

Article

# Impact of Blue Book 2021 changes on current price and volume estimates of gross domestic product

Methodological and data improvements that affect current price and chain volume measure of gross domestic product (GDP), 1997 to 2019.

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## Table of contents

1. [Overview](#)
2. [Scope of Blue Book 2021](#)
3. [Indicative Impacts of Blue Book 2021](#)
4. [Future developments](#)
5. [Related links](#)

# 1 . Overview

In the UK National Accounts, fully balanced estimates of current price gross domestic product (GDP) have traditionally only been produced in a Supply and Use Tables (SUT) framework. In Blue Book 2021, we have produced volume estimates of GDP in the SUT framework for the first time - including [the first published official estimates](#) of double deflation along with improved reconciliation of current price and volume estimates. Blue Book 2021 also aims to improve the international comparability of the UK GDP estimates, with a package of improvements made in line with international best practice.

We provide a summary of these indicative estimates in this year's Blue Book for the period 1997 to 2019:

- average annual current price GDP growth for the periods 1998 to 2007 and 2010 to 2019 remain unchanged at 5.0% and 3.7% respectively
- average annual volume GDP growth over the period 1998 to 2007 is now 2.7%, revised down from 2.9%; average annual volume GDP growth stands at 2.0% from 2010 to 2019, revised up from 1.9%

Additional information regarding [financial sector data](#) and [double deflation](#) have been released today (28 June 2021). Further analysis will be published on 28 July, providing additional lower-level estimates of these indicative impacts and those to the Institutional Sector Accounts ahead of the publication of Blue Book 2021.

## 2 . Scope of Blue Book 2021

There are important methodological improvements that will be incorporated into Blue Book 2021, impacting both current price and volume estimates of gross domestic product (GDP). There have been revisions to previously published estimates reflecting the improved reconciliation of current price and volume estimates in a Supply and Use Tables (SUT) framework at a 114-product level, alongside changes as to how deflation is applied.

### Financial Services Survey

Continued improvement is being made to the quality of estimates for financial services using information from the [Financial Services Survey \(FSS\)](#), including the output and intermediate consumption of other financial institutions and financial auxiliaries. This involves implementation of new estimates on fees and commissions for industries K64 (financial service activities, except insurance and pension funding) and K66 (activities auxiliary to financial services and insurance activities). This real survey data replaces the previously extrapolated data used in the national accounts. With the introduction of the FSS data, we have taken this opportunity to review and improve our [national accounts balancing adjustments](#) applied across all transactions, including those indirectly impacted. An example of the impact of this change are the effects on gross fixed capital formation estimates.

### Removal of historic link factors and improvements to household expenditure exhaustiveness

In the early 2000s, the Living Costs and Food Survey (LCF) and Annual Business Survey (ABS) went through significant changes, so link factors were introduced to remove structural breaks in the historical estimates. With more recent survey estimates having been collected, these link factors are no longer required. Blue Book 2021 implements the removal of these adjustments, whereby data prior to the early 2000s are modified to align to current levels. This has led to a reduction in national accounts balancing adjustments and improved alignment for the expenditure approach to GDP, leading to revisions to household expenditure on various products. To achieve improved exhaustiveness of household expenditure, Blue Book 2021 includes uplifts to account for diary fatigue in the LCF, and ABS-sourced retail sales by non-retail businesses. It also includes methods changes to estimates of household spending on machine and remote gambling, and maintenance and repair of major durables.

## Trade

Improvements to estimates of freight services have been implemented in recent years for all modes of transport excluding sea freight. In Blue Book 2021 we have reviewed and replaced outdated estimates of sea freight data with Vessels Value data and UK Chamber of Shipping data. Other changes impacting trade include improved estimates on transactions of second-hand ships, and new methods of approximating the import and export adjustments for ship repairs. The changes also include improved methodology for calculating disbursements in the UK by foreign operators.

## Deflators

The telecoms deflator has been updated to include data on business-to-consumer sales, broadband and mobile data. This captures the effect of bundling of services, tackles the underrepresentation of internet services, and improves the handling of access charges, leading to new estimates of price changes within telecommunications. [We have also implemented improvements to the clothing deflator](#), impacting the retail sales index and household expenditure.

