since Q4 2013.

The service industries grew by 0.8% in Q4 2014 (see Figure 4), unrevised from the previous estimate, marking the eighth consecutive quarter of positive growth. This follows a 0.8% increase in Q3 2014.

Figure 4: Services growth, quarter-on-quarter

chained volume measure, seasonally adjusted



Source: Office for National Statistics

Output of the distribution, hotels and restaurants industries rose by 1.3% in Q4 2014, unrevised from the previous estimate and follows a 0.8% increase in Q3 2014. The 1.3% increase in the latest quarter was largely due to retail trade, except of motor vehicles and motorcycles.

Output of the transport, storage and communication industries rose by 1.3% in Q4 2014, revised up 0.2 percentage points from the previously published estimate; this follows another 1.3% increase in Q3 2014. The largest contributors to the growth were computer programming, consultancy and related activities.

Business services and finance industries' output rose by 0.9% in Q4 2014, unrevised from the previously published estimate, following a 0.9% increase in Q3 2014. The largest upward contribution to growth in Q4 2014 came from architectural and engineering activities; technical testing and analysis.

Output of government and other services was flat in Q4 2014, unrevised from the previously published estimate and follows a 0.3% increase in Q3 2014.

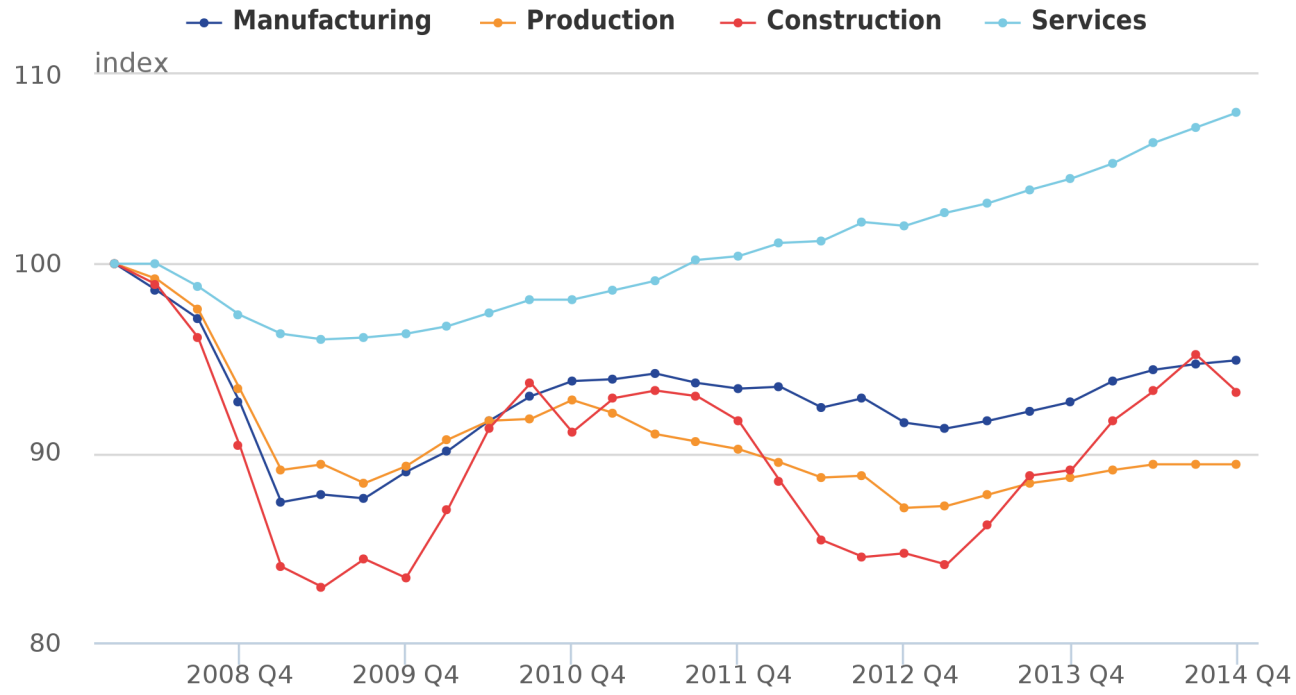
Further detail on the service industries' lower level components can be found in the Index of Services statistical bulletin published on the same day as this release.

Gross value added excluding oil and gas extraction rose by 0.6% in Q4 2014, and by 0.7% in Q3 2014.

Figure 5 shows the path of GDP and its headline industries (this excludes agriculture, and includes manufacturing which is a sub-component of production) relative to their level of output achieved in Q1 2008. In the decade prior to the downturn, the services industry is shown to have grown steadily, while production output was broadly flat over the same period. Construction activity grew strongly in the early part of the decade, and although there was a temporary decline in the mid-2000s; this was reversed by the end of 2007.

Figure 5: GDP output components growth, quarter-on-quarter

chained volume measure, seasonally adjusted, Q1 2008=100



Source: Office for National Statistics

Industries have shown differing trends following the recent economic downturn. The construction, manufacturing and production industries (including manufacturing) were more acutely affected by the deterioration in economic conditions, with output falling between 2008 and 2009 by 13.2%, 9.4% and 8.8% respectively. In contrast, output in the service industries only fell by 2.9% between 2008 and 2009.

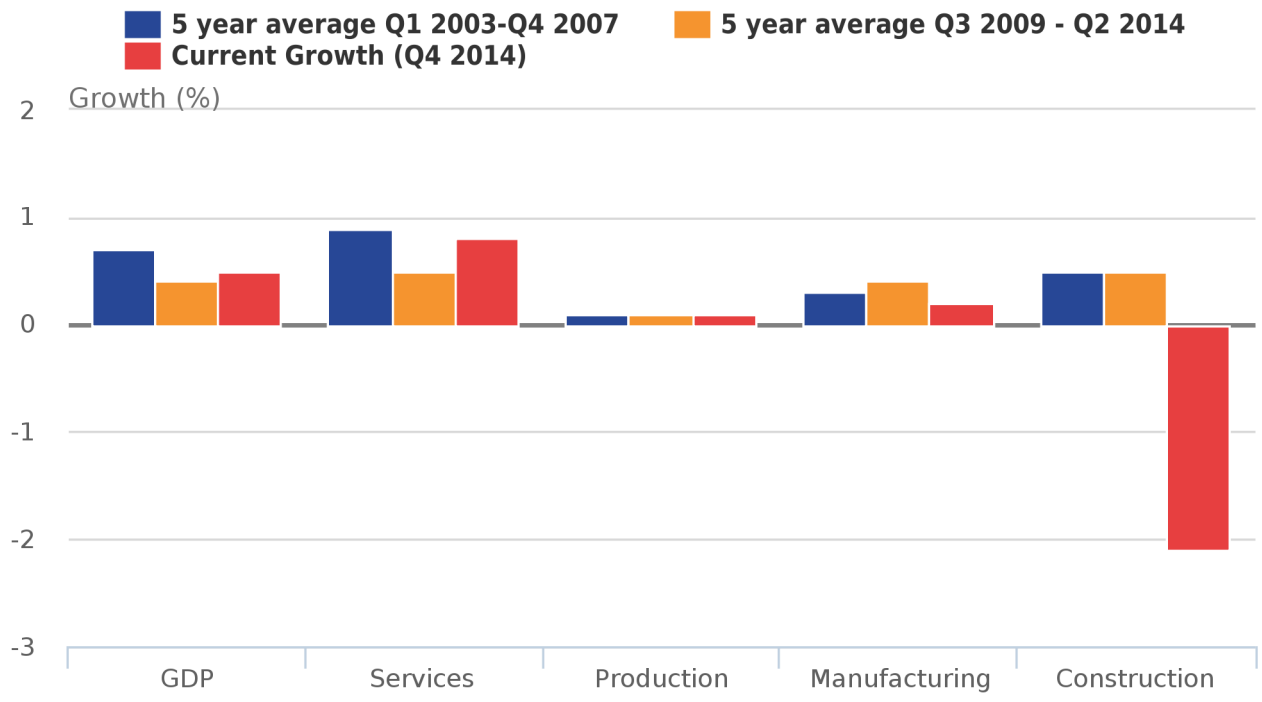
Production activity began to grow in 2010 - with manufacturing and the construction industry showing particular strength - but both industries did not sustain this growth. Production output fell in both 2011 and 2012, falling below levels seen at the depth of the downturn in 2009. Construction output also fell sharply in 2012, with output falling close to its 2009 trough following further contraction in Q1 2013. Construction output improved over much of 2014; however output declined in the most recent quarter. 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 contributors to overall economic growth and are the only headline industries in which output has exceeded pre-downturn levels.

