

Impact of Blue Book 2023 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 2020.

Contact:
Eric Crane
SUT@ons.gov.uk
+44 1633 455092

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1 . Main changes

The 2023 Blue Book publication will incorporate several methodological and data source improvements which revise gross domestic product (GDP) estimates. These include:

- introducing new methodology to improve estimates of the impact of global supply chains
- implementing outstanding classification decisions affecting the public sector
- a range of improvements to the deflators used across National Accounts
- completing a further group of data source and method changes to improve the international comparability of UK GDP estimates

There is limited impact on GDP of the improvements being implemented; a summary of the indicative annual impacts resulting from these changes, for the period 1997 to 2019, are:

- average annual current price GDP growths for the periods 1998 to 2007 and 2010 to 2019 remain unchanged at 4.9% and 3.7%, respectively
- average annual volume GDP growth over the period 1998 to 2007 is now 2.8%, revised up from 2.7%; the average growth over 2010 to 2019 is unchanged at 1.9%

As per previous releases of this article, 2008 and 2009 are excluded from the average to reflect the impact of the financial crisis on UK economic growth. For more information on indicative impacts for 2020 see [Section 3: Indicative impacts of Blue Book 2023](#). The year 2020 is excluded from the average growth rates. This is because of ongoing measurement challenges posed by the coronavirus (COVID-19) pandemic and the resulting 2020 growth rate being highly atypical. Revisions to 2021 and quarterly GDP will be included in an upcoming article, for more information see our previous [Impact of Blue Book 2022 changes on gross domestic product article](#).

2 . Scope of changes in Blue Book 2023

The Blue Book 2023 scope will affect both current price and chain volume measure gross domestic product (GDP) estimates.

Globalisation

The Office for National Statistics (ONS) recognises the importance of capturing the complexity of economic ownership, business models and supply chains crossing national boundaries, and the potential to improve National Accounts. Blue Book 2023 will incorporate the first set of improvements, focused on a small number of multi-national enterprises, aimed at better accounting for these globalisation impacts. While the overall effect on GDP is modest at this early stage, the cumulative effect will become evident as more multi-national enterprises are accounted for in future Blue Book publications. For further information about the globalisation change, see our [Globalisation in the Context of the UK National Accounts: Blue Book 2023 article](#).

Public sector finances

To improve the alignment of the National Accounts and public sector finances publications, Blue Book 2023 will include the effects of reclassifying several bodies from public corporations into central government. Blue Book 2023 will also reflect the reclassification of certain central government property leases from operating to financial leases, following a review of the impact of the implementation of International Financial Reporting Standard 16 (IFRS16). For further information about the recording of central government leases, see our [Recent and upcoming changes to public sector finance statistics: July 2022 article](#).

A set of public sector volume changes, which includes the introduction of new methods and data sources to estimate the volume output for non-market adult social care, will also be implemented.

Benchmarks and associated projects

Blue Book 2023 will incorporate improvements to update or replace benchmarks in our data. Benchmarking refers to the use of fixed proportions based on less frequent data sources, or bespoke academic or market research, to address areas that are difficult to measure.

Improvements include:

- replacing the use of fixed proportions in calculating redundancies and severance payments for multiple industries
- introducing new methodology to update fixed proportions and forecasts for households' expenditure on smuggled cigarettes, tobacco, and cigars
- improving the industrial classification of non-profit institutions serving households and the measurement of the higher education sector
- improved methods for measuring non-UK government personnel spending within the UK
- new data sources and methods for measuring rail passenger services

Deflator improvements

We are improving the effectiveness of the systems used in the compilation of the National Accounts by developing a central compilation system for deflation measures, known as the deflator gateway system. This system provides a consistent and coherent application of deflators across National Accounts. Blue Book 2023 will enhance the quality of deflators used by:

- introducing new methods to account for changes in the quality of computer hardware
- expanding the use of Services Producer Price Indices (SPPI) in National Accounts
- introducing new weighting methods for market output deflators
- introducing improved methods and data sources to estimate trade in services' travel deflators

Other method and data improvements

Blue Book 2023 will incorporate other method and data source improvements, including:

