Office for National Statistics

Article

Impact of Blue Book 2022 changes on gross domestic product

Impact of methodological and data improvements on current price and chain volume measure of quarterly gross domestic product (GDP), 1997 to 2020. Includes indicative annual impacts on the services, production, and construction sectors.

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1 . Overview

The 2022 annual national accounts, also known as Blue Book 2022, will incorporate a wide range of improvements to sources and methods. These include:

- measuring the insurance industry using Solvency II regulatory data for the first time
- completing the transition to the improved Financial Survey of Pension Schemes
- a package of better sources and methods that improve the international comparability of the UK gross domestic product (GDP) estimates
- estimating 2020 for the first time using the Supply and Use Tables (SUTs) framework, which looks at the supply of goods and services on a very detailed level, how they are used in the economy, and their associated prices

In our Impact of Blue Book 2022 changes on current price and volume estimates of gross domestic product article , we showed the indicative annual impacts for the period 1997 to 2019. Additional information regarding methods changes for insurance and pensions was released on 20 June 2022.

This article will cover the indicative annual impacts resulting from changes to sources and methods, as well as confronting the year 2020 through the SUT framework for the first time.

The latest Organisation for Economic Co-operation and Development (OECD) information shows that the UK is one of the first countries in the world to estimate the 2020 coronavirus (COVID-19) pandemic period through the SUT framework. The United States has also published SUTs for 2020, the only other G7 country to do so. This means that we have one of the most up-to-date sets of estimates for this period of significant economic change. Other countries follow different revision policies and practices, which can result in their estimates being revised later. It is important this is considered when comparing the UK with other countries and our international comparison position is likely to change once other countries fully confront their datasets over time.

We will publish further analysis on 9 September 2022, providing additional lower-level estimates of these indicative impacts and those to the Institutional Sector Accounts ahead of the publication of Blue Book 2022 on 31 October 2022.

2 . Main impacts of our changes

A summary of the impact of our changes are:

- Revisions from 1997 to 2019 are generally small, however there are larger revisions to 2020, although the quarterly and monthly profile through the year is relatively little changed
- Our early estimates in many industries are little revised, however, the improved methods and data have led to larger revisions in certain industries.
- Overall, annual current price gross domestic product (GDP) growth in 2020 is revised down by 1.1 percentage points to a 5.8% fall.
- Annual volume GDP growth in 2020 is revised down 1.7 percentage points to a 11.0% fall
- These 2020 revisions are mainly because we have richer data from our annual surveys and certain administrative data, so we are now able to measure costs incurred by businesses (intermediate consumption) directly and can adjust for prices (deflation) at a far more detail level.

These impacts are explored further throughout this article, including the corresponding quarterly path and impact on industry level estimates for 2020.

3 . Bringing together the three measures of GDP in 2020

In the national accounts, gross domestic product (GDP) is measured by the output, income and expenditure approaches. These are balanced to produce one coherent estimate of GDP.

In the UK, we use the Supply and Use Tables (SUTs) framework as the basis for producing annual estimates of GDP. We use comprehensive information to fully reconcile how the economy performs across 112 industries and products. The SUT reconciliation is first completed around 18 to 24 months after the reference period. For example, fully balanced estimates for 2019 were published for the first time in September 2021.

For those periods that have not yet been through the Supply and Use Process, we use a transparent framework to manage this balancing process at an aggregate level, whereby we apply adjustments to GDP components. These adjustments reflect the relative strengths and weaknesses of the components and the information available at that time.

Each quarter we publish the latest estimates for the economy within our GDP first quarterly estimate bulletin. Currently this means that:

- only data up to the last supply use balanced year have been fully reconciled using the annual SUTs framework, covering up to the end of 2019
- data from Quarter 1 (Jan to Mar) 2020 to Quarter 2 (Apr to June) 2021 are balanced from all three approaches to produce an average – that is, the headline GDP figure reflects the average growth rates of the output, income and expenditure measures
- data for Quarter 3 (Jul to Sept) 2021 onwards are led by the output measure with expenditure and income balanced to produce headline GDP – the headline GDP figure reflects the output growth rate, which income and expenditure are balanced to

Our Recent challenges of balancing the three approaches of GDP article describes how the coronavirus (COVID-19) pandemic has led to challenges in the balancing of the early estimates of GDP in 2020. As part of Blue Book 2022, we have now brought together the three measures of GDP in 2020 for the first time using the SUTs framework. In the September 2022 quarterly national accounts:

- data up to the last supply use balanced year will now be reconciled using the annual SUTs framework – there is one single estimate for all periods that have been fully balanced, which cover up to the end of 2020
- data from Quarter 1 2021 to Quarter 4 (Oct to Dec) 2021 will be balanced from all three approaches to produce an average
- data for Quarter 1 2022 onwards will be led by the output measure with expenditure and income balanced to produce headline GDP

As a result of changes to the level of annual GDP, the GDP quarterly and monthly path will also be revised to align to the new annual levels.