Figure 6 shows the average compound quarterly growth rate experienced over the five years prior to the 2008/09 economic downturn; the average growth rate experienced between Q3 2009 and Q2 2014 (five years following the downturn), and the current quarterly growth rate observed in the most recent period (Q4 2014). Compound average growth is the rate at which a series would have increased/decreased if it had grown/fallen at a steady rate over a number of periods. This allows the composition of growth in the recent economic recovery to be compared to the long run average. The UK experienced slightly slower average compound GDP growth in the five years following the economic downturn compared with the five years prior; this is also true of the service industries. In Q4 2014, only services outperformed post-downturn average rates of growth of the headline industry shown. Within services, the scientific, administrative and support industries have shown particular strength in the most recent quarter. Services growth has also been supported by the wholesale and transport industries.

It should be noted that the third column, in Figure 6, which shows the current quarterly growth rate, is based on only one data point. Consequently, users should use caution when making direct comparisons with the long run averages.

Figure 6: GDP quarterly average compound growth by industry grouping before and after the 2008-2009 economic downturn

United Kingdom, 2003-2007 and 2009-2014



Source: Office for National Statistics

6. GDP Analysed by expenditure categories, chained volume measure, table C2

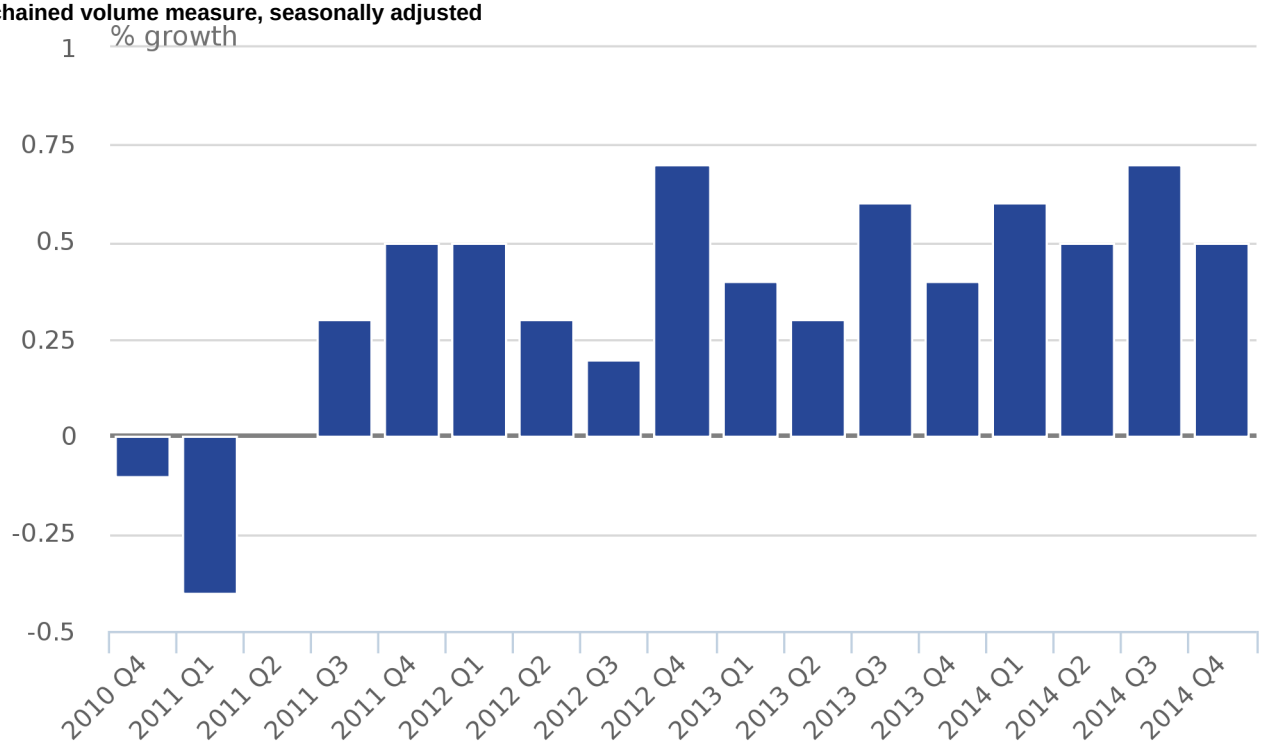
Annex B (35 Kb Excel sheet) contains expenditure component growth rates back to Q1 2013.

Gross domestic expenditure (the sum of all expenditure by UK residents on goods and services which is not used up or transformed in a productive process) was flat in Q4 2014, following a 1.3% increase in Q3 2014. Annually, between 2013 and 2014 gross domestic expenditure increased by 2.9%.

Household final consumption expenditure rose by 0.5% in Q4 2014 and has increased for fourteen consecutive quarters (see Figure 7). When compared with the same quarter a year ago, household final consumption expenditure has been rising each quarter since Q4 2011, and was 2.2% higher in Q4 2014 than in the same period a year ago. Between 2013 and 2014, household final consumption expenditure increased by 2.1%.

Figure 7: Household final consumption expenditure growth, quarter-on-quarter

chained volume measure, seasonally adjusted



Source: Office for National Statistics

Government final consumption expenditure was flat in Q4 2014, following a 0.5% increase in Q3 2014. Between Q4 2013 and Q4 2014, government final consumption expenditure increased by 2.2%. Between 2013 and 2014, government final consumption expenditure increased by 1.5%.

Non-profit institutions serving households' (NPISH) final consumption expenditure fell by 3.3% in Q4 2014, following a 1.1% increase in Q3 2014. Between Q4 2013 and Q4 2014, NPISH final consumption expenditure decreased by 0.6%. Annually, NPISH final consumption expenditure rose by 0.7% between 2013 and 2014.

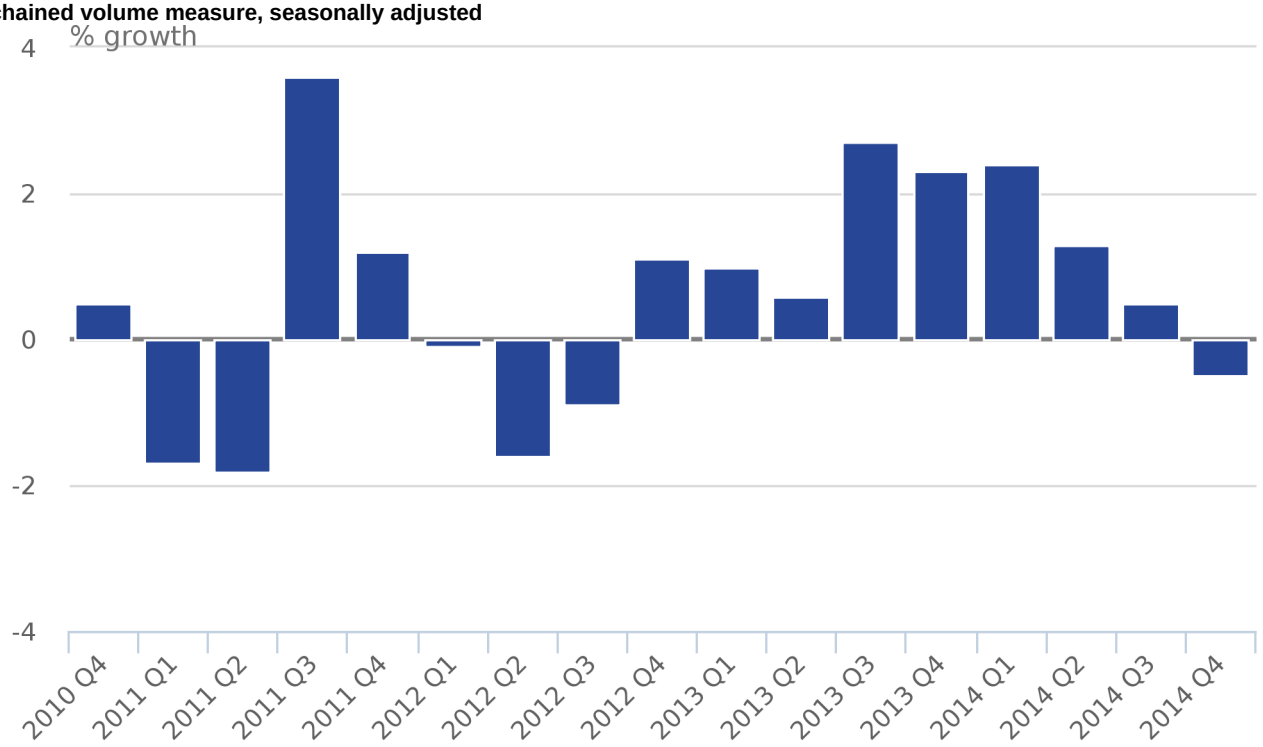
In Q4 2014, gross fixed capital formation was estimated to have decreased by 0.5% (see Figure 8). Business investment was estimated to have fallen by 1.4% in Q4 2014. A large part of the fall in business investment came from a fall in investment by the oil and gas extraction industry.