- introducing new methods to measure the value of central government dwellings
- introducing new data sources to improve the measurement of education-related travel exports, for further information [see our article Section 4: Pink Book 2023 of our Methodological improvements to UK education services exports](#)
- updating the estimation of businesses not covered by the Annual Business Survey (ABS) sample frame
- reviewing and improving the treatment of own account software

3 . Indicative impacts of Blue Book 2023

Gross domestic product (GDP) growth in current prices

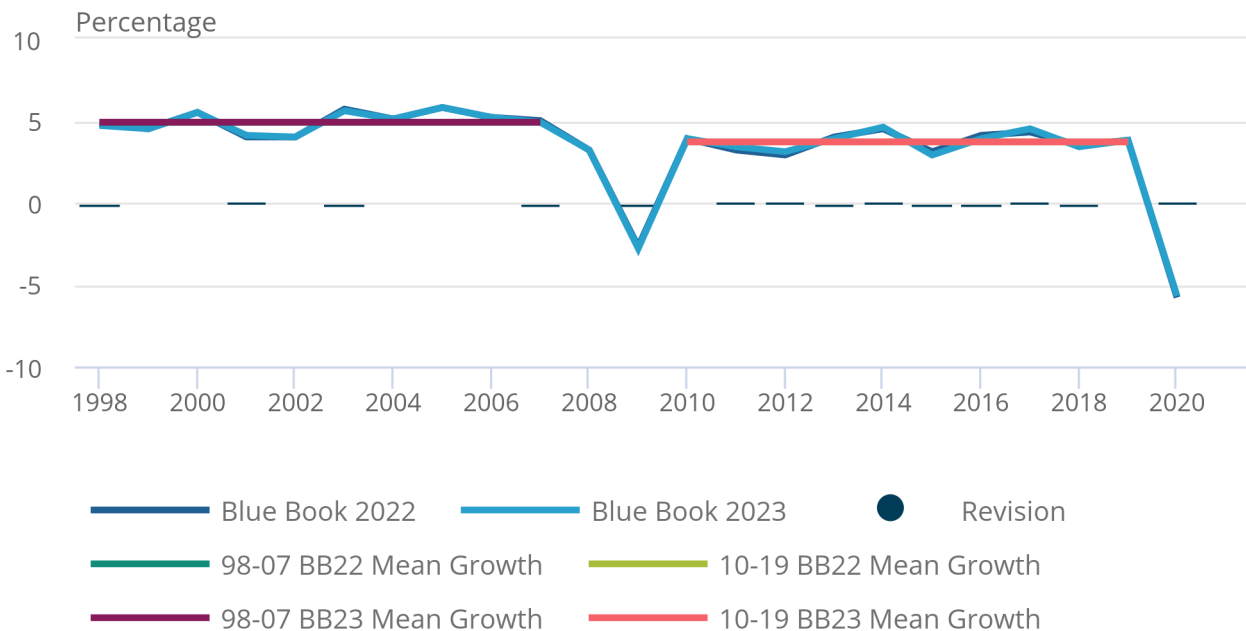
Figure 1 shows indicative revisions to annual current price GDP growth from 1998 to 2020. These impacts show the estimated effect of the changes to sources and methods. Average annual growths between 1998 to 2007 and 2010 to 2019 are expected to remain unchanged at 4.9% and 3.7%, respectively. GDP growth revisions in individual years are estimated to range between negative 0.2 and positive 0.2 percentage points. There are very limited annual revisions to the 2008 to 2009 financial crisis: 2008 is expected to remain unchanged, while 2009 is estimated to revise downwards by 0.1 percentage points.

Figure 1: Annual current price GDP growth sees minor revisions in 1998 to 2020

Annual expected current price revisions to GDP growth, 1998 to 2020

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Annual expected current price revisions to GDP growth, 1998 to 2020



Source: Office for National Statistics

Notes:

1. 1998 to 2007 and 2010 to 2019 mean growths are calculated from unrounded data so may not reconcile with annual growth rates.