4 . Impact of Blue Book 2022 on current price GDP

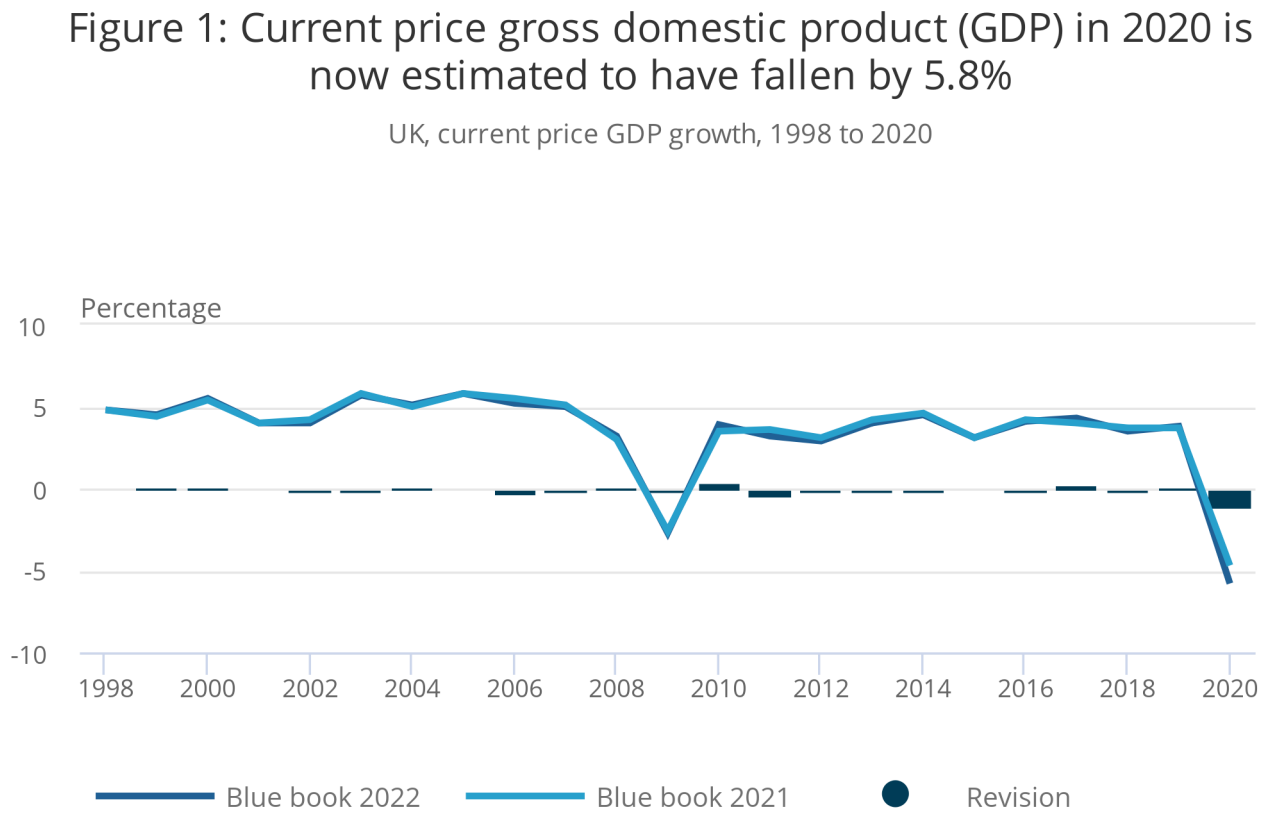
Annual revisions to current price gross domestic product (GDP)

Figure 1 shows the indicative revision to annual current prices GDP growth from 1998 to 2020. Throughout this article quarterly data labelled “Blue Book 2021” has been taken from the latest quarterly national accounts, As discussed in our Impact of Blue Book 2022 changes on current price and volume estimates of gross domestic product article, data between 1998 and 2019 see minor revisions.

In 2020, though, current price GDP is now estimated to have fallen by 5.8%, revised down by 1.1 percentage points.

Figure 1: Current price gross domestic product (GDP) in 2020 is now estimated to have fallen by 5.8%

UK, current price GDP growth, 1998 to 2020



Source: Office for National Statistics – UK National Accounts

Alongside confronting the three measures of GDP for the first time through the SUT framework, we have also incorporated richer data across a number of GDP components. For example, in the income approach, compensation of employees sees downward revisions in 2020 because of the availability of updated HM Revenue and Customs (HMRC) Pay As You Earn (PAYE) Real Time Information (RTI) data for the financial year 2020 to 2021, which has been incorporated for the first time for wages and salaries.