However, over the longer term, business investment has been relatively strong. It increased by 2.1% compared with the same quarter a year ago, the nineteenth consecutive quarter of growth by this measure. It increased by 6.8% between 2013 and 2014, the largest annual growth since 2007.

More detail on gross fixed capital formation is available in the Business Investment statistical bulletin published on the same day as this release.

Figure 8: Gross fixed capital formation growth, quarter-on-quarter

chained volume measure, seasonally adjusted



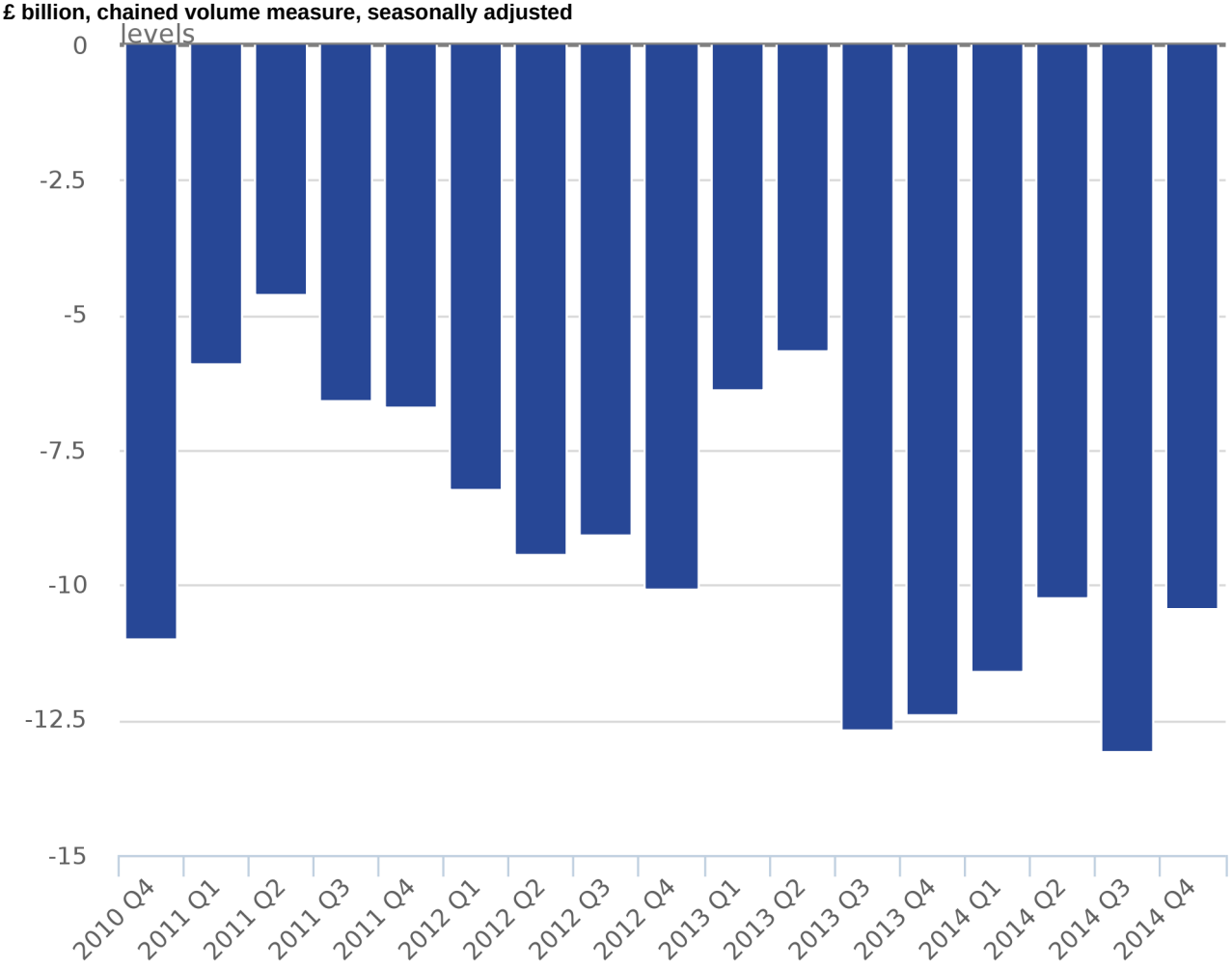
Source: Office for National Statistics

Including the alignment adjustment, the level of inventories increased by £3.6 billion in Q4 2014, following an increase of £4.5 billion in Q3 2014.

The trade balance deficit narrowed from £13.1 billion in Q3 2014 to £10.4 billion in Q4 2014 (see Figure 9). The trade position reflects exports minus imports. Following a 0.8% decrease in Q3 2014, exports rose by 3.5% in the latest quarter, while imports increased by 1.3% following a 1.4% increase in Q3 2014. Between 2013 and 2014, exports increased by 0.4% while imports increased by 1.8%.