## Valuables

There are several changes to measuring valuables, for example, improving sources, sector allocation and deflation. Imports and exports of valuables are sourced from HM Revenue and Customs (HMRC) data (now identified at a more granular level of product). Imports and exports of non-monetary gold are supplied by the Bank of England. Valuables now include acquisitions of domestically produced valuables such as art, jewellery, and coin.

Costs associated with the transfer of valuables from one unit to another are now included and measured as follows:

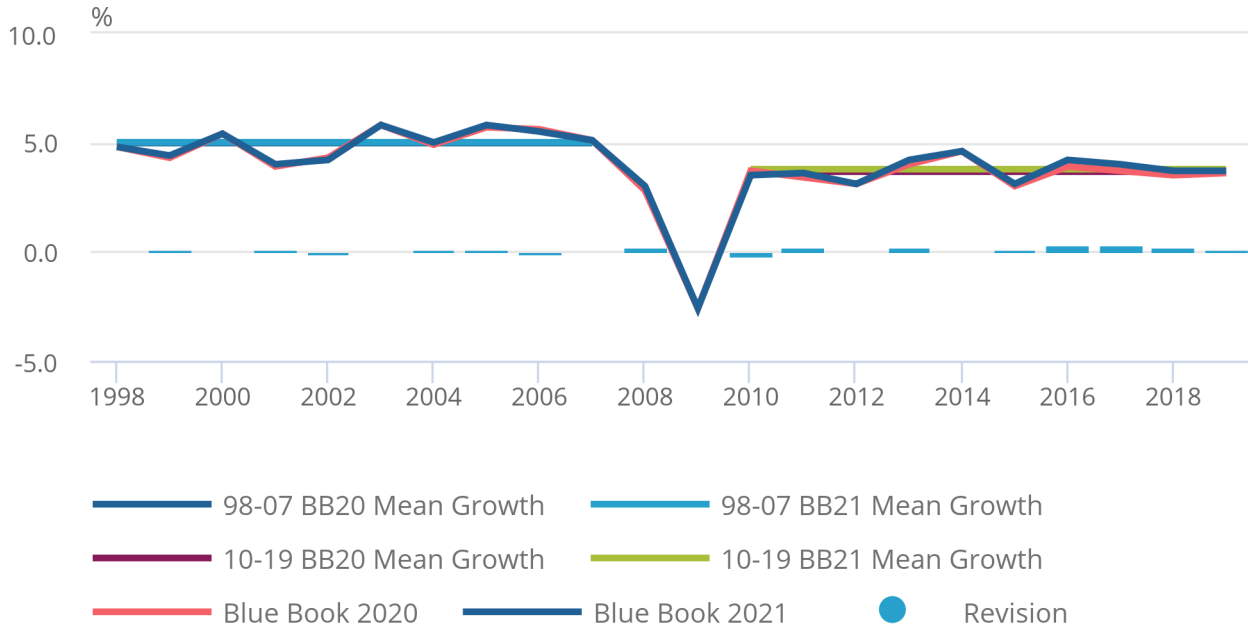
- distributors' trading margins - using ABS data from retailers to determine margins made on sale of valuables
- commission paid - using a mix of ABS and web-scraped auction house data, estimating the number of valuables sold and their total value
- taxes - standard VAT rates for imported and domestic items are used unless VAT exemption applies

## 3 . Indicative Impacts of Blue Book 2021

Figure 1 shows the indicative revisions to the annual profile of current price gross domestic product (GDP) growth from 1998 to 2018, highlighting how the underlying trends between 1998 to 2007 and 2010 to 2019 are expected to be unchanged at 5.0% and 3.7% respectively. While there has not been a marked change to the underlying picture around the financial crisis (2007 to 2010), there have been revisions to specific years.