Quarterly revisions to current price GDP

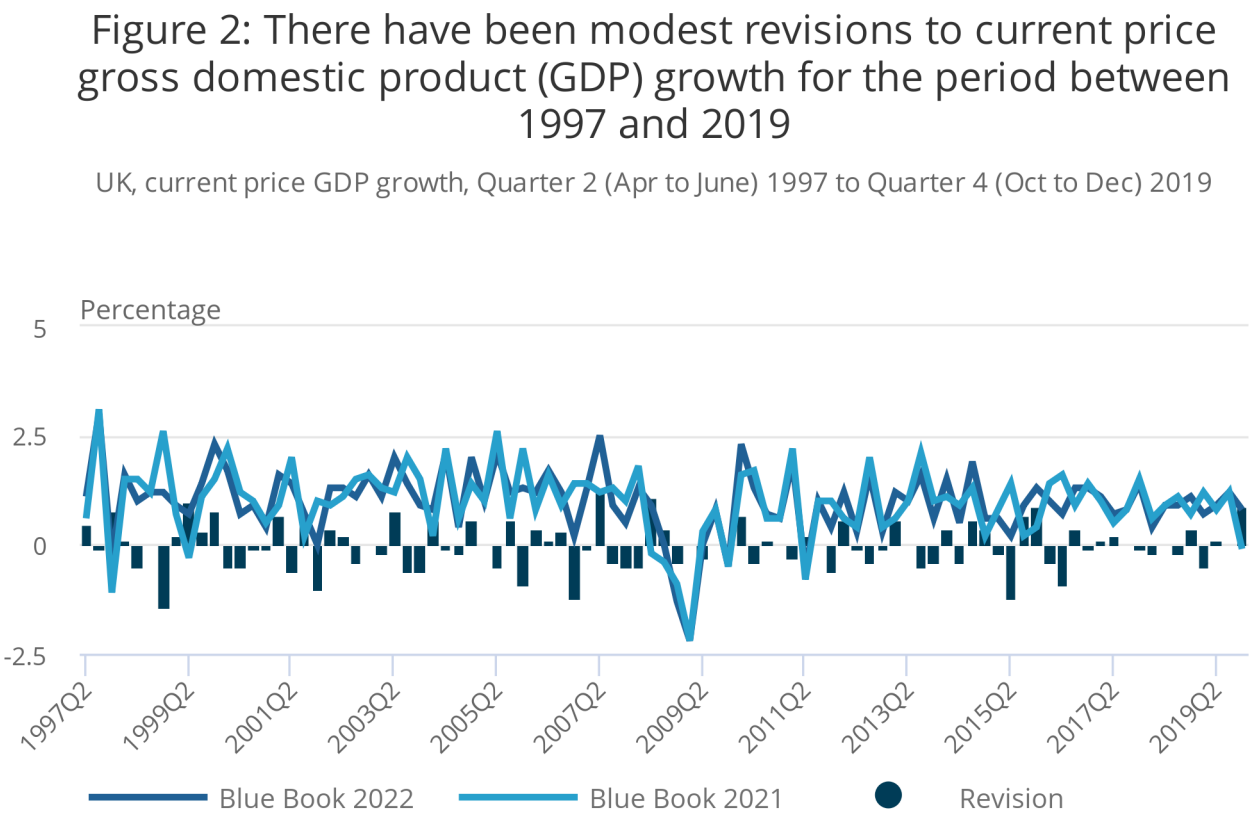
Figure 2 shows the revisions to the quarterly profile of current price GDP growth from Quarter 2 (Apr to June) 1997 to Quarter 4 (Oct to Dec) 2019. Because of the larger movements over the coronavirus (COVID-19) pandemic, the 2020 quarters have been shown separately in Table 1.

Over the time period Quarter 2 1997 to Quarter 4 2019, there was a mean absolute revision of 0.4 percentage points.

Picking out one of the larger revisions, the quarterly revision of 1.3 percentage points in Quarter 2 2007 was caused by household consumption because of changes to the measurement of insurance and pensions.

Figure 2: There have been modest revisions to current price gross domestic product (GDP) growth for the period between 1997 and 2019

UK, current price GDP growth, Quarter 2 (Apr to June) 1997 to Quarter 4 (Oct to Dec) 2019



Source: Office for National Statistics – UK National Accounts

Table 1 shows the revisions to the quarterly profile of current price growth across 2020. Heightened levels of uncertainty have led to larger revisions in 2020. The size of the revision should also be considered in the context of the magnitude of the change in the quarterly growth rates.

Table 1: Current price quarterly gross domestic product (GDP) growth in 2020
Current price GDP growth, UK, Quarter 1 (Jan to Mar) 2020 to Quarter 4 (Oct to Dec) 2020

	Blue book 2022 (%)	Blue book 2021 (%)	Revision (percentage points)
2020Q1	-1.4	-1.2	-0.2
2020Q2	-15.0	-13.1	-1.9
2020Q3	12.3	11.8	0.5
2020Q4	1.0	1.7	-0.7

