

Article

# Impact of Blue Book 2016 changes on current price and chained volume measure Gross Domestic Product estimates, 1997 to 2014

Details current price changes along with other improvements which impact only on real GDP. Also presents a first look at the quarterly path of GDP in Blue Book 2016 for 2012 to 2014.

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## Table of contents

1. [Executive summary](#)
2. [Introduction](#)
3. [Summary](#)
4. [Contributors to the revisions in current price and real GDP, 2012 to 2014](#)
5. [Plans for future updates](#)

# 1. Executive summary

This article details estimates of the total impact of all the improvements to current price and chained volume measure (CVM or “real”) gross domestic product (GDP) up to 2014, planned for June 2016.

The impacts of improvements for the period 1997 to 2011 have already been announced in the article [Impact of Blue Book 2016 changes on chained volume measure gross domestic product estimates, 1997 to 2011](#), published on 23 March 2016. This article focuses on the period from 2012 to 2014 and brings together both current price and CVM revisions along with the quarterly path. There are also some minor changes to the figures previously announced for 1997 to 2011 following further quality assurance.

All of the methodological improvements for the period 2012 to 2014 have already been described in articles covering the period 1997 to 2011 (see section 7 for links), but this later period also includes the impact of new data.

The total package of current price GDP changes increases the size of the economy in 2014 by approximately £5.3 billion, 0.3% of GDP.

There are both upward and downward revisions to real GDP growth for the years 2012 to 2014, with upward revisions of 0.1 and 0.2 percentage points in 2012 and 2014 respectively but a downward revision of 0.2 percentage points in 2013. Average growth of real GDP over the period from 1998 to 2014 remains unchanged at 2.0% per year.

Quarter on quarter real GDP growth between 2012 and 2014 has been revised up by 0.03 percentage points per quarter on average. However, over the whole period from Quarter 2 (April to June) 1997 to Quarter 4 (October to December) 2014 there is a very small average revision of under -0.01 percentage points per quarter. Over the same period the absolute revision to quarter on quarter real GDP growth is 0.10 percentage points.

The peak to trough of the 2008 to 2009 economic downturn has been revised from -6.1% to -6.3% and GDP returned to pre-economic downturn levels in Quarter 3 (July to September) 2013, 1 quarter later than previously estimated.

## 2. Introduction

This article is part of a series describing [changes to National Accounts](#), detailing the improvements which will be made in June 2016 to ensure that the UK National Accounts continue to provide the best possible framework for analysing the UK economy and for comparing it with those of other countries.

The article of 24 February 2016, [Impact of Blue Book 2016 Changes on Current Price Gross Domestic Product, 1997 to 2011](#) described improvements being made to the UK National Accounts in current price terms. That article included methodological changes such as improvements to imputed rental estimates being made as part of the regular annual update of the UK National Accounts (Blue Book).

Current price revisions will, in most cases, feed through to affect real GDP as well, although there are a few exceptions. As previously described, the improvement to imputed rental is one such change where, because the main impact is on the prices being used, the current price revisions are larger than the real GDP revisions. This is because the revisions to the prices used in the calculation of the current price estimates are largely offset by the revisions to the deflator used in the construction of the chained volume measure (CVM) figures.

The second impact article [Impact of Blue Book 2016 changes on Chained Volume Measure Gross Domestic Product Estimates, 1997 to 2011](#), published on 23 March 2016 provided a summary of the changes being implemented in Blue Book 2016 which impact on real GDP between 1997 and 2011.

This article extends the data series from both previous articles to provide current price and CVM estimates, consistent with the methodological changes previously described, for all periods from 1997 to 2014. Descriptions of these methodological changes and other amendments will not be repeated here, but a link to the previous articles can be found in section 7.

The total impacts on GDP of the current price changes are included in [Annex A](#) (detailed) and [Annex B](#) (summary), but explanations of the changes to 1997 to 2011 will not be repeated here as these data have not been revised since the 24 February article. Approximate impacts on annual current price GDP growth rates by type of change for the years 2012 to 2014 are provided in section 4.