Figure 9: Trade balance

£ billion, chained volume measure, seasonally adjusted

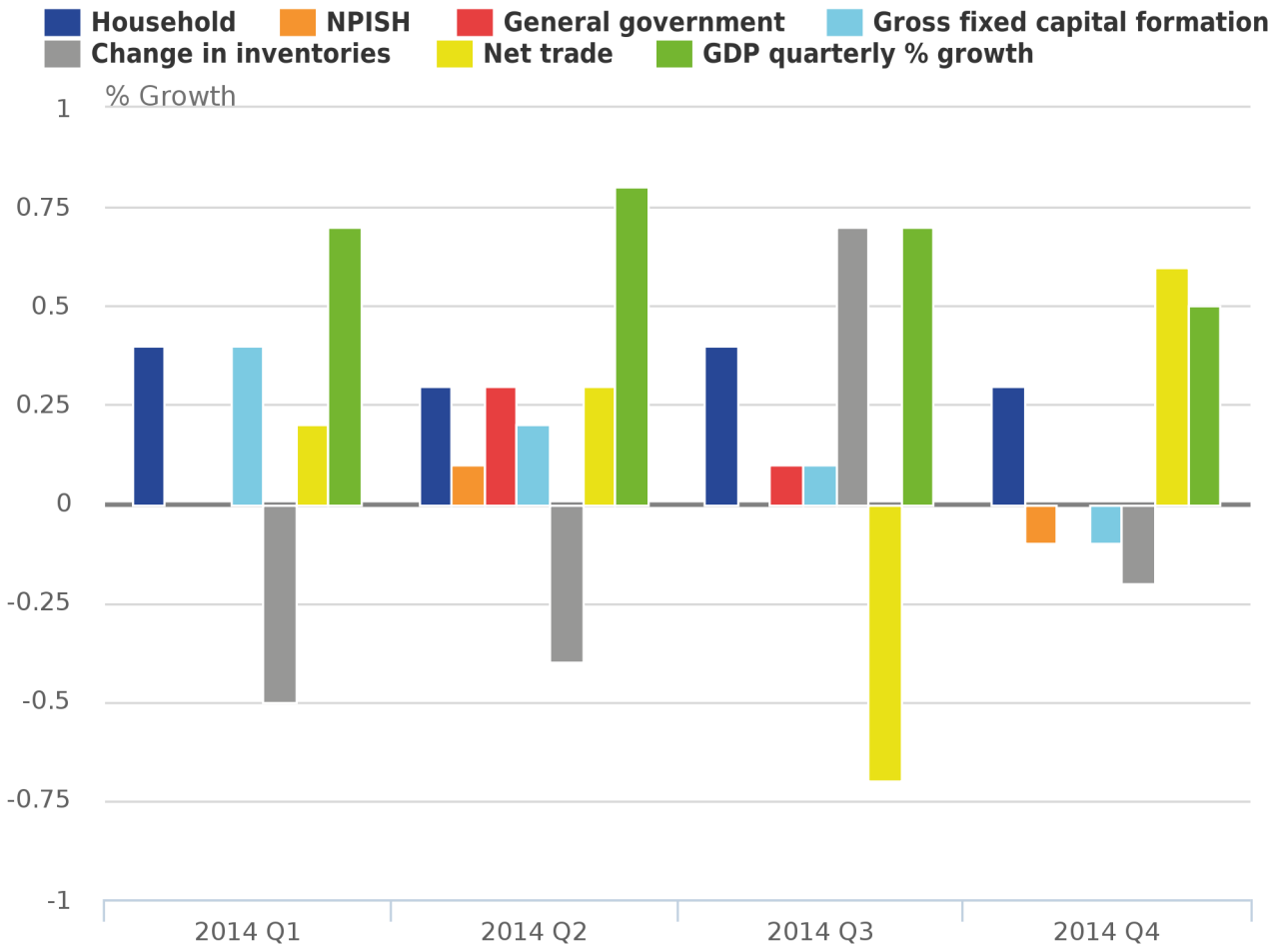


Source: Office for National Statistics

Figure 10 shows the quarterly contribution of the expenditure components to the growth of GDP in chained volume measures. The largest contribution to growth came from net trade which contributed 0.6 percentage points to GDP, followed by household final consumption expenditure which contributed 0.3 percentage points. General government final consumption expenditure contributed 0.0 percentage points to GDP while gross fixed capital formation and NPISH made negative contributions of 0.1 percentage points. Changes in Inventories, excluding the alignment adjustment, made the largest negative contribution to GDP at 0.2 percentage points.

Figure 10: Expenditure components percentage contribution to GDP growth, quarter-on-quarter

chained volume measure, seasonally adjusted



Source: Source: Office for National Statistics

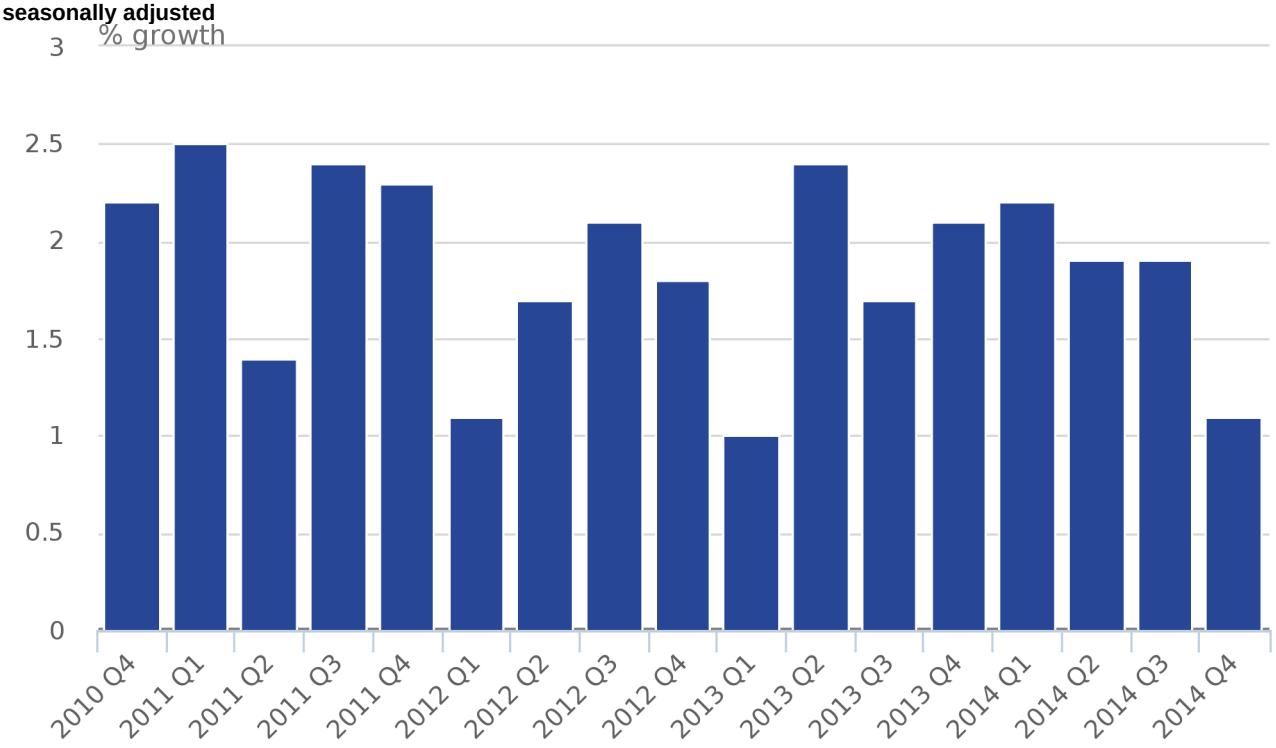
7. GDP implied deflator

Annex D (24.5 Kb Excel sheet) contains implied deflator component growth rates back to Q1 2013.

The gross domestic product implied deflator at market prices for Q4 2014 is 1.1% above the same quarter of 2013 (see Figure 11). The GDP implied deflator is calculated by dividing current price (nominal) GDP by chained volume (real) GDP and multiplying by one hundred to convert to an index. It is not used in the calculation of GDP; the deflators for expenditure components, which are the basis for the implied GDP deflator, are used to calculate nominal GDP not real GDP.

Figure 11: GDP at market prices implied deflator, quarter on same quarter of previous year

seasonally adjusted



Source: Office for National Statistics

8. GDP Analysed by income categories at current prices, Table D

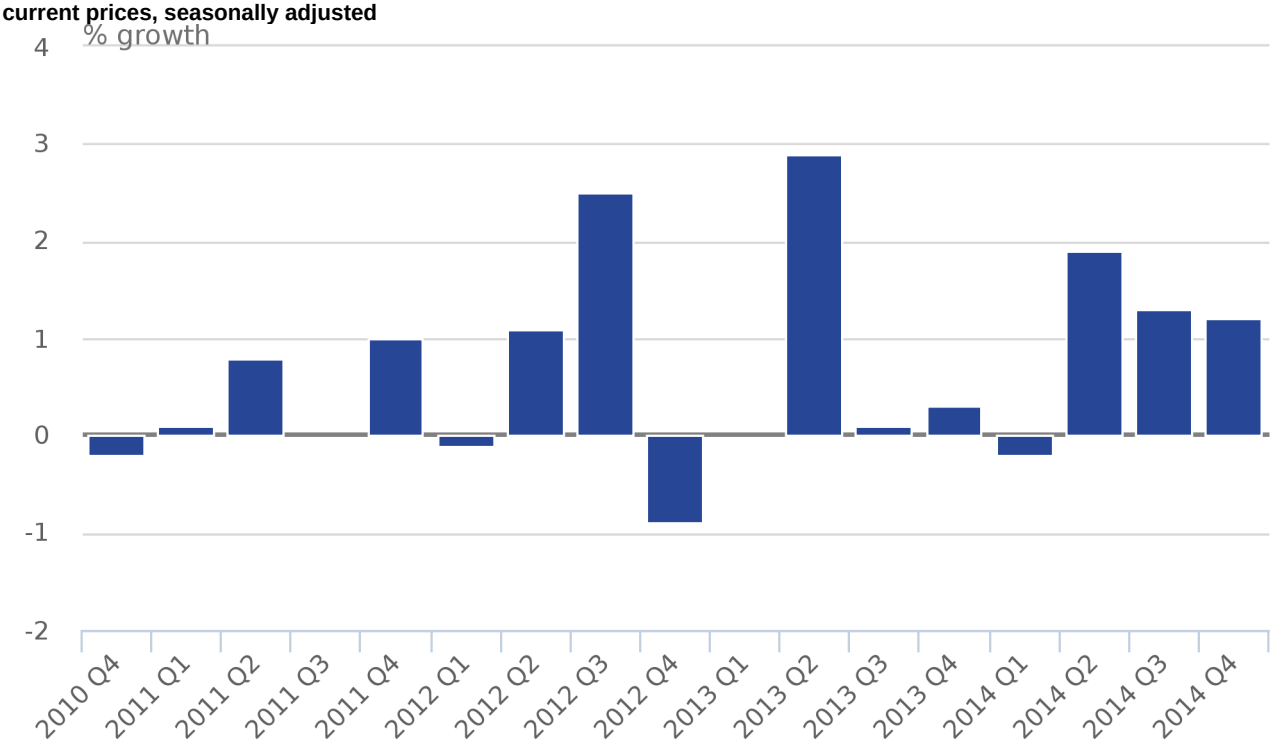
Annex C (31 Kb Excel sheet) contains income component growth rates back to Q1 2013.