Source: Office for National Statistics – UK National Accounts

5 . Impact of Blue Book 2022 on volume GDP

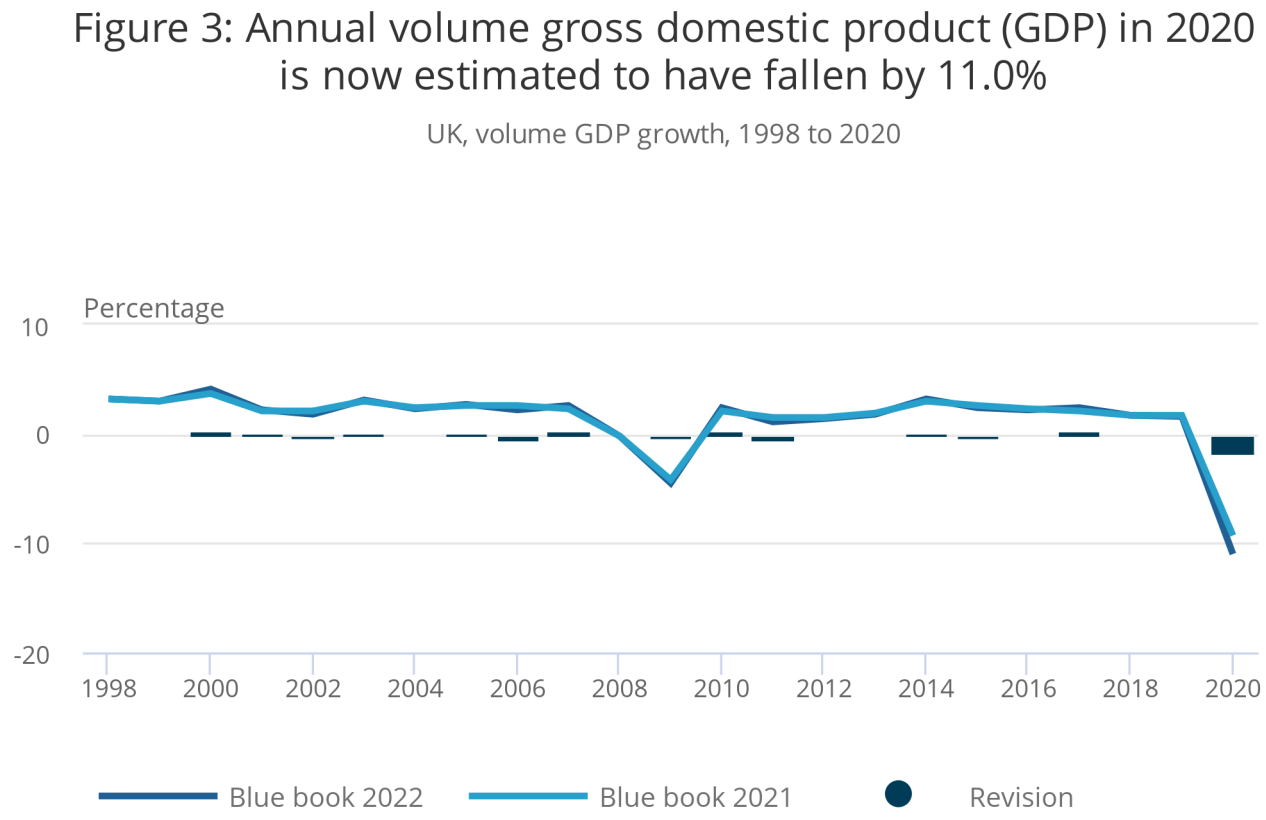
Annual revisions to volume gross domestic product (GDP)

As discussed in our Impact of Blue Book 2022 changes on current price and volume estimates of gross domestic product article, data between 1998 and 2019 are expected to be largely unchanged compared with our Blue Book 2021 estimates. The majority of the revisions follow directly from the changes to current price growth described earlier in this article.

In 2020, average volume GDP is now estimated to have fallen by 11.0%, revised down by 1.7 percentage points (Figure 3).

Figure 3: Annual volume gross domestic product (GDP) in 2020 is now estimated to have fallen by 11.0%

UK, volume GDP growth, 1998 to 2020



Source: Office for National Statistics- UK National Accounts

Alongside confronting the three measures of GDP for the first time through the SUT framework, we have also incorporated richer data across a number of GDP components. For example, in the expenditure approach, household consumption sees downward revisions in 2020 because of better information available for 2020 on areas such as spending on recreation and culture.

Quarterly revisions to volume GDP

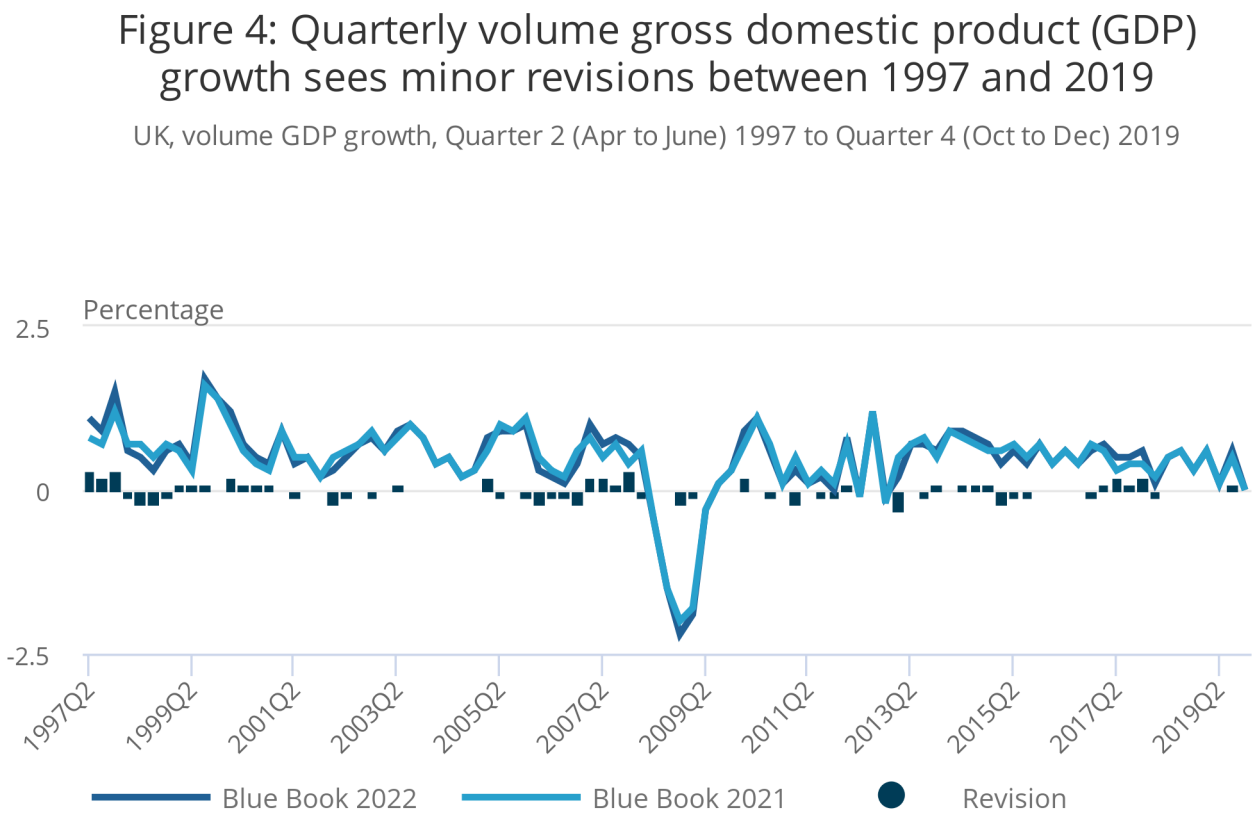
Over the time period Quarter 2 (Apr to June) 1997 to Quarter 4 (Oct to Dec) 2019, the revisions to individual quarters range from negative 0.3 to positive 0.3 percentage points, with a mean absolute revision of 0.1 percentage points (Figure 4). These revisions are in line with recent historical Blue Book revisions as shown in our GDP revisions in Blue Book: 2021 article.