GDP growth in chain volume measures

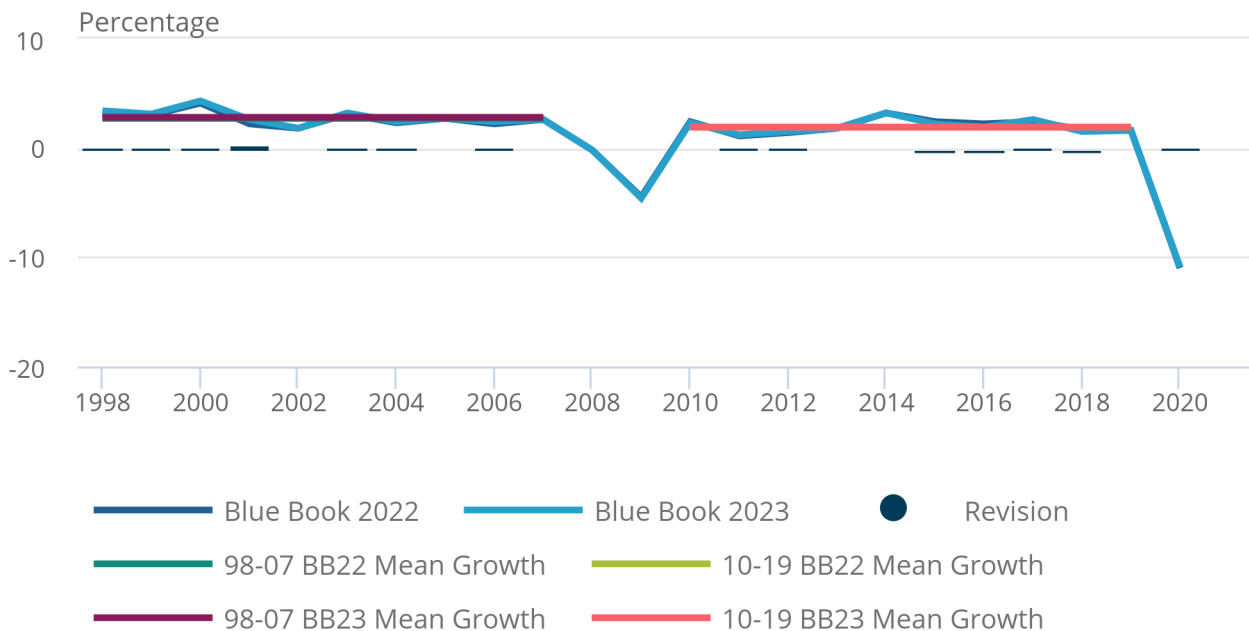
Figure 2 shows estimated revisions to annual volume GDP growth. Annual volume growth over the period 1998 to 2007 is estimated to revise upwards from 2.7% to 2.8%. For the period 2010 to 2019, volume growth is expected to remain unchanged at 1.9%. Revisions to GDP growth in individual years are estimated to range between negative 0.3 and positive 0.4 percentage points, with limited revisions to the period 2008 to 2009. As per the current price changes, 2008 is expected to remain unchanged, while 2009 is estimated to revise downwards by 0.1 percentage points.

Figure 2: Annual volume GDP growth sees its largest revisions between 1998 to 2001

Annual expected chain volume measure revisions to GDP growth, 1998 to 2020

Figure 2: Annual volume GDP growth sees its largest revisions between 1998 to 2001

Annual expected chain volume measure revisions to GDP growth, 1998 to 2020



Source: Office for National Statistics

Notes:

1. 1998 to 2007 and 2010 to 2019 mean growths are calculated from unrounded data so may not reconcile with annual growth rates.