Full details of the annual contributions to real GDP by each CVM expenditure component (shown to the nearest 0.1 percentage point) are in [Annex C](#). For the period 1998 to 2011, there have been some minor changes to the CVM estimates previously published on 23 March 2016, but the only change which shows in the annual growth rates is for 2000 where the growth rate is now 3.7% rather than the indicative estimate of 3.8%.

Quarterly current price and real GDP growth rates (see [Annexes D and E](#) respectively) are also being extended to include 2012 to 2014 in this article and this will enable you to see the impacts that the annual revisions have had on the quarterly path of GDP during this period. The publication of both current price and real GDP allows for the calculation of the GDP implied deflator. The annual implied deflator is shown in [Annex F](#) and the quarterly implied deflator in [Annex G](#) for completeness. These implied deflator tables also show some minor changes to the figures provided on 23 March 2016 following further quality assurance, but the changes are small and do not change the economic story being presented.

It is possible that the quarterly path presented in this article will change slightly when the UK National Accounts are published on 30 June 2016 as the addition of the annual level for 2015 and the resultant quarterly path in 2015 can alter the quarterly path of earlier years through re-seasonal adjustment.

All CVM figures have also been adjusted as a result of the change of reference year and last base year from 2012 to 2013. This article therefore focuses on the revisions to growth which will not be affected by rebasing, rather than describing changes to the levels of real GDP which will change when the reference year is advanced by 1 year.

We had previously planned to provide an early indication of gross national income (GNI) estimates for 2010 to 2014 as part of this article. However, further time is needed to quality assure fully and finalise these estimates. GNI estimates for 2010-14 will be published on 7 June 2016 in the article titled 'Detailed assessment of changes to Balance of Payments, 1997 to 2014'.

### 3. Summary

The latest estimates of the impact of the planned changes on GDP are shown in Table 1.

**Table 1: Latest estimates of the impact of the planned changes on annual GDP, 1997 to 2014**

Indicator	Impact
Level of GDP in current prices	See Annex A
Near-final estimate of the impact of all changes to the level of annual GDP in current prices	Average revision to the level of GDP 1997 to 2014 is +3.3% (£38.4 billion)
Growth of GDP in current prices	See Annex A and Annex B
Near-final estimate of the impact of all changes to the growth of annual GDP in current prices	Average revision to GDP growth in current prices 1998 to 2014 is -0.35 percentage points (ranging from -1.2 to +0.1 percentage points)
Real measure of GDP	See Annex C
Near-final estimate of the impact on growth in annual real GDP (chained volume measure)	Average revision to real GDP annual growth 1998 to 2014 is -0.03 percentage points (ranging from -0.5 to +0.4 percentage points)
GDP implied deflator	See Annex F
Near-final estimate of the impact on growth in annual GDP deflator	Average revision to annual growth of the GDP deflator 1998 to 2014 is -0.32 percentage points (ranging from -1.6 to 0.0 percentage points)

Source: Office for National Statistics

## Annual current price GDP

The package of GDP changes in Blue Book 2016, over the period from 1998 to 2014, reduces the average annual growth in current price GDP by 0.35 percentage points. Current price GDP growth now averages 4.0% per annum in Blue Book 2016.

## Annual real GDP

The package of real GDP changes being presented today, over the period 1998 to 2014, have the combined impact of very slightly reducing the average growth of real GDP, by around 0.03 percentage points, but to one decimal place the average growth remains at 2.0% per annum in Blue Book 2016, the same as in Blue Book 2015.

However, the changes do impact on the real GDP growth rates by varying amounts between years (see [Annex C](#) for more details). Revisions to the growth rate of annual real GDP range from -0.5 percentage points in 2011 to +0.4 percentage points in 2010. The main reasons for the revisions in 1997 to 2011 were described in the article [Impact of Blue Book 2016 changes on Chained Volume Measure Gross Domestic Product Estimates, 1997 to 2011](#), published on 23 March 2016, and section 4 in this article continues this analysis for the period 2012 to 2014. Work continues to decompose the overall revisions for each expenditure component into the exact contributions by revision type and this will be published in the article accompanying the UK Quarterly National Accounts Quarter 1 (January to March) 2016 release on 30 June 2016.