Quarterly volume GDP growth over the period Quarter 2 1997 to Quarter 4 2007 sees an average 0.01 percentage point upward revision. For the period Quarter 1 (Jan to Mar) 2010 to Quarter 4 2019, quarterly volume GDP growth is on average unrevised.

The peak to trough of the 2008 to 2009 economic downturn has been revised down to negative 6.3% (previously negative 5.9%). The peak to trough quarters (Quarter 1 2008 to Quarter 2 2009) are unchanged and so is when GDP returned to pre-economic downturn levels, in Quarter 2 2013.

Figure 4: Quarterly volume gross domestic product (GDP) growth sees minor revisions between 1997 and 2019

UK, volume GDP growth, Quarter 2 (Apr to June) 1997 to Quarter 4 (Oct to Dec) 2019



Source: Office for National Statistics- UK National Accounts

Because of the large movements over the coronavirus (COVID-19) pandemic, the 2020 quarters have been shown separately in Table 2. The unprecedented shock of the pandemic led to heightened levels of uncertainty. This led to larger revisions in 2020 as the significant changes in the rate of economic growth are more difficult to measure with the same level of precision as smaller changes during more “normal” times. The size of the revision should also be considered in the context of the magnitude of the change in the growth rates.

Table 2: Volume quarterly gross domestic product (GDP) growth in 2020
Current price GDP growth, UK, Quarter 1 (Jan to Mar) 2020 to Quarter 4 (Oct to Dec) 2020

	Blue book 2022 (%)	Blue book 2021 (%)	Revision (percentage points)
2020Q1	-2.6	-2.5	-0.1
2020Q2	-21.0	-19.4	-1.6
2020Q3	16.6	17.6	-1.0
2020Q4	1.2	1.5	-0.3

Source: Office for National Statistics – UK National Accounts

6 . Impact of Blue Book 2022 on the GDP implied deflator

As discussed in our Impact of Blue Book 2022 changes on current price and volume estimates of gross domestic product (GDP) article, Blue Book 2022 will contain a small number of changes to existing deflators. Revisions to the implied deflator will be mostly on account of the indirect impacts of current price changes.

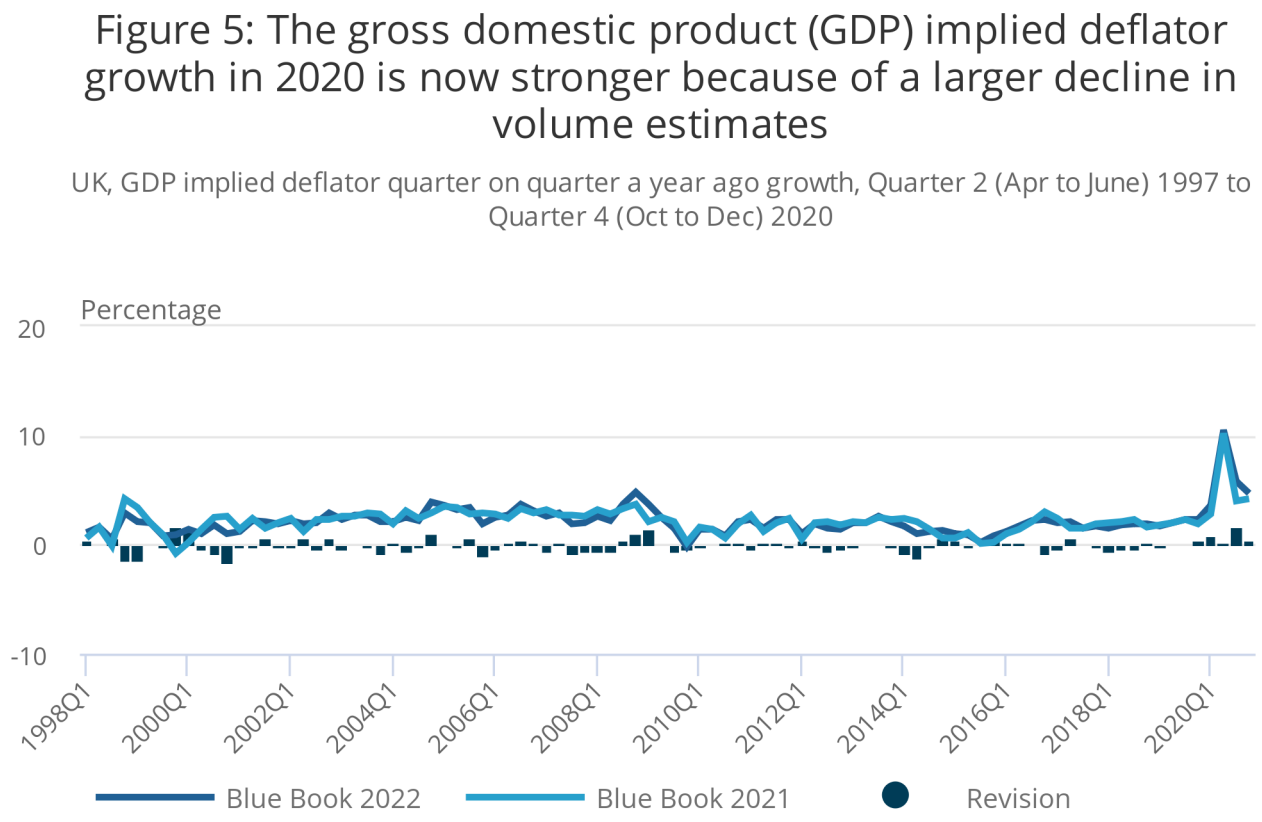
The annual average growth of the implied deflator between 1998 and 2019 remains at 2.0%, unchanged from the Blue Book 2021 average.