**Figure 1: Average current price annual GDP growth has largely been unrevised between 1998 and 2019**

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**Source: Office for National Statistics**

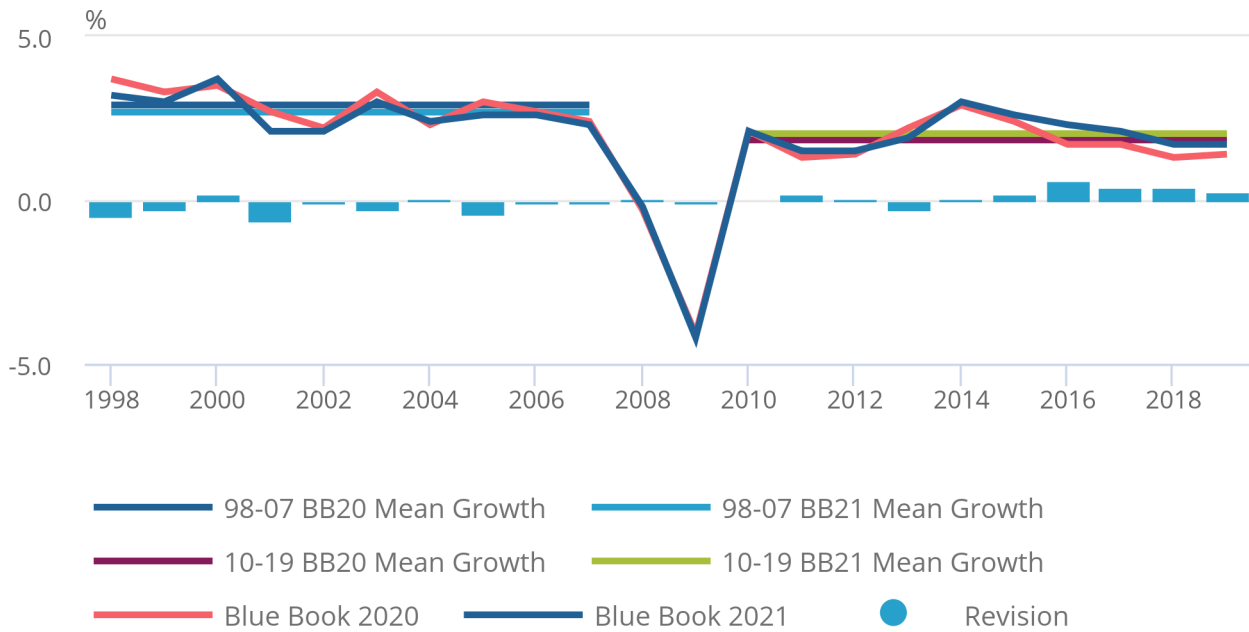
**Notes:**

1. 2019 is newly through the SU framework and has been included for analysis purposes only. The full impacts will be explored in a later article.

Figure 2 shows the revisions to the annual profile of volume GDP growth. These indicative estimates show that annual volume GDP growth over the period 1998 to 2007 is now 2.7%, revised from 2.9% recorded in Blue Book 2020. For the period 2010 to 2019, annual volume GDP growth is now 2.0%, revised upwards from 1.8%. Over the entire series, the revisions to individual years are larger, ranging from negative 0.6 to 0.6 percentage points. This primarily reflects the impact of deflator changes and introduction of double deflation.