Generally though the main reasons for revisions to real GDP in 2012 to 2014 are the same as the revisions described in section 4 for current price GDP. For chained volume measures (CVMs) these reasons also include the implementation of improvements to the measurement of the output measure of GDP from the industry review process and changes to social transfers in kind within general government final consumption expenditure (see section 6 for more details).

## Quarterly GDP

As a result of changes to the level of annual GDP, the GDP quarterly path also needs adjusting to achieve the new annual levels. The quarterly path revisions to current price GDP are shown in [Annex D](#) and the real GDP quarterly path revisions are in [Annex E](#).

The average revision to quarter on quarter real GDP growth introduced at this Blue Book is -0.01 percentage points over the period from Quarter 2 (April to June) 1997 to Quarter 4 (October to December) 2014. Over the same period the absolute revision to quarter on quarter real GDP growth is 0.10 percentage points. The peak to trough of the 2008 to 2009 economic downturn has been provisionally revised from -6.1% to -6.3%. GDP returned to pre-economic downturn levels in Quarter 3 (July to September) 2013, 1 quarter later than previously estimated.

For the period 1997 to 2014, quarterly GDP revisions reflect new annual data and improved methods along with a reassessment of the seasonal adjustment of each component within GDP; with the seasonal adjustment changes being much smaller in impact than the annual changes. The quarterly path presented in [Annex E](#) is provisional at this stage and is subject to further change when annual GDP for 2015 is added to the time series.

## 4. Contributors to the revisions in current price and real GDP, 2012 to 2014

All methods improvements and other changes referred to in this section have previously been described in the articles of 24 February and 23 March 2016 which can be found in section 7 of this article.

### 2012

In 2012, annual current price GDP growth has been revised up by 0.1 percentage point from 2.8% to 2.9%. The main contributions to the revisions to growth are shown in Table 2.

**Table 2: Contributions to 2012 annual current price UK GDP revisions to growth**

Revision	Percentage point impact on current price GDP growth
Latest available update to internal and external data sources	0.1
Imputed rental	0.1
Non-EU imports of natural gas	-0.1
Total revision	0.1

Source: Office for National Statistics

Notes:

1. contributions may not sum to the total revision due to rounding

The largest contributions to the overall current price revision are from updates to internal and external data sources used in the compilation of GDP (+£1.4 billion) and the imputed rental change (contributing £1.1 billion to the change in 2012). Internal data sources updated in 2012 include the Annual Business Survey (ABS) for variables including output, intermediate consumption, gross fixed capital formation and inventories. The major external data source update in 2012 was the financial year returns for 2012/13 from Her Majesty's Revenue and Customs (HMRC) for both compensation of employees (COE) and gross operating surplus (GOS).

In 2012, annual real GDP growth has also been revised up by 0.1 percentage points also mainly due to the updates to external data sources.

## 2013

In 2013, annual current price GDP growth has been revised down by 0.3 percentage points from 4.2% to 3.9%. Almost the entire revision is due to the inclusion of new updated data from internal and external data sources, with only limited impacts coming from any methodological changes.

**Table 3: Contributions to 2013 annual current price UK GDP revisions to growth**

Revision	Percentage point impact on current price GDP growth
Latest available update to internal and external data sources	-0.3
Imputed rental	0
Non-EU imports of natural gas	0
Total revision	-0.3

Source: Office for National Statistics

Notes:

1. contributions may not sum to the total revision due to rounding

In particular new data within household final consumption expenditure has reduced current price GDP growth in 2013 by 0.2 percentage points and trade in goods and services has contributed a further 0.1 percentage point reduction. Household final consumption expenditure was revised downwards due to the inclusion of annual regulatory data for both life and general insurance; this reduced household final consumption expenditure by £3.3 billion. Other data source updates include the ABS (2013 as per 2012), data from HMRC for COE and GOS (for financial years 2012/13 and 2013/14) and revisions to the Prodcom survey. In 2013, annual real GDP growth has also been revised down by 0.2 percentage points for the same reasons as the current price revisions.

## 2014

In 2014, annual current price GDP growth has been revised up by 0.1 percentage point from 4.7% to 4.8%. The main contributions to the revisions to growth are shown in Table 3.