In 2020, the average GDP implied deflator growth is 5.9%, upwardly revised 0.8 percentage points. This is caused by the stronger decline (compared with the current price estimate of GDP) in the 2020 chain volume measure estimate of GDP.

The GDP implied deflator represents the broadest measure of inflation in the domestic economy, reflecting changes in the price of all goods and services that comprise GDP. It is important to note that the GDP implied deflator covers the whole of the economy, not just consumer spending. Movements in the GDP implied deflator in 2020 have been largely affected by the government consumption deflator, which is the expenditure that is incurred by government in producing non-market goods and services, such as health and education. The volume of government activity fell, while at the same time government expenditure increased in nominal terms. This reflects how we record volume estimates of health and education as explained in our blog, Public services: measuring the part they play in the economy through the pandemic.

Figure 5: The gross domestic product (GDP) implied deflator growth in 2020 is now stronger because of a larger decline in volume estimates

UK, GDP implied deflator quarter on quarter a year ago growth, Quarter 2 (Apr to June) 1997 to Quarter 4 (Oct to Dec) 2020



Source: Office for National Statistics- UK National Accounts

7 . Measuring GVA and the importance of intermediate consumption

The production approach (GDP (P)) is primarily concerned with the generation of gross value added (GVA). In other words, the value of all goods and services produced within the economy. To derive estimates of GVA we require information on output and intermediate consumption such that:

$$Gross\ value\ added\ =\ Output\ -\ Intermediate\ consumption$$

where:

- output: goods and services that are produced within a sector that are available for purchase outside of that sector
- intermediate consumption: value of goods and services purchased to be used up in the production of goods and services, for example, raw materials such as flour in bread-making, ink and paper in printing; specifically excludes staff costs and capital investments, which are handled elsewhere in the accounts

Double deflation and the extension of the Supply and Use Tables (SUTs) framework in volume estimates were integrated into the national accounts estimates in September 2021. Since then, monthly and quarterly industry level current price (CP) and chain volume measure (CVM) estimates are benchmarked to their annual GVA estimates as part of the annual supply use balancing process. In our current published GDP quarterly national accounts estimates, the CP and CVM data are benchmarked up to the last supply use balanced year, which is 2019.

Data for years that have not yet gone through the supply use process, that is currently for 2020 onward, are created using the short-term measures of output only. Most indicators in the short-term measures are measuring changes in turnover and output as a proxy for changes in GVA. Therefore, we assume that the intermediate consumption ratio in 2019 holds constant into 2020 onwards, in other words, input costs as a proportion of turnover or output remain fixed.

As part of Blue Book 2022, we now have actual estimates of intermediate consumption and industry-level GVA for 2020 as we have used the SUTs framework to estimate gross domestic product (GDP). Capturing this change between intermediate consumption and output is particularly important in 2020. This is because if the ratio between intermediate consumption and output is higher in 2020 than in 2019, this would lead to a subsequent downward revision in current prices, resulting in lower GVA (and vice versa). Industry-level estimates from within the SUTs framework are much richer than those in our industry short-term volume estimates. This not only reflects that a wider range of annual surveys and administrative information is used, but also that it is estimating GVA directly rather than using turnover as a proxy indicator.

We now see revisions to 2020, not only because of the new Blue Book methodology and data improvements introduced, but also because:

- the annual SUTs have much richer information from the Office for National Statistics' (ONS') annual structural surveys, such as the Annual Business Survey (ABS) and the Annual Purchases Survey
- these structural surveys and other sources provide an explicit measure of intermediate consumption and output to derive GVA
- the three measures of GDP in current and previous years prices are brought together through the SUTs framework
- deflation takes place at a far more detailed level, for each transaction and product, followed by bringing these deflated estimates together in the SUTs framework, to produce double-deflated estimates of GVA for industries

As a result of changes to the level of annual GVA, the quarterly and monthly path will also be revised to align to the new annual levels. The annual impacts for the industries are explored in Section 8. For full information on the quarterly and monthly breakdown of GDP, please see the accompanying dataset.