GDP at current market prices rose by 0.4% in Q4 2014, following a 0.6% increase in Q3 2014. GDP at current market prices rose by 3.8% when compared to Q4 2013. In 2014, GDP at current market prices rose by 4.4%.

Compensation of employees – which includes both wages and salaries, and pension contributions – increased by 1.2% in Q4 2014, following an increase of 1.3% in Q3 2014 (see Figure 12). Between 2013 and 2014, compensation of employees rose by 3.2%.

Figure 12: Compensation of employees growth, quarter-on-quarter

current prices, seasonally adjusted

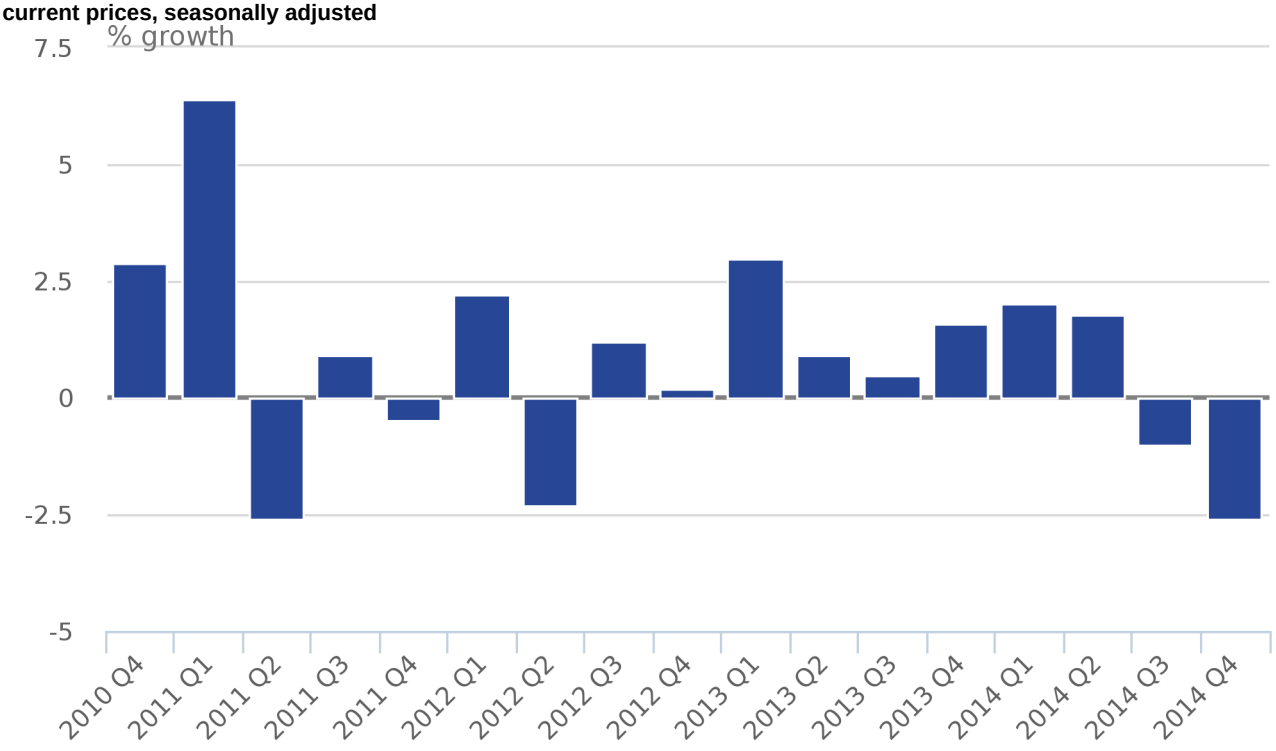


Source: Office for National Statistics

The gross operating surplus of corporations – effectively the profits of companies operating within the UK – including the alignment adjustment, fell by 2.6% in Q4 2014 compared with the previous quarter; this follows a decrease of 1.0% in Q3 2014 (see Figure 13). Between 2013 and 2014 the gross operating surplus of corporations rose by 4.0%.

Figure 13: Gross operating surplus of corporations growth, quarter-on-quarter

current prices, seasonally adjusted



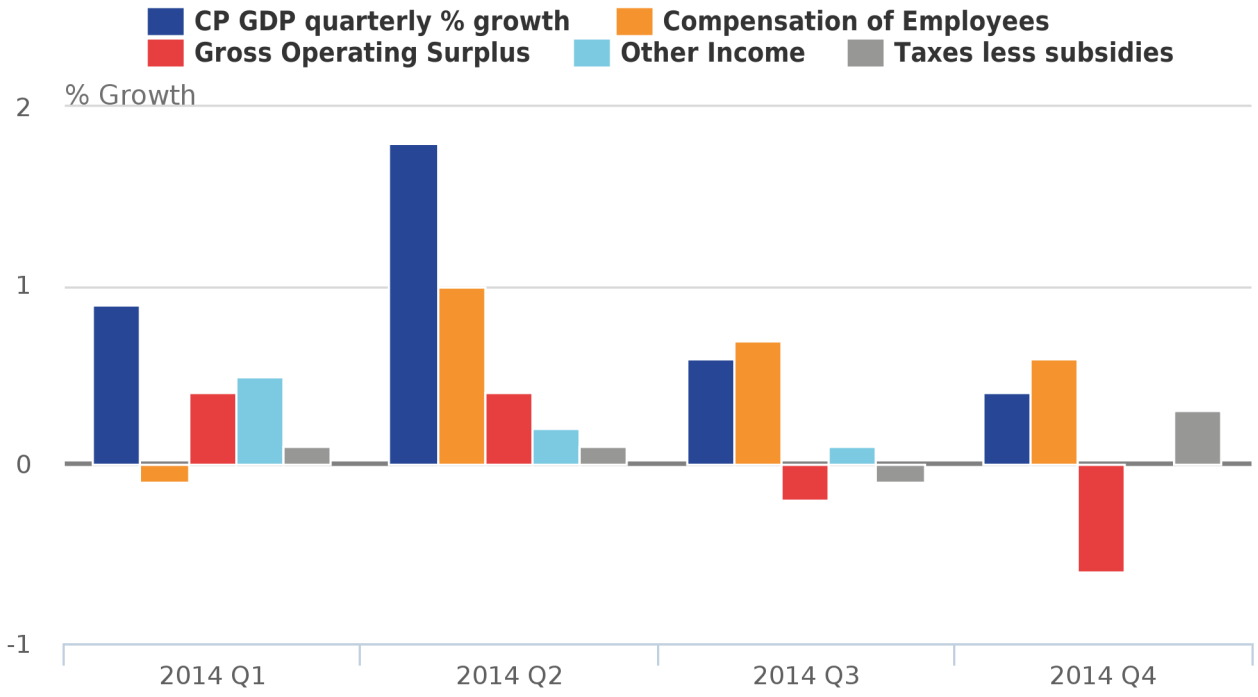
Source: Office for National Statistics

Taxes less subsidies on products and production rose by 2.5% in Q4 2014, following a decrease of 0.6% in Q3 2014. Between 2013 and 2014 taxes less subsidies on products and production rose by 4.7%.

Figure 14 shows the contribution made by income components to current price GDP during Q4 2014. The positive contribution to growth came mainly from two of the components, with contributions from compensation of employees and taxes less subsidies on products and production of 0.6 and 0.3 percentage points respectively. Other income contributed 0.0 percentage points to GDP while gross operating surplus of corporations contributed a negative 0.6 percentage points.

Figure 14: Income components percentage contribution to GDP growth, quarter-on-quarter

current prices, seasonally adjusted



Source: Office for National Statistics

9. International comparisons for Q4 2014

At the time of preparation for this GDP statistical bulletin, the estimates quoted in this international comparison section were the latest available estimates published by the respective bodies (referenced) and may subsequently have been revised.

All areas included within this international comparison saw positive GDP growth in Q4 2014 (see Table 2). The European Union (EU28) grew by 0.4%, the seventh consecutive quarter of positive growth, while the Eurozone (EU18) expanded by 0.3% (see Figure 15). When compared to Q4 2013, GDP for EU18 increased by 0.9%, while GDP for EU28 expanded by 1.3% (see Figure 16).

Between Q3 and Q4 2014, GDP for Germany increased by 0.7%, an acceleration of the 0.1% increase seen in Q3 2014. In contrast, GDP for France increased by 0.1%, slightly down on the 0.3% increase in Q3 2014.

