

National Accounts Articles – Impact of Blue Book 2016 Changes on Current Price Gross Domestic Product Estimates, 1997 to 2011

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Executive summary

This article details estimates of the total impact of all the improvements to current price Gross Domestic Product (GDP) planned for June 2016.

An initial summary of the changes for Blue Book 2016 has already been announced in the article [Latest developments to National Accounts and Balance of Payment: Changes to be implemented for Blue Book 2016 and Pink Book 2016](#), published on 26 November 2015.

This article brings together all the methodological and data improvements which impact on current price GDP for the period 1997 to 2011. The improvements described in this article will also be applicable to subsequent years, but these later years are additionally subject to regular data updates and other methodological developments, which will be presented in future articles as detailed in Table 1.

The package of current price GDP changes being presented today, over the period 1997 to 2011, have the combined impact of increasing the level of current price GDP in 2011 by approximately £8.9 billion, around 0.5%, although revisions to levels in earlier years are larger. Average annual current price GDP growth between 1997 and 2011 has been revised downwards by 0.5 percentage points from 4.5% per year to 4.0%.

The main source of revision in Blue Book 2016 is from improvements to the methods used to estimate imputed rental, which is the value to home owners of their dwellings. The revisions seen to current price GDP are mainly due to increases in price rather than changes in volumes, and therefore chained volume measure estimates of GDP in Blue Book 2016 will not be revised to the same extent as the current price revisions.

1 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.

An initial summary of the changes for Blue Book 2016 has already been announced in the article [Latest developments to National Accounts and Balance of Payment: Changes to be implemented for Blue Book 2016 and Pink Book 2016](#), published on 26 November 2015. At the time of publishing we said that further issues may arise which might result in a change to the scope. 3 such issues have arisen and this article has been updated on 24 February 2016 to add to the scope the changes to take on the latest FDI Benchmark, a correction to the measurement related to second homes and a correction/improvement to the measurement of shares and bonds. None of these changes impact on GDP at all so they are not described further within this impact article.

This first article will focus on the current price gross domestic product (GDP) changes for the period 1997 to 2011. Subsequent articles, as listed in Table 1, will focus on chained volume

measure (CVM) GDP estimates, sector and financial accounts estimates, balance of payments estimates, and current price and CVM GDP for the more recent period from 2012 to 2014.

The UK has received notification that the large package of improvements implemented in September 2015 means that all the outstanding gross national income (GNI) reservations on a European System of Accounts 1995 (ESA 1995) basis have now been lifted, although we are making a few small further improvements this year in relation to previous reservations. The remainder of the improvements being described in this article are being made as part of the regular annual update of the UK National Accounts (Blue Book). The full dataset will be published as part of the June 2016 Quarterly National Accounts update.

This article provides a summary of each of the improvements being implemented in Blue Book 2016 along with the estimated impact on annual current price GDP between 1997 and 2011. The total impacts of the changes which affect GDP are included in Annex A with full detail for each change shown to the nearest £0.1 billion. A comparison of the new and current growth rates for annual current price GDP growth are shown in Annex B. For European Union (EU) budget purposes the period from 1997 to 2009 is closed to revision so changes will not affect the UK's contribution to the EU budget for that period.

For each Blue Book 2016 change the range of impacts and the approximate impact on annual current price GDP growth rates across all years from 1997 to 2011 are provided in the summary.

These figures are still indicative at this stage and final quality assurance is currently being undertaken. A finalised version of these data will be provided in an updated article on 20 May 2016 ahead of publication in the UK National Accounts in June 2016.

Figures for 2012 and more recent periods, and figures on a CVM basis are not yet available. CVM data are adjusted so that the effects of price changes are removed, and these data are not processed until closer to the time of publication in order to take account of new data in the usual manner. Plans are to publish both current price and CVM data for 2012 to 2014 on 20 May 2016 as set out in Table 1, with CVM data for 1997 to 2011 published on 23 March 2016.