8 . Indicative industry impacts for volume estimates

The services sector

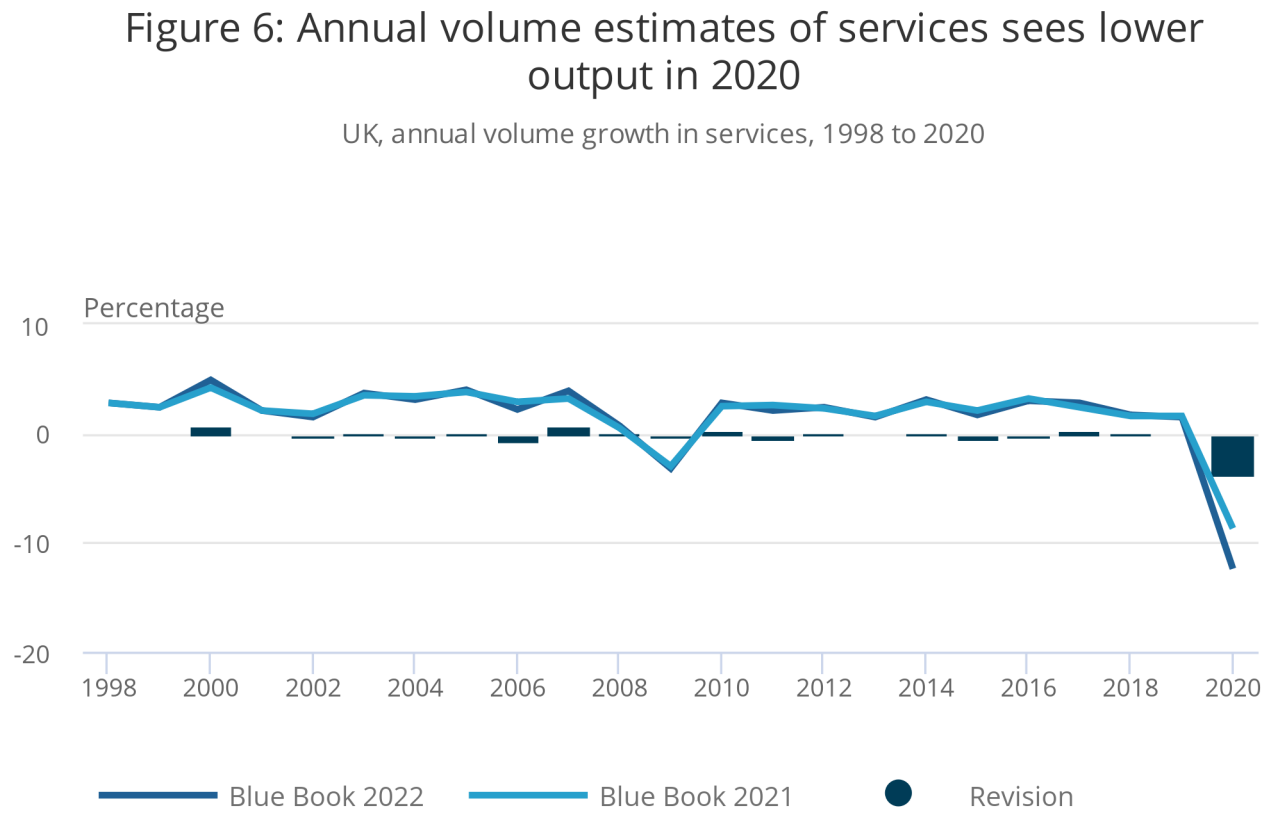
Annual volume growth over the period 1998 to 2007 sees an average 0.1 percentage points upward revision (Figure 6). Revisions to the services sector over this time period are mainly caused by revisions in financial and insurance activities as a result of changes to the measurement of insurance and pensions.

For the period 2010 to 2019 (excluding the 2008 to 2009 period disrupted by the financial crisis), annual volume services growth sees an average 0.0 (negative 0.01) percentage point downward revision. Similarly, revisions over this time are mainly caused by revisions in financial and insurance activities.

In 2020, the services sector is now estimated to have fallen by 12.4%, revised down by 3.7 percentage points.