GDP implied deflator

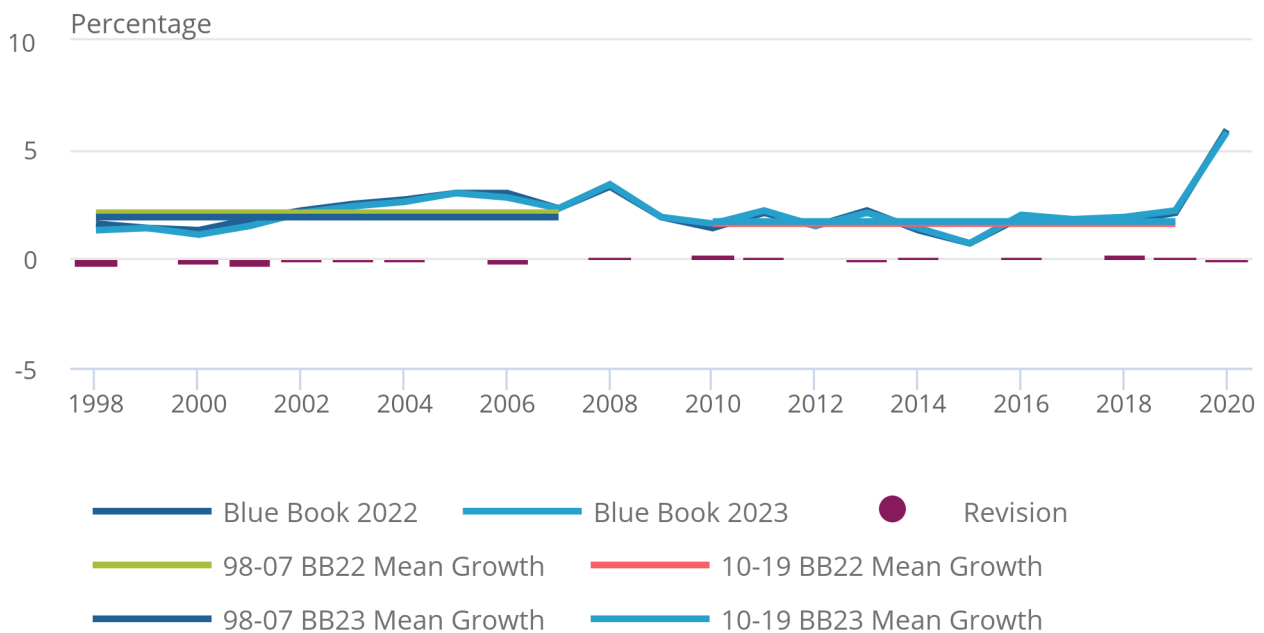
Figure 3 shows the estimated impact of revisions on the GDP deflator, which represents the broadest measure of inflation across the whole UK economy. These indicative revisions are because of indirect effects created by the Blue Book scope of current price changes and volume impacts from the deflator improvements. Revisions to GDP deflator growth in individual years are estimated to range between negative 0.3 and positive 0.1 percentage points.

Figure 3: GDP deflator revisions are attributable to current price and volume GDP revisions

Annual expected revisions to growth in the GDP implied deflator, 1998 to 2020

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Annual expected revisions to growth in the GDP implied deflator, 1998 to 2020



Source: Office for National Statistics

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1. 1998 to 2007 and 2010 to 2019 mean growths are calculated from unrounded data so may not reconcile with annual growth rates.