2 Summary

The Blue Book 2016 changes being announced today have the combined impact of increasing the level of current price GDP in 2011 by approximately £8.9 billion, around 0.5%, although revisions to levels in earlier years are larger. Average annual current price GDP growth between 1997 and 2011 has been revised downwards by 0.5 percentage points from 4.5% per year to 4.0%. The impact of these changes is generally to increase the level of current price GDP, although the growth rate revisions vary for individual years (as shown in [Annex A](#)). Revisions to the growth rates of annual current price GDP range from -1.2 percentage points in 2010, to -0.1 percentage points in 1999 and 2001 (as shown in [Annex B](#)). It may seem counter-intuitive have an increasing level but decreasing growths. This is because the revisions to levels are largest in the earlier years, and as we move towards the more recent periods the increase in levels is smaller, which leads to downward revisions to growth.

The main driver of these revisions comes from improvements to the methods used to estimate imputed rental, which is the value to home owners of their dwellings. The revisions seen to current price GDP are due to increases in price rather than changes in volumes, and therefore chained volume measure estimates of GDP in Blue Book 2016 will not be revised to the same extent as the current price revisions. We will be able to show the impacts on CVM data of the changes to imputed rental, along with all the other changes in Blue Book 2016 for the period 1997 to 2011 on 23 March 2016.

We have also published 2 further articles on 24 February; a set of GDP neutral changes within government are described in the article [Methodological improvements to National Account for Blue Book 2016: Market/non-market output \(P.131/P.132\) and social transfers in kind \(D. 631/D.632\) for Government](#), and changes to the measurement of shares and bonds are described in the article [The UK Flow of Funds Project: Improvements to the Sector and Financial Accounts](#).

The following section provides more details on the individual improvements which impact on current price GDP in Blue Book 2016.

3 Methodological improvements to current price GDP

3.1 Imputed rental

Imputed rental is an estimate of the housing services consumed by households who are not actually renting their residence. Conceptually it is the amount that non-renters pay themselves for the housing services that they are producing. This is a legitimate and important component of GDP since the value represented by housing services should not depend upon whether they are consumed by an owner occupier or otherwise.

The current estimates of actual and imputed rentals are based on price information from the Living Costs and Food (LCF) survey. This is one of our household surveys receiving responses from around 5,000 households per year, including sample data from around 400 households living in rented accommodation each quarter. These data are used to calculate the average rental price. Department for Communities and Local Government (DCLG) data are then used for the volume estimate, measured by the estimated number of rooms. Current price estimates are obtained by multiplying the number of rooms by the average rental per room.

In this improvement the LCF data are being replaced with a much more comprehensive data source from the Valuation Office Agency (VOA) and using the average rental stratified by both region and dwelling type. These data are conceptually much closer to what we are trying to measure. VOA data cover England only, with similar data for Scotland and Wales being provided by their respective governments. More limited data from Northern Ireland is also used.

Additionally improvements have been made to the Consumer Price Indices for Housing (CPIH) during 2015 which could only be taken back to 2010 in Blue Book 2015, due to the data being delivered too late to be included in the pre 2010 “closed period” supply and use balancing. CPIH is the deflator source for both imputed and actual rentals. Further, while the imputed rental series is currently only consistent with the CPIH deflator from 2010 onwards, as part of the new method it will now be consistent back to 1997. This removes a previous discontinuity in current price growth in 2010, which means a larger impact on 2010 current price growth than any other year.

The result of these changes is to cause a level shift upwards in pre-2010 imputed rental data as the LCF data estimated a lower level of prices than the new sources. There is also a change in trend in the data pre-2010 because the new sources estimate weaker growth in the current price series, more in line with the CPIH price index. It must be emphasised that this is predominately a current price change and a change in the deflator. Unlike most current price revisions within Blue Book, the majority of the revision seen will not feed through directly into CVM estimates – though some change will still be seen due to the change in method. The reason for this is that the current price estimates are being

calculated using a new rental price multiplied by a very similar volume of dwellings, and then the CVM estimates are produced by deflating using the new CPIH values which also use the VOA data as a basis for their deflators.

The impact on the level of current price GDP from the imputed rental changes ranges from an increase of £15.1 billion in 2011 to an increase of £56.8 billion in 1997. The upward revisions to levels reduce towards the more recent periods but nevertheless this remains the single biggest contributor to the revisions in annual current price GDP growth rates as presented in [Annex B](#).