GDP for the United States of America rose by 0.7%, a slightly lower increase than the previous two quarters, which saw GDP increasing by 1.2% in Q3 2014 and 1.1% in Q2 2014. Between Q4 2013 and Q4 2014, GDP for the United States of America rose by 2.5%. Q4 2014 saw positive 0.6% growth for the Japanese economy, following contraction in the previous two quarters. Between Q4 2013 and Q4 2014, GDP for Japan fell by 0.4%.

Table 2: International GDP quarterly growth rate comparisons for selected economic areas, quarter-on-quarter

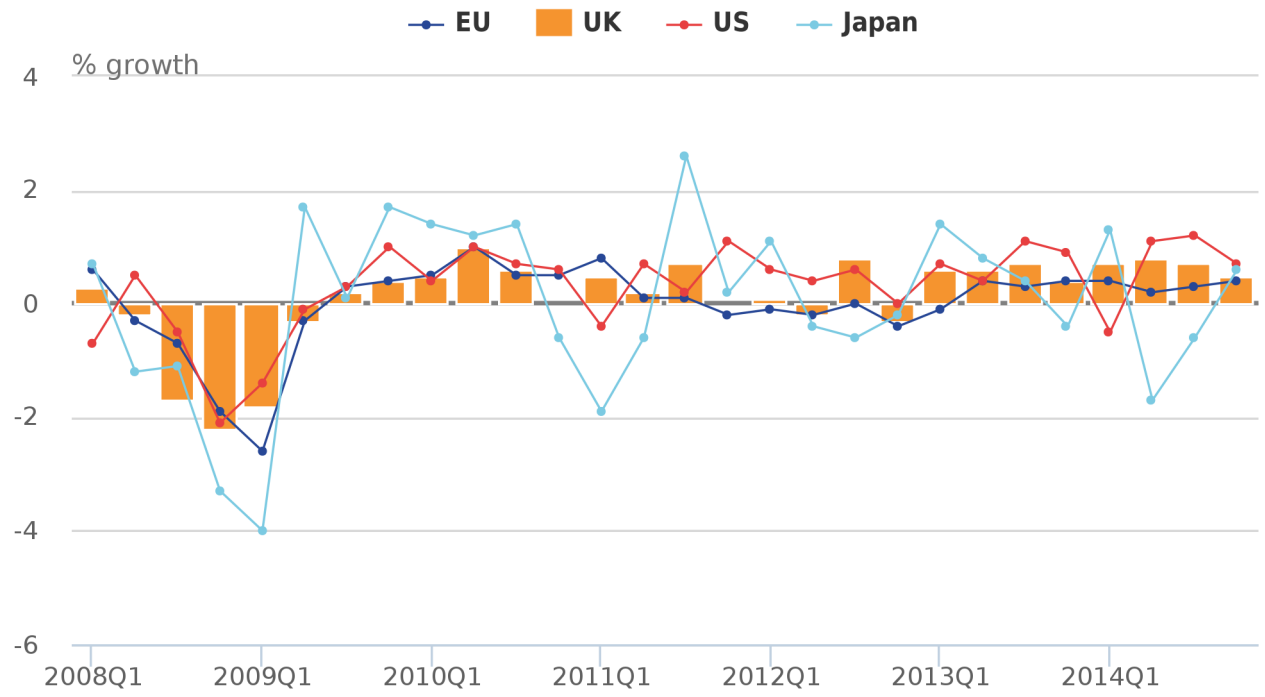
chained volume, seasonally adjusted

	EU28	Eurozone	France	Germany	Japan	United Kingdom	United States of America
Q3 2012	0.0	-0.1	0.2	0.1	-0.6	0.8	0.6
Q4 2012	-0.4	-0.4	-0.2	-0.4	-0.2	-0.3	0.0
Q1 2013	-0.1	-0.4	0.0	-0.4	1.4	0.6	0.7
Q2 2013	0.4	0.3	0.7	0.8	0.8	0.6	0.4
Q3 2013	0.3	0.2	-0.1	0.3	0.4	0.7	1.1
Q4 2013	0.4	0.2	0.3	0.4	-0.4	0.4	0.9
Q1 2014	0.4	0.3	0.0	0.8	1.3	0.7	-0.5
Q2 2014	0.2	0.1	-0.1	-0.1	-1.7	0.8	1.1
Q3 2014	0.3	0.2	0.3	0.1	-0.6	0.7	1.2
Q4 2014	0.4	0.3	0.1	0.7	0.6	0.5	0.7

Source: Office for National Statistics

Figure 15: International GDP growth rates, quarter-on-quarter

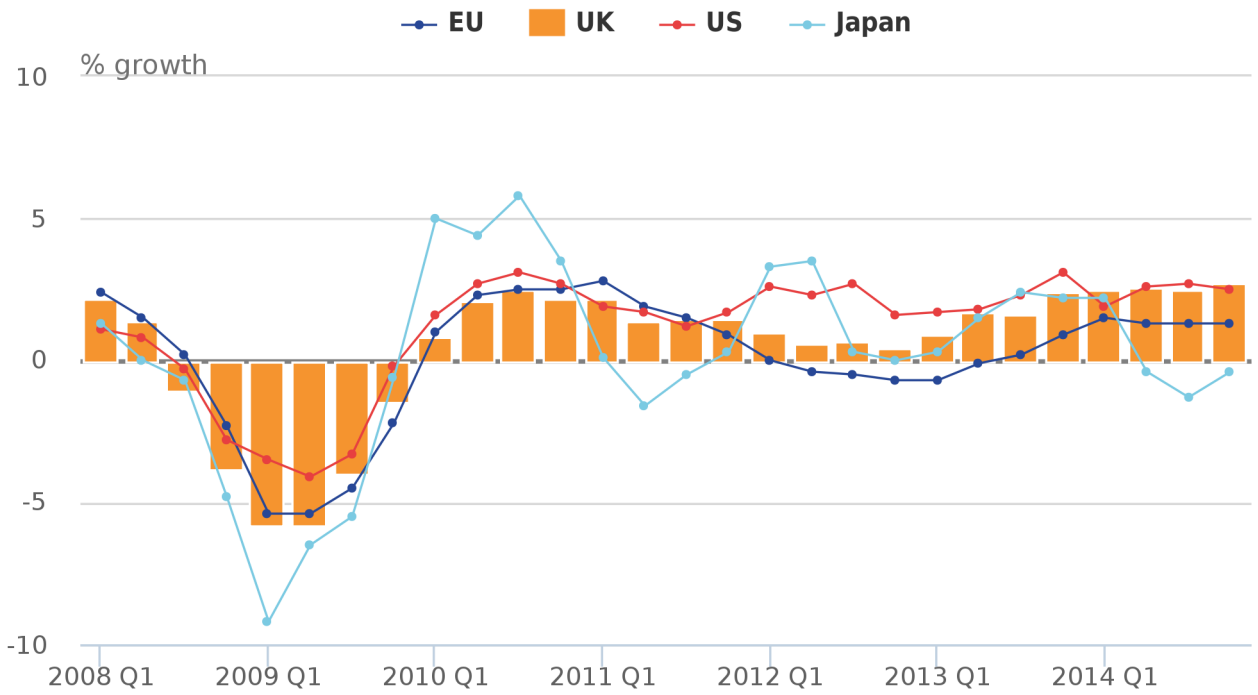
Chained volume measure, seasonally adjusted