Impacts on current price GDP levels by change

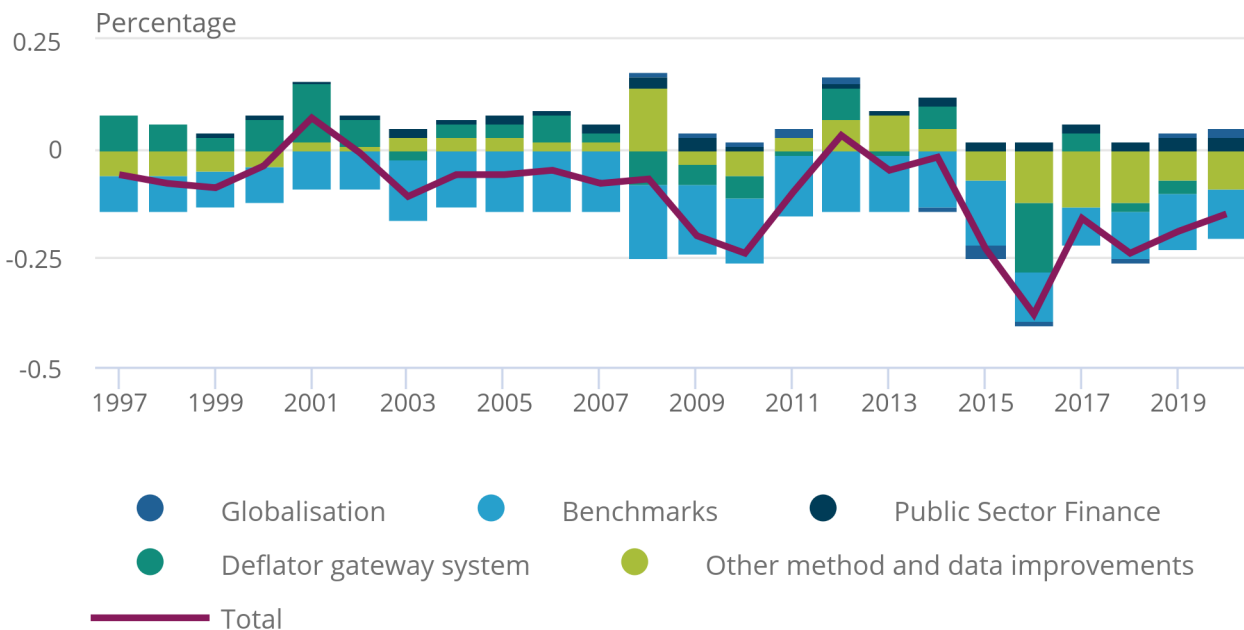
Figure 4 shows indicative impacts of the Blue Book 2023 scope on current price GDP. These changes are generally predicted to result in a lower GDP level. The main contributor is benchmark improvements: across 1997 to 2020, benchmark revisions result in a downward revision to GDP of at least 0.1 percentage points. In addition, deflator improvements are estimated to affect current price GDP levels, as they are used to calculate some current price transactions within GDP. This is expected to result in upward revisions in the earlier years 1997 to 2002, and downward revisions in the period 2008 to 2010. The estimated revisions from other method and data improvements are more prominent between 2015 and 2020, with an average downward revision of 0.1 percentage points.

Figure 4: Revisions to benchmarks explain most of the expected current price GDP revisions

Annual expected revisions to current price GDP level by change, 1997 to 2020

Figure 4: Revisions to benchmarks explain most of the expected current price GDP revisions

Annual expected revisions to current price GDP level by change, 1997 to 2020



Source: Office for National Statistics

Impacts on volume GDP growth rates by change

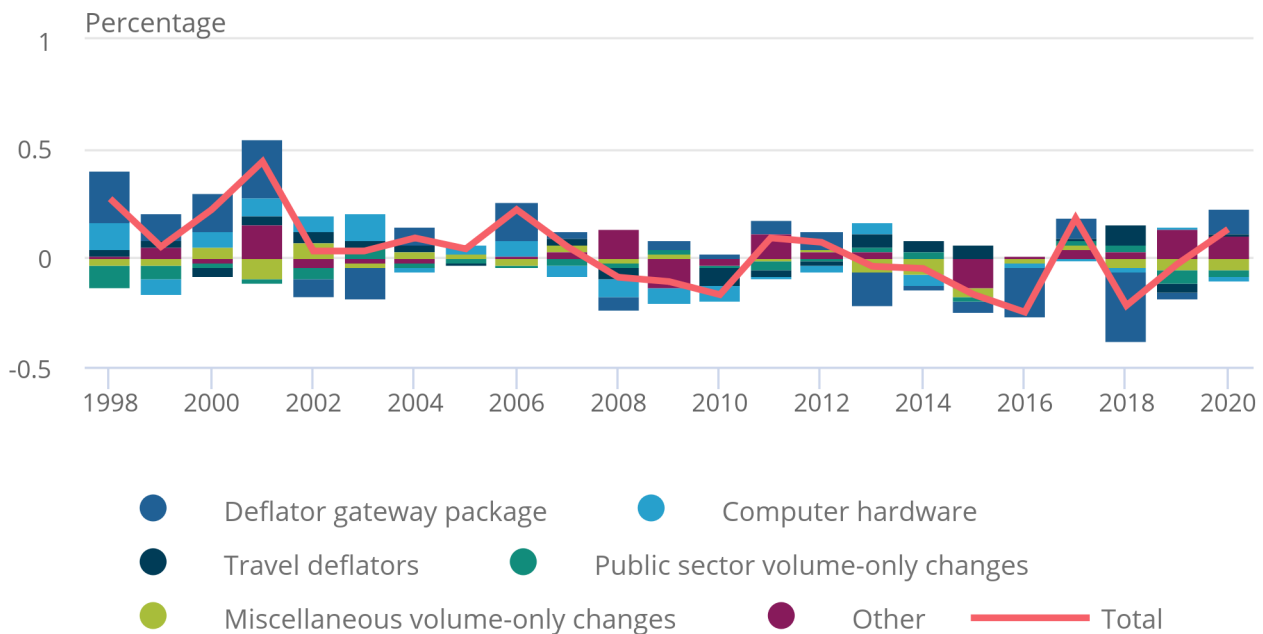
Figure 5 shows an estimated decomposition of the change to the volume GDP growth rate. The deflator gateway package item excludes the computer hardware and travel deflator improvements, for which we provide separate estimates. The deflator gateway package is the main contributor to the expected revisions in volume GDP, resulting in an average upward revision of 0.1 percentage points in the period 1998 to 2007, and a downward revision of negative 0.1 percentage points in 2010 to 2019. The introduction of improved computer hardware deflators, which better capture changes in quality of these products, result in an average upward revision of 0.1 percentage points between 1998 to 2003. The other category includes the estimated volume impacts of current price changes within the scope of Blue Book 2023.