**Figure 2: Average annual volume GDP growth sees minor revisions between 1998 and 2019**

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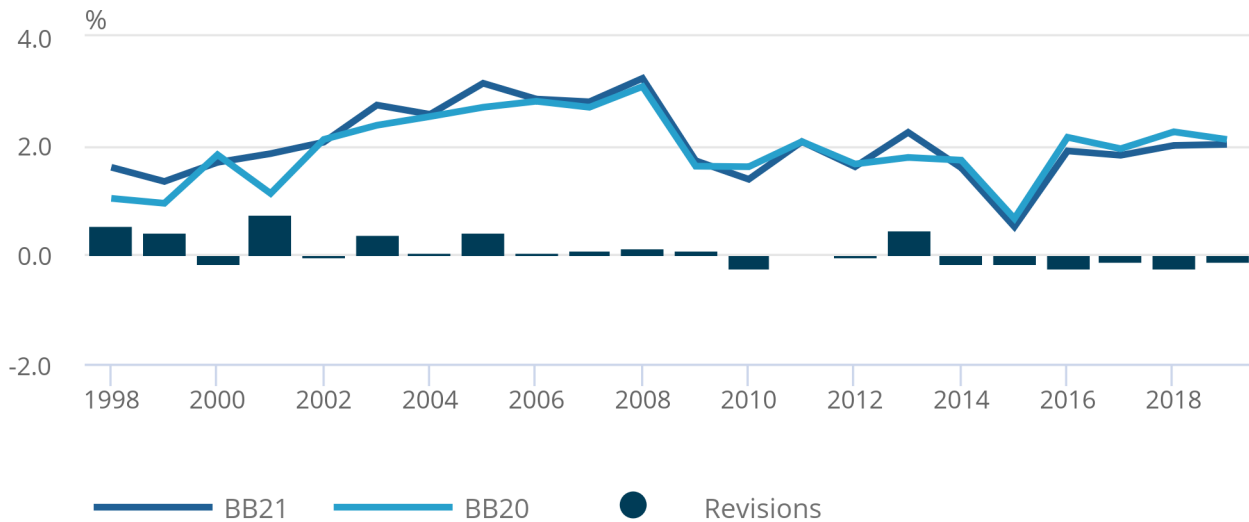


Source: Office for National Statistics

Figure 3 shows the indicative profile of annual growth to the GDP deflator in Blue Book 2021, which represents the broadest measure of inflation in the economy. These capture the impacts of the improvements to the telecoms and clothing deflators.

**Figure 3: There have been revisions to the implied GDP deflator**

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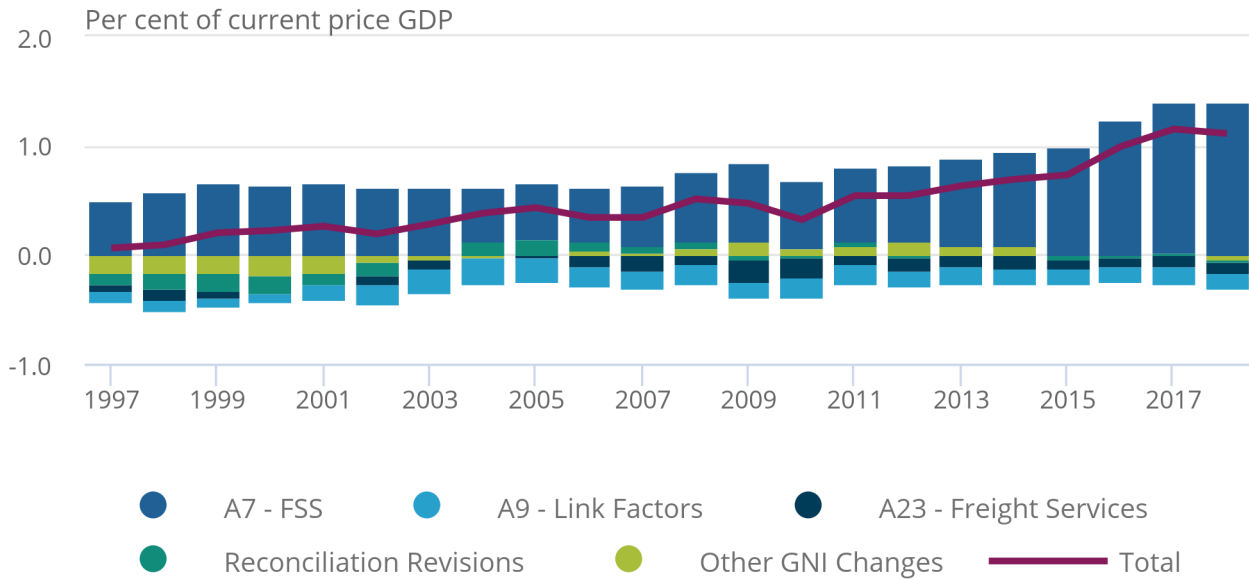
**Source: Office for National Statistics**

Figure 4 provides a decomposition of the change to the level of current price GDP, comparing the profile of the latest available estimates with the indicative one for Blue Book 2021. Each year on average these level revisions are equivalent to 0.5% of current price GDP over the whole period.