Source: Office for National Statistics

Figure 16: International GDP growth rates, quarter on same quarter a year ago

Chained volume measure, seasonally adjusted

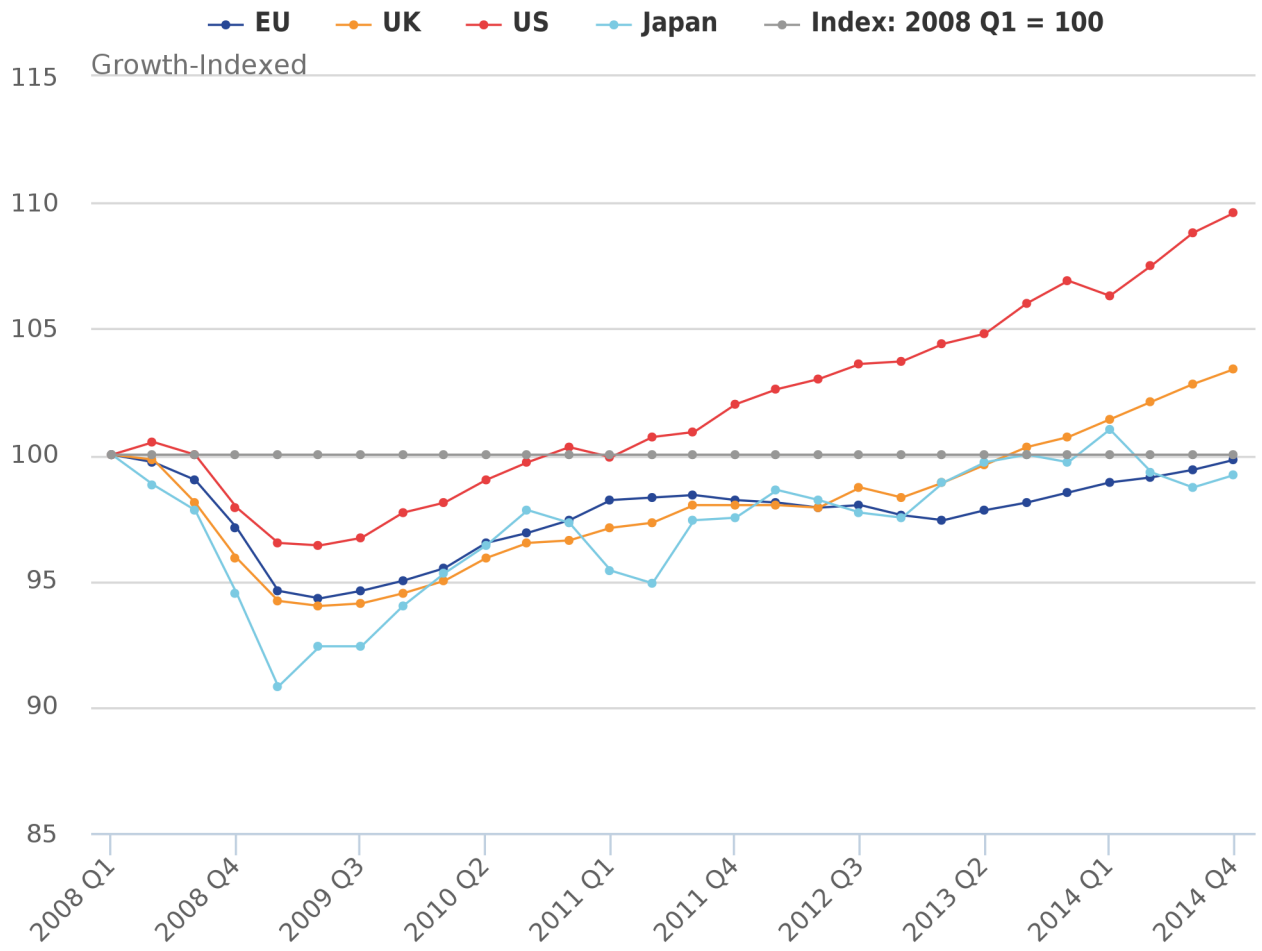


Source: Office for National Statistics

Figure 17 shows GDP for the UK, EU, the United States of America and Japan, all indexed to Q1 2008 (the pre-downturn peak in the UK) to allow comparison of each since that period.

Figure 17: International GDP growth rates, quarter-on-quarter, indexed to Q1 2008=100

Chained volume measure, seasonally adjusted



Source: Office for National Statistics

More detailed information on these estimates can be found on the Eurostat website. Information on the estimates for the United States of America can be found on the Bureau of Economics Analysis website, while information on the estimates for Japan can be found on the Japanese Cabinet Office website.

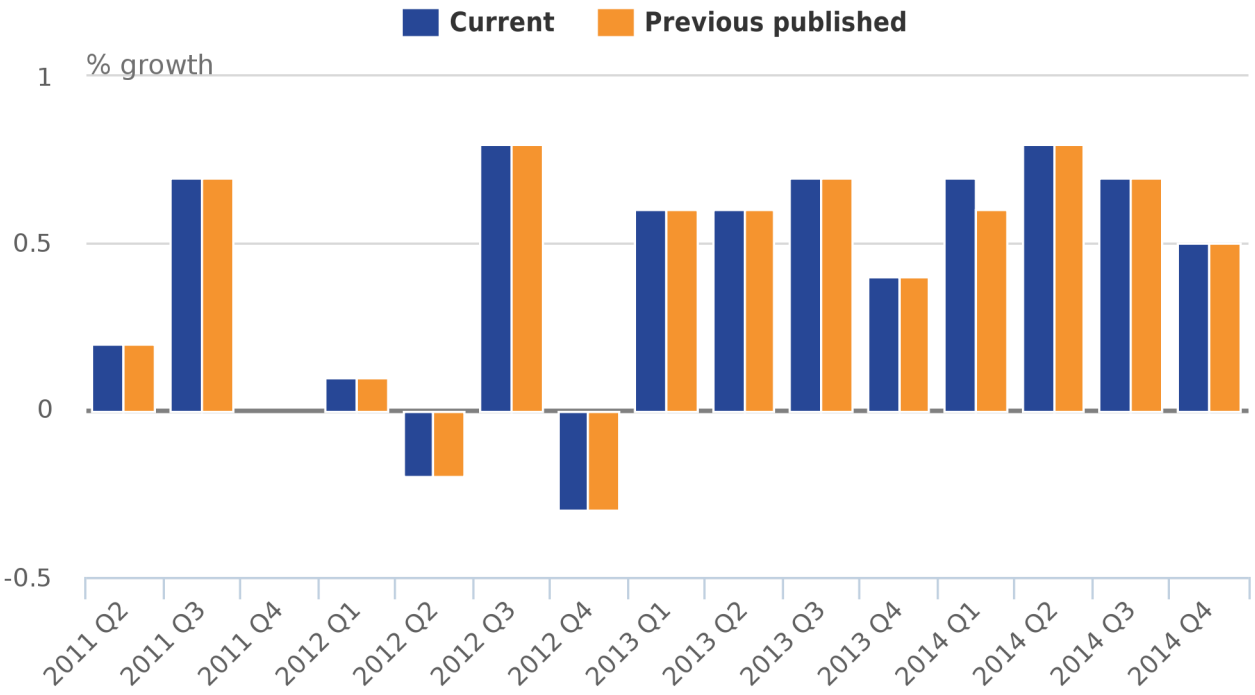
10. GDP quarterly revisions

GDP and components, previously published on 27 January 2015

Figure 18 shows quarterly revisions between latest and previously published estimates of GDP. The periods open for revision in this release are Q1 2014 onwards.

Figure 18: Gross domestic product, quarter-on-quarter growth

chained volume measure, seasonally adjusted



Source: Office for National Statistics

Detailed revisions for the three GDP approaches:

- Output revisions are shown in Annex E (41.5 Kb Excel sheet) of this release
- Expenditure revisions are shown in Annex F (38 Kb Excel sheet) of this release
- Income revisions are shown in Annex G (33.5 Kb Excel sheet) of this release

11. Background notes

1. **Release policy**

   This release includes data available up to 13 February 2015. Data are consistent with the Index of Production statistical bulletin published on 10 February 2015 and the current price trade in goods data within the UK Trade statistical bulletin published on 6 February 2015.

2. **Output in the construction industry**

   On 11 December 2014 the UK Statistics Authority announced its decision to suspend the designation of Construction Price and Cost Indices. As a result the UK Statistics Authority announced its decision to suspend the designation of Construction Output and New Orders as National Statistics. The letter from the UK Statistics Authority to the National Statistician suspending the designation of BIS Construction Price and Cost Indices as National Statistics is available on the ONS website.

   ONS has released a statement regarding this de-designation on ONS' website.

3. **Release content and context**

This release includes the second estimate of GDP. Data content for each successive release of GDP varies according to availability.

The Preliminary Estimate of GDP is based on output data alone. These are based on survey estimates for the first two months of the quarter with estimates for the third month of the quarter based on forecasts using early returns from businesses. Other (non-survey based) data used in the compilation of the output approach are also based on forecasts.

For the Second estimate of GDP output estimates, based on survey data, are available for all three months of the quarter, in addition to other significant data sources. Estimates of the expenditure and income approaches to measuring GDP are also available in this release based on a combination of limited survey data, other data sources and forecasts.

For the Quarterly National Accounts (QNA) release, output survey data are available for all three months of the quarter, along with most other data sources. For the expenditure and income approaches to measuring GDP, more extensive survey data are available, in addition to other data sources and a more limited use of forecasts.

After this release, the current quarter will be subject to revision in accordance with National Accounts revisions policy (43.3 Kb Pdf) as further data, annual benchmarks and methodological improvements are implemented. More information on the annual data and benchmarks included in this release can be found in the Quarterly Revisions section of this bulletin.