Figure 5: The deflator gateway package explains most of the expected volume GDP revisions

Annual expected revisions to volume GDP growth by change, 1998 to 2020

Figure 5: The deflator gateway package explains most of the expected volume GDP revisions

Annual expected revisions to volume GDP growth by change, 1998 to 2020



Source: Office for National Statistics

4 . Base year

In most Blue Books, volume series are updated so their reference and last base years are moved forward one year as part of the annual chain-linking process. In line with international guidance, we held the base year at 2019 in Blue Book 2022 to avoid the effect of the coronavirus (COVID-19) pandemic on the 2020 economy structure affecting subsequent periods.

The structure of the economy was still heavily disrupted in 2021 and so it is unlikely to be representative of 2022 or 2023. Therefore, 2019 will continue to be the last base year and reference year in Blue Book 2023. We expect to re-reference our volume series in Blue Book 2024 and will provide updates in due course.

5 . Future developments

Blue Book 2023 will make significant improvements in the measurement of several aspects of the National Accounts. The introduction of the globalisation work in Blue Book 2023 moves us closer towards our objective of better capturing the impact of global supply chains. The introduction of the deflator gateway system and the data source and methodological changes in Blue Book 2023 continue to improve the quality of our National Accounts estimates.

We will publish further indicative impacts of Blue Book 2023 in an upcoming article, for further information see our previous release, [Impact of Blue Book 2022 changes on gross domestic product article](#). This upcoming article will provide a more in-depth insight into how we expect the components of the production, income, and expenditure approaches to measuring GDP to be revised. It will also include a preliminary view of the new quarterly profile of current price and volume estimates of GDP.

6 . Glossary

7 . Related links

[Impact of Blue Book 2022 changes on current price and volume estimates of gross domestic product](#)

Article | Released 27 June 2022

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

[Proposed changes to be implemented in Blue Book and Pink Book 2023](#)

Article | Released 16 February 2023

Planned scope and content of the UK National Accounts, the Blue Book and UK Balance of Payments, the Pink Book, 2023, editions.

[Globalisation in the Context of the UK National Accounts: Blue Book 2023](#)

Article | Released 3 July 2023

A summary of the guidance used in the measurement of globalisation in the UK National Accounts for Blue Book 2023

[Recent and upcoming changes to public sector finance statistics: July 2022](#)

Article | Released 19 August 2022

Information on recent and upcoming changes to our public sector finance statistics.

[Methodological improvements to UK education services exports](#)

Article | Released 2 November 2022

Outline of methodological improvements the Office for National Statistics is making to education services exports estimates within National Accounts based on a review of available data sources and international best practice.

[Impact of Blue Book 2022 changes on gross domestic product](#)

Article | Released 22 August 2022

Impact of methodological and data improvements on current price and chain volume measure of quarterly gross domestic product (GDP), 1997 to 2020.

8 . Cite this article

Office for National Statistics (ONS), released 3 July 2023, ONS website, article, [Impact of Blue Book 2023 changes on current price and volume estimates of gross domestic product](#)