3.2 Exhaustiveness/concealed income activity adjustment

As part of a GNI ESA 1995 reservation improvements were implemented to the exhaustiveness adjustment for concealed income in Blue Book 2015, as described in the article [Methodological improvements to National Accounts for Blue Book 2015: Exhaustiveness](#). The revisions for 2008 onwards in Blue Book 2016 are as a result of the annual reassessment of the tax gaps analysis by Her Majesty's Revenue and Customs (HMRC), which in turn leads to revisions in our estimates of concealed income. There are also some smaller revisions pre-2008 as a result of a reassessment of how best to include concealed income adjustments within the Supply and Use tables, which required a small rebalancing.

The annual reassessment by HMRC and the rebalancing of Supply and Use tables have had very little impact on pre-2009 current price GDP levels, with all years from 1997 to 2008 showing an impact of less than +/-£0.1 billion. However, the impact is larger in more recent years, with an impact on current price GDP levels of -£1.0 billion in 2011. The impact on annual current price GDP growth between 1997 and 2011 is less than +/- 0.1 percentage points in any year.

3.3 Estimates of value added tax fraud

Scrutiny of estimates of non-complicit value added tax (VAT fraud) has led to improvements which are now being implemented. VAT fraud is thought to occur when individuals or corporations who under or non-report their respective salaries and profits to the tax authorities ("[Tax Evasion](#)") also choose to hold onto the VAT that they charge to non-complicit customers on their under or unreported activity. It is thought that by paying VAT on these transactions they would reveal the wider evasion. Because current estimates of tax evasion are at basic prices, meaning before the inclusion of taxes on products, this form of VAT fraud is not currently captured in the National Accounts.

To estimate the impact of VAT fraud, we start from the estimates of under-reporting and non-reporting of income. Under the reasonable assumption that such income (under appropriate conditions) is also not reported for VAT, and vice versa, these estimates imply a level of VAT fraud.

The impact on the level of current price GDP ranges from an increase of £1.1 billion in 1998 to an increase of £2.1 billion in 2011 with 2003 the only year which contributes a revision to the annual growth rates of GDP ([Annex B](#)) is 2003 where there is a contribution of 0.1 percentage points.

3.4 Insurance claims by non-profit institutions serving households

As part addressing a GNI ESA 1995 reservation improvements were implemented to the measurement of non-profit institutions serving households (NPISH) in Blue Book 2015, as

described in the article [Methodological improvements to National Accounts for Blue Book 2015: Non-Profit Institutions Serving Households](#). Further scrutiny has identified a small inconsistency in the treatment of insurance within the NPISH sector. Previous treatment included the insurance premiums and supplements paid by NPISH within the National Accounts, but not the claims received by the NPISH sector. This has now been completed with minimal impact on current price GDP.

The impact on the level of current price GDP range from -£0.4 billion to -£0.2 billion but there is no material impact on annual growth in any year.

3.5 Illegal activities

Again, as part of addressing a GNI ESA 1995 reservation improvements were implemented to the measurement of illegal activities in Blue Book 2014, as described in the article [Inclusion of illegal drugs and prostitution in the UK national accounts](#). As a further refinement, allowance has been made to reduce the estimates made for prostitution in household final consumption expenditure by a factor to reflect the holiday taken by prostitutes. The Dutch have estimated the total holidays to be 12 weeks per year, and we have applied the same factor to the UK estimates.

The impact on the level of current price GDP ranges from a decrease of £1.3 billion in 2011 to a decrease of £0.6 billion in 1997 and 1998. The impact on annual GDP growth between 1997 and 2011 is a maximum of +/- 0.1 percentage points in any year (Annex B).

3.6 Correction to gross fixed capital formation for improvements made to dwellings

During quality assurance of the gross fixed capital formation system an error in processing was identified. An adjustment factor was incorrectly being applied to the VAT rate in all years, and this is now being corrected at the first open period opportunity.

These reduce the level of current price GDP by a range from -£1.9 billion in 2009 to -£0.8 billion in 1997, but there is no material impact on annual growth in any year.

3.7 Correction to gross fixed capital formation for agricultural data

Discussions with the Department for Food, the Environment and Rural Affairs (DEFRA) have identified a processing error in the calculation of gross fixed capital formation for the agricultural sector. Disposals were not being deducted correctly, leaving a net figure which was being artificially inflated. This has now been corrected at the first open period opportunity.