For more information on the different estimates of GDP, ONS has released a video explaining these differences.

4. **Forthcoming changes**

ONS has today announced that Quarterly National Accounts data consistent with the 2015 Blue and Pink Books, due to be published on 30 June, will now be published on 30 September. ONS has released a statement giving more detail regarding this change in publication dates.

As previously announced, the open period in the March 2015 QNA release will be 2014 only.

In Spring 2015 ONS will consult more widely on options for the revisions periods in future QNA rounds as part of a wider consultation on the National Accounts five year work plan.

5. **Continuous improvement of GDP: sources, methods and communication**

The UK Statistics Authority has published on 25 February two new assessment reports on the Annual and Quarterly National Accounts and Supply and Use Tables and Input-Output Tables. These are available on the UK Statistics Authority website.

6. **GNI estimates on an ESA 95 basis**

In September 2014 the United Kingdom National Accounts moved from being compiled and published on a European System of Accounts 1995 (ESA 95) basis to the ESA 2010 basis. Full details of these changes can be found on ONS' website (814.6 Kb Pdf) . As a result of these changes the UK Gross National Income (GNI) figures also increased in line with the changes in data sources, coverage and methodology. GNI figures are used by many other government departments and external bodies to form the basis of targets and metrics. For example there is a NATO target that 2% of GDP is spent on defence and a target that 0.7% of UK GNI will be spent on international aid. To smooth the transition from ESA 95 to ESA 2010 for such targets, ONS published an analysis (34 Kb Excel sheet) in October 2014 showing how the June 2014 ESA 95 GNI could be mapped to the September 2014 ESA 2010 GNI.

ONS has committed to continuing to provide an analysis of GNI on an ESA 95 basis for the calendar year 2014 although the process to produce this figure is less certain than the previous method. This figure will be produced using the previous ESA 95 analysis for the calendar year 2012 as the starting point. Using the growth of the ESA 2010 GNI estimates between 2012 and 2013 and then 2013 and 2014 (which are published in the March 2015 Quarterly National Accounts), ONS will apply these growth rates to the old ESA 95 GNI level for 2012 to produce and publish 2013 and the first estimate of 2014 annual GNI on an ESA 95 basis alongside the Q4 2014 GDP estimates on 31 March 2015. This will be updated at the end of

September 2015 to reflect any further revisions to the UK GNI return made to Eurostat as a result of the Blue Book 2015 process.

7. **National Accounts methodology and articles**

   ONS regularly publishes methodological information and articles to give users more detailed information on developments within the National Accounts; supplementary analyses of data to help users with the interpretation of statistics and guidance on the methodology used to produce the National Accounts.

   ONS has produced an article 'Interpreting the Recent Behaviour of the Economy' available on ONS website to aid interpretation of movements in the economy.

8. **National Accounts classification decisions**

   The UK National Accounts are produced under internationally agreed guidance and rules set out principally in the European System of Accounts (ESA 2010) and the accompanying Manual on Government Deficit and Debt- Implementation of ESA 2010-2014 edition (MGDD).

   In the UK, ONS is responsible for the application and interpretation of these rules. ONS therefore makes classification decisions based upon the agreed guidance and rules, and these are published on the ONS website.

9. **Economic context**

   ONS publishes a monthly Economic Review discussing the economic background, giving economic commentary on the latest GDP estimate and other ONS economic releases. The next article will be published on 4 March 2015.

10. **Basic quality information for GDP statistical bulletin**

    A Quality and Methodology Information report (518.9 Kb Pdf) for this Statistical Bulletin can be found on ONS website.

11. **Key quality issues**

    Common pitfalls in interpreting series: Expectations of accuracy and reliability in early estimates are often too high. Revisions are an inevitable consequence of the trade-off between timeliness and accuracy. Early estimates are based on incomplete data.

    Very few statistical revisions arise as a result of ‘errors’ in the popular sense of the word. All estimates, by definition, are subject to statistical ‘error’ but in this context the word refers to the uncertainty inherent in any process or calculation that uses sampling, estimation or modelling. Most revisions reflect either the adoption of new statistical techniques or the incorporation of new information which allows the statistical error of previous estimates to be reduced. Only rarely are there avoidable ‘errors’ such as human or system failures and such mistakes are made quite clear when they do occur.

12. **Reliability**

    Estimates for the most recent quarters are provisional and are subject to revision in the light of updated source information. ONS currently provides an analysis of past revisions (244.6 Kb Pdf) in the GDP and other Statistical Bulletins which present time series.

    ONS has a webpage dedicated to revisions to economic statistics which brings together ONS work on revisions analysis, linking to articles, revisions policies and key documentation from the Statistics Commission's report on revisions.

    Revisions to data provide one indication of the reliability of key indicators. Tables 3 and 4 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. An asterisk (*) shows if the result of the test is significant.

13. **Revisions to GDP estimates**

    Table 3 shows the revisions to month 1 (preliminary) and month 2 (second) estimates of GDP. The analysis of revisions between month 1 and month 2 uses month 2 estimates published from February 2010 (Q4 2009) to November 2014 (Q3 2014). The analysis of revisions between month 2 and month 3 (third

estimate of GDP) uses month 3 estimates published from March 2010 (Q4 2009) to December 2014 (Q3 2014).

Table 3: Revisions to early estimates of GDP growth

Revisions to GDP growth	Estimate in latest period %	Revisions between early estimates of GDP growth (quarterly, CVM)	
		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	0.05

Source: Office for National Statistics

Table 4: Revisions to month 3 estimates of GDP growth

	Estimate in latest period %	Revisions between first publication and estimates three years later	
		Average over the last five years	Average over the last five years without regard to sign (average absolute revision)
GDP growth (quarterly, CVM)	0.5	-0.07	0.39

Source: Office for National Statistics

Revisions triangles for the main components of GDP from expenditure, output and income approaches and spreadsheets containing revisions triangles (real-time databases) of estimates from 1992 to date and the calculations behind the averages in both tables are available on the ONS website.

An article titled 'Revisions to GDP and Components' (513.5 Kb Pdf), published on 28 January 2014, is available on ONS website.

14. **Balancing GDP**

Information on the methods ONS uses for balancing the output, income and expenditure approaches to measuring GDP can be found on the ONS website.

The different data content of the three approaches dictates the approach taken in balancing quarterly data. In the UK, there are far more data available on output than in the other two approaches. However, in order to obtain the best estimate of GDP (the published figure), the estimates from all three approaches are reconciled to produce an average.

Annually, the estimates from all three approaches are reconciled through the creation of Input-Output Supply and Use tables for the years for which data are available.

For years in which there is no Supply and Use balance, a Statistical Discrepancy exists which reflects the differences between the published headline estimate of GDP and the expenditure and income estimates.

For all periods, the expenditure and income estimates are aligned to the published headline GDP figure. Although annual data is aligned for balanced years, there will still be quarterly differences for balanced and post balanced years, due to timing and data content issues. These are dealt with by means of explicit alignment adjustments which are applied to specific components (gross operating surplus of private non-financial corporations in the income approach and changes in inventories in expenditure) to align the three approaches. As these are purely quarterly discrepancies, the alignments sum to zero over the year and are published explicitly in the GDP statistical bulletins. They are also published as “of which” items within the specific components, to enable users to ascertain the underlying picture.

Alignment adjustments typically have a tolerance of +/-£2,000 million on any quarter. However, in periods where the data sources are particularly difficult to balance, slightly larger alignment adjustments are sometimes needed.

The size and direction of the quarterly alignment adjustments in Q4 2014 indicate that in this quarter the level of expenditure was lower than that of output while the level of income was higher than that of output.

15. **Further information**

Latest copies of this and other ONS releases are available under Publications on ONS website. ONS has also produced a [short guide to the UK National Accounts (105.5 Kb Pdf)](http://www.ons.gov.uk/ons/guide-method/method-quality/specific/economy/national-accounts/articles/uk-national-accounts---a-short-guide-2013.pdf "UK National Accounts - a short guide 2013".

Details of the policy governing the release of new data are available from the media relations office' Also available is [a list of ministers and officials who have pre-publication access](http://www.ons.gov.uk/ons/rel/naa2/second-estimate-of-gdp/q4-2014/pra-pre-release-access-q4-2014-second-estimate-of-gdp.html "PRA pre release access Q4 20-14 Second Estimates of GDP) to the contents of this bulletin.

16. **Following ONS**

You can follow ONS on Twitter and Facebook.

17. 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.