Figure 4 shows that the cumulative effects from the implementation of the new Financial Services Survey, removal of historical link factors, and new estimates of sea freight have been significant contributors to the total revisions of the current price GDP level. Reconciliation revisions for improved volume estimates also show a slight impact on current price estimates.

**Figure 4: Implementation of the Financial Services Survey explains most of the current price GDP revisions**

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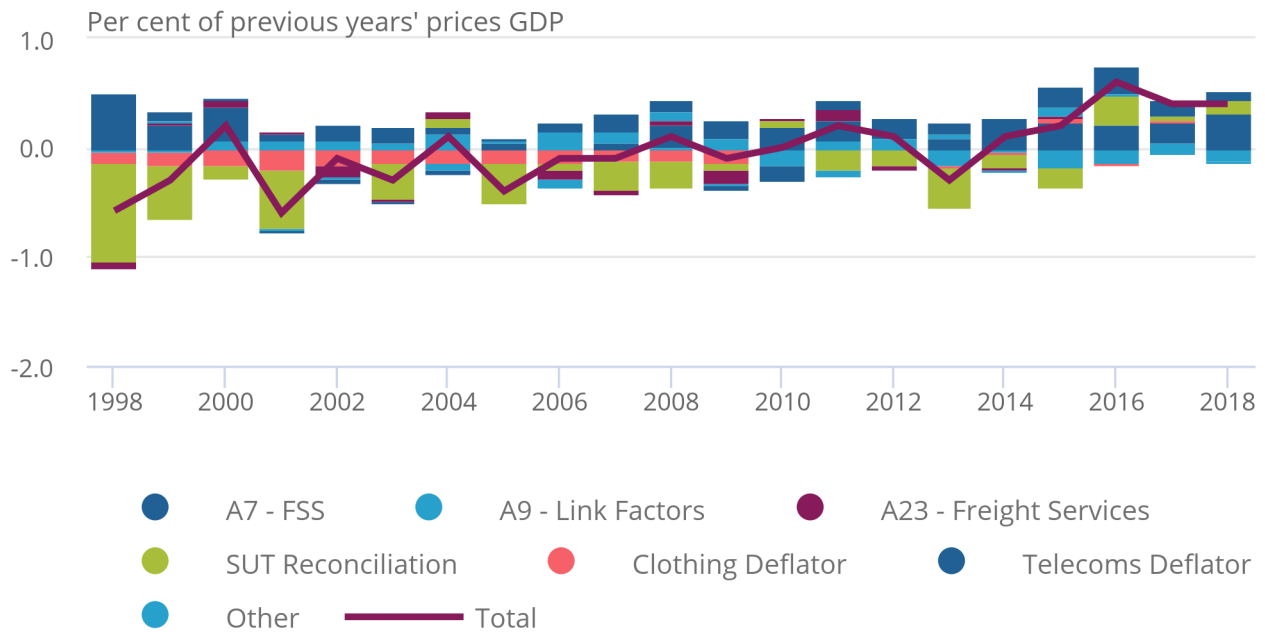


Source: Office for National Statistics

Figure 5 illustrates the decomposition of the change to the level of volume GDP. It shows the additional effects of Supply and Use Table (SUT) reconciliation, and the inclusion of improved clothing and telecoms deflators, largely effecting the level of volume GDP in Blue Book 2021.