**Table 4: Contributions to 2014 annual current price UK GDP revisions to growth**

Revision	Percentage point impact on current price GDP growth
Latest available update to internal and external data sources	-0.3
Imputed rental	0.1
Non-EU imports of natural gas	0.2
Total revision	0.1

Source: Office for National Statistics

Notes:

1. contributions may not sum to the total revision due to rounding

The 0.2 percentage point contribution of the non-EU imports of natural gas is because the 2014 current price figures published in the Quarterly National Accounts of 23 December 2015 already included the change in data source for 2014, but not for earlier years, in line with the [National Accounts revisions policy](#). The impact on 2013 current price levels at Blue Book 2016 is downwards, which causes an upward revision to growth into 2014 for trade in goods. In addition, the methodological change to imputed rental is showing stronger growth into 2014 than the old methodologies and data sources.

However, these upward revisions are almost offset by a negative contribution to growth from the inclusion of updated internal and external data sources and the removal of balancing adjustments applied in the quarterly GDP rounds. In particular, there are downward revisions in household final consumption expenditure due to the removal of positive quarterly round balancing adjustments, and upward revisions in gross capital formation because negative quarterly round balancing adjustments have been removed. This is a normal part of the annual supply and use balancing process where the greater data content annually allows for a reassessment (and often removal) of previous quarterly round balancing adjustments.

Annual data sources updated for 2014 include the ABS, data from HMRC for COE and GOS (2013/14 financial year), Prodcom survey data (as per 2013), the international trade in services survey, Department for the Environment, Food and Rural Affairs (DEFRA) provide agriculture data and Department for Communities and Local Government (DCLG) provide pensions data.

In 2014, annual real GDP growth has been revised up by 0.3 percentage points from 2.9% to 3.1%, in part for the same reasons as shown in Table 4, but additionally CVM gross fixed capital formation data have been revised higher due to an annual ABS data source update.

## 5. Plans for future updates

This article is the third in a series of impact articles ahead of the Quarterly National Accounts consistent with Blue Book 2016 publication on 30 June 2016. The focus here is on the years 1997 to 2014 for current price and real GDP changes and the quarterly path of GDP for the same periods.

Table 5 gives a schedule for the remaining articles leading up to the publication of Blue Book 2016 on 29 July 2016. The outline for the full publication timetable is as follows.

**Table 5: Publication schedule for Blue Book and Pink Book 2016**

<b>Content of article</b>	<b>Date of publication</b>
Detailed assessment of changes to Sector and Financial Accounts, 1997 to 2014	Tuesday 7 June 2016
Detailed assessment of changes to Balance of Payments, 1997 to 2014	Tuesday 7 June 2016
Quarterly National Accounts Quarter 1 (January to March) 2016 (consistent with Blue Book 2016)	Thursday 30 June 2016
Balance of Payments Quarter 1 (January to March) 2016 (consistent with Pink Book 2016)	Thursday 30 June 2016
Impact of changes in the national accounts and economic commentary for Quarter 1 (January to March) 2016	Thursday 30 June 2016
Blue Book 2016	Friday 29 July 2016
Pink Book 2016	Friday 29 July 2016

Source: Office for National Statistics

## 6. Background notes

1. Details of the [policy governing the release of new data](#) are available from the [UK Statistics Authority](#) website.

### 2. References

[Blue Book and Pink Book 2016 changes – various articles](#)

[Methodological improvements to National Accounts for Blue Book 2016: Imputed rent](#)

[National Accounts articles, Methodological improvements to National Accounts for Blue Book 2016: Market /non-market output \(P.131/P.132\) and social transfers in kind \(D.631/D.632\) for government](#)

[National Accounts articles: The UK Flow of Funds Project: Improvements to the Sector and Financial Accounts](#)

[Impact of Blue Book 2016 Changes on Current Price Gross Domestic Product Estimates, 1997 to 2011](#)

[Impact on GDP CVM estimates 1997-2011](#)

[Detailed assessment of changes to Balance of Payments annual estimates 1997-2011](#)

[Detailed assessment of changes to Sector and Financial Accounts annual estimates 1997-2011](#)

[Water transport industry review: 2016](#)

[Postal and courier activities industry review: 2016](#)