The impact on the level of current price GDP ranges from a decrease of £1.4 billion in 2008, 2009 and 2011 to a decrease of £0.7 billion in 1999 and 2000. The only impact on annual GDP growth between 1997 and 2011 is +0.1 percentage points in 1998 ([Annex B](#)).

3.8 Improvements to own account construction

During Blue Book 2014, a GNI ESA 1995 reservation for own account construction (within gross fixed capital formation) was addressed as described in the article [Changes stemming from improved comparability of Gross National Income measurement](#). At the time of implementation the data up to 2010 in the reservation used a benchmark for self builds data which had a base year of 2006. AMA Research Ltd has now provided us with information

which allows us to produce a more timely annual benchmark figure for self-build homes for all years from 2007 to 2013.

The impact on the level of current price GDP ranges from a decrease of £1.2 billion in 2010 and 2011 to an increase of £0.4 billion in 2007. The impact on annual GDP growth between 2007 and 2011 is a maximum of +/- 0.1 percentage points in any year (Annex B).

3.9 Transport for London capital stock changes

As part of Blue Book 2015 changes, some of the subsidiaries of Transport for London previously recorded as public non-financial corporations were reclassified as Local Government bodies. This was explained in the article [Classification changes to National Accounts for Blue Book 2015](#). To complete the required actions within National Accounts, adjustments have now been made to the capital stocks series back to 2008 to incorporate this reclassification. But the impact for the years 2008 to 2011 is less than £0.1 billion in all years and there is no material impact on current price GDP levels or annual growth.

3.10 Natural gas imports from Norway

Her Majesty's Revenue and Customs (HMRC) have amended the method for collecting data for the compilation of natural gas traded with non-EU partners. This change only affects non-EU imports of natural gas and has already been applied in the UK Trade statistical release for 2014 onwards. At Blue Book 2016 this change is being taken back to 2011 and so, for the purposes of the period being presented in this article, only 2011 is impacted.

The resulting impact on current price GDP levels is a decrease of £1.4 billion for 2011 which has the impact of decreasing current price GDP growth by 0.1 percentage points.

4 Plans for future updates

This article is the first 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 2011 for current price GDP changes. The improvements described in this article will often also be applicable to subsequent years. But these years are additionally subject to regular data updates and other methodological changes which will be presented in future articles. The outline for the full publication timetable is as follows.

As well as the first impact article for Blue Book 2016, 2 detailed methodological articles were also published on 24 February 2016. Links to these articles can be found in Section 7. Table 1 gives a draft schedule for the remaining articles leading up to the publication of Blue Book 2016 on 29 July 2016. Final dates will be announced at least 1 month before each publication.

Table 1 - Provisional publication schedule for UK Blue Book and Pink Book 2016

Content of Article	Provisional date of publication
Impact on GDP Chained Volume Measure annual estimates 1997-2011	Wednesday 23 March 2016
GDP(O) Industry Review	Wednesday 23 March 2016
Methodological improvements to National Accounts for Blue Book 2016: Imputed rent	Wednesday 23 March 2016

Detailed assessment of changes to Sector and Financial Accounts annual estimates 1997-2011	Tuesday 26 April 2016
Detailed assessment of changes to Balance of Payments annual estimates 1997-2011	Tuesday 26 April 2016
Impact on GDP Current Price and Chained Volume Measure quarterly and annual estimates 1997-2014	Friday 20 May 2016
Detailed assessment of changes to Sector and Financial Accounts 1997-2014	Tuesday 7 June 2016
Detailed assessment of changes to Balance of Payments 1997-2014	Tuesday 7 June 2016
Classification Changes to National Accounts for Blue Book 2016	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 2016 (consistent with Pink Book 2016)	Thursday 30 June 2016
Impact of changes in the national accounts and economic commentary for 2016 Quarter 1 (Apr to June)	Thursday 30 June 2016
Blue Book 2016	Friday 29 July 2016
Pink Book 2016	Friday 29 July 2016

Source: Office for National Statistics

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6 Background Notes

1. A list of those given pre-publication access to the contents of this article is published as part of this release.
2. 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

7 References

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

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

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