**Figure 5: SUT Reconciliation explains most of the volume GDP revisions**

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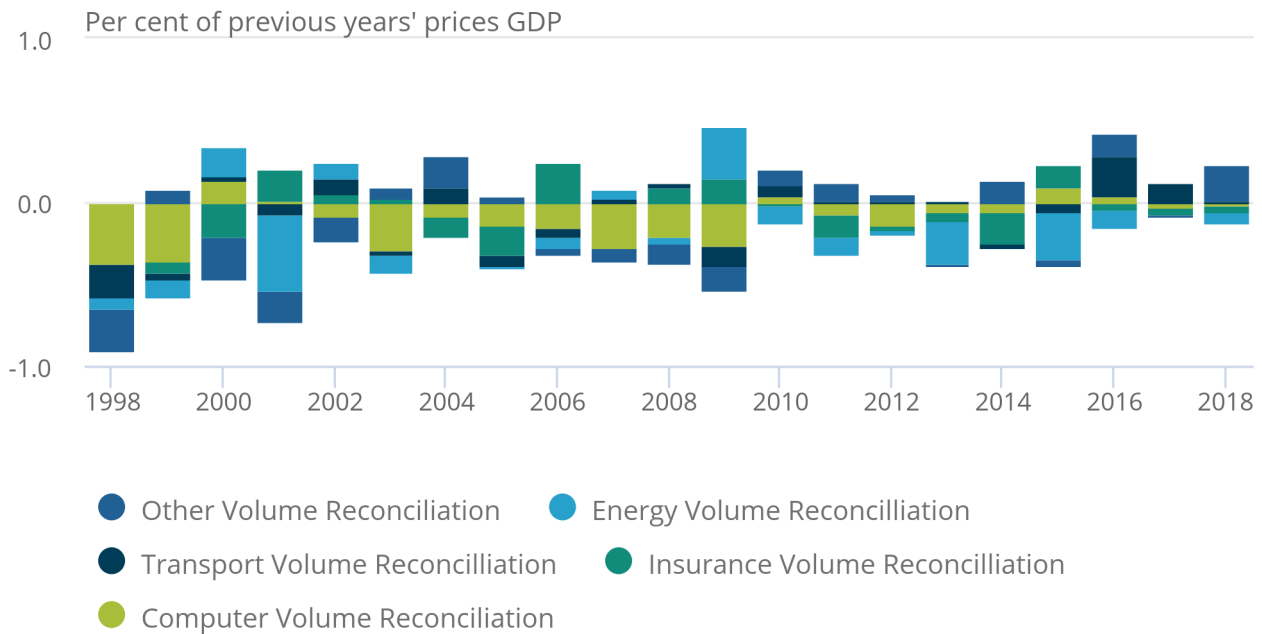
Source: Office for National Statistics

Figure 6 illustrates the decomposition of SUT reconciliation. Under our new volume framework, we reconcile estimates at a lower industry and product-level, aligning results towards higher quality sources. For example, computer volume reconciliation demonstrates the incorporation of hedonic adjustments in household expenditure estimates of computer hardware, accounting for improved quality in goods when estimating inflation. This adjustment has been taken on in the supply side, resulting in changes to volume data and improved balancing.



**Figure 6: SUT Reconciliation decomposition**

Figure 6: SUT Reconciliation decomposition



Source: Office for National Statistics

## 4 . Future developments

Blue Book 2021 signifies further stages in our transformation of the UK National Accounts towards international best practice. Producing volume estimates of gross domestic product (GDP) in a Supply and Use Tables (SUT) framework has led to improvements in the balancing of current price and volume GDP estimates, including the implementation of double deflation. Further changes to specific data sources and the introduction of new methods in some components of the national accounts have also provided improved estimates.

We will publish further indicative impacts of Blue Book 2021 on 28 July 2021. This will provide a more in-depth insight into how we expect the production, income, and expenditure measures of GDP to be revised, while also including a preliminary view of the new quarterly profile of current price and volume estimates of GDP. We will also provide an update on further improvements related to our research program which is updating our data and methods to improve our measurement of gross national income (GNI) and ensure comparability with other countries.

## 5 . Related links

### [Financial services sector methods changes: 1997 to 2019](#)

Methodology Article | Released 28 June 2021

Improvements in calculating financial services estimates for Other Financial Institutions by basing the calculation of output and intermediate consumption of Other Financial Institutions (in NACE 64.2 to 64.9), and financial auxiliaries (in NACE 66) on the industry-specific data, and applying output valuation for the financial services that these units provide.

### [Impact of double deflation on industry chain volume measure annual estimates 1997 to 2018: Blue Book 2021](#)

Article | Released 28 June 2021

Indicative impacts of a new framework which will be implemented in Blue Book 2021, including the first official estimates of double-deflated gross domestic product.

### [Impact of Blue Book 2020 changes on current price and volume estimates of gross domestic product](#)

Article | Released 20 July 2020

Methodological and data improvements that impact on current price and chain volume measure of GDP for the period 1997 to 2018.