Figure 6: Annual volume estimates of services sees lower output in 2020

UK, annual volume growth in services, 1998 to 2020



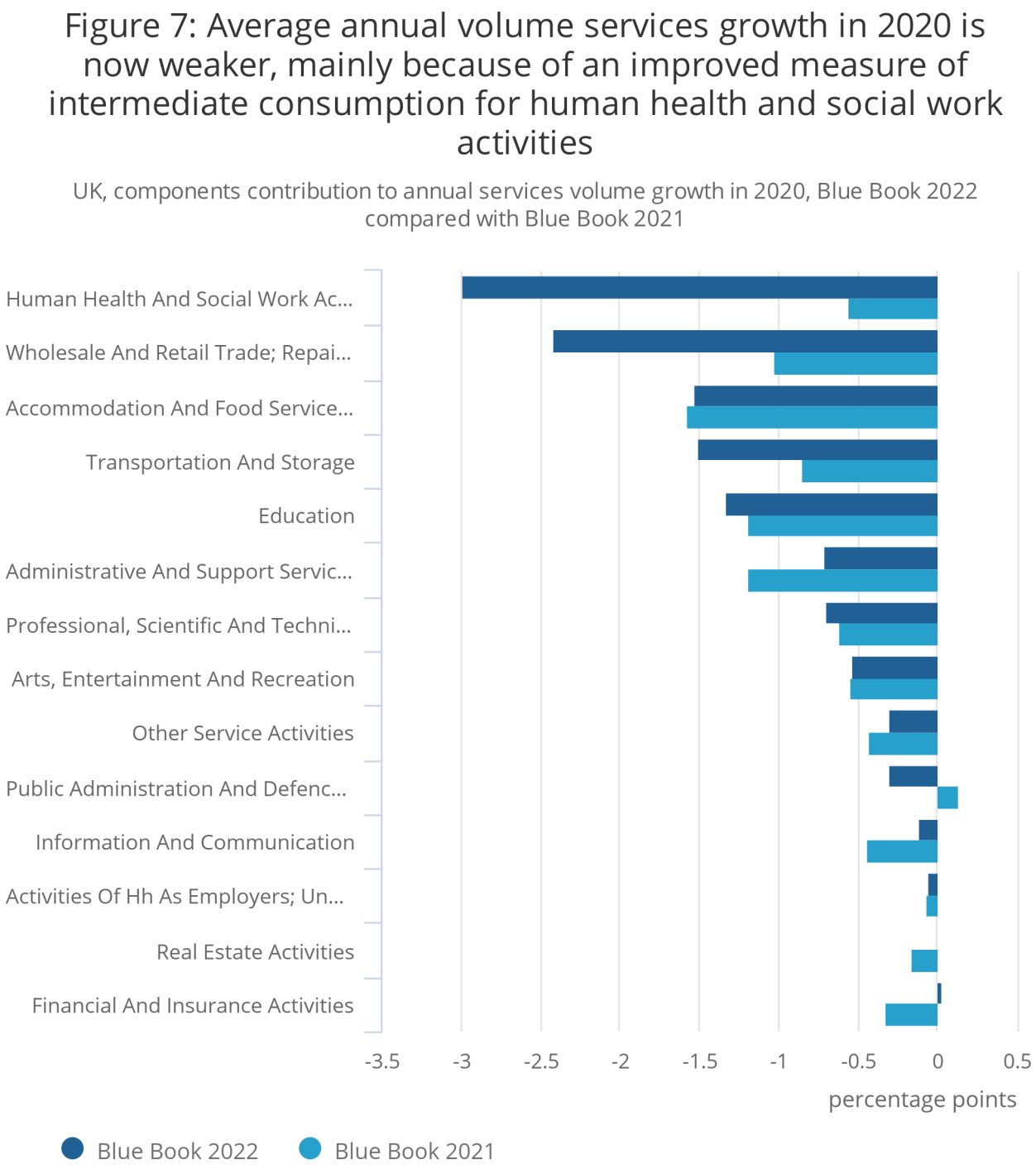
Source: Office for National Statistics- UK National Accounts

There are several services sub-sectors that see minimal revision in 2020. An example of this is the accommodation and food service activities sub-sector which is now estimated to have fallen by 40.1%, revised up slightly from a previously published 42.2% fall. In our Coronavirus (COVID-19) and the effects on UK GDP article, we describe how the coronavirus pandemic has presented challenges in how we compile timely and official estimates. Since the beginning of the pandemic, we have been providing timely indicators on the effect on the UK economy and society in our Economic activity and social change in the UK, real time indicators bulletin, whereby these indicators have been useful to supplement the data available, particularly in this sub-sector. Similarly, we were able to utilise information from our Business Insights and Conditions Survey to give us early insight into how an industry's output and prices might have changed during the pandemic, which has overall contributed to smaller revisions in this sub-sector once confronted through the Supply and Use Tables (SUTs) framework.

Figure 7 also shows that the education sector sees minimal revisions in 2020 and is now estimated to have fallen by 17.5%. As set out in our previous article on Coronavirus and the impact on measures of UK government education output, the coronavirus pandemic has had a profound impact on schools, teachers and students in the UK. The policy response to the coronavirus pandemic, including the closure of schools and the switch to remote learning, has had a particular impact on the education. As such, we proactively evolved our approach to measurement early on in the pandemic, minimising future revisions because of these changes.

Figure 7: Average annual volume services growth in 2020 is now weaker, mainly because of an improved measure of intermediate consumption for human health and social work activities

UK, components contribution to annual services volume growth in 2020, Blue Book 2022 compared with Blue Book 2021



Source: Office for National Statistics – UK National Accounts

Notes:

1. Sum of component contributions may not sum to total growth because of rounding.

The largest contribution to the revision in 2020 is from the human health and social work activities sub-sector which contributed 2.5 percentage points to the downward revision. This is discussed further in the Human health activities section.

Additionally, the second largest contribution to the revision in 2020 is from the wholesale and retail trade; repair of motor vehicles and motorcycles sub-sector, which contributed 1.4 percentage points to the downward revision. This revision comes primarily from the more detailed method for estimating distributor trading margins in the annual supply use process. The overall reduction in the volume of goods sold by wholesalers and retailers between 2019 and 2020 leads to a reduction in the volume of margins generated by those businesses. More details on how we estimate volumes of distributor trading margins, which help determine volume estimates of retail and wholesale, can be found in our Double deflation methods and deflator improvements to UK National Accounts: Blue Book 2021 article.

Case study: human health activities

Estimates of gross value added (GVA) require information on output and intermediate consumption (spending on goods and services used in the production process which are not timely and so must be estimated in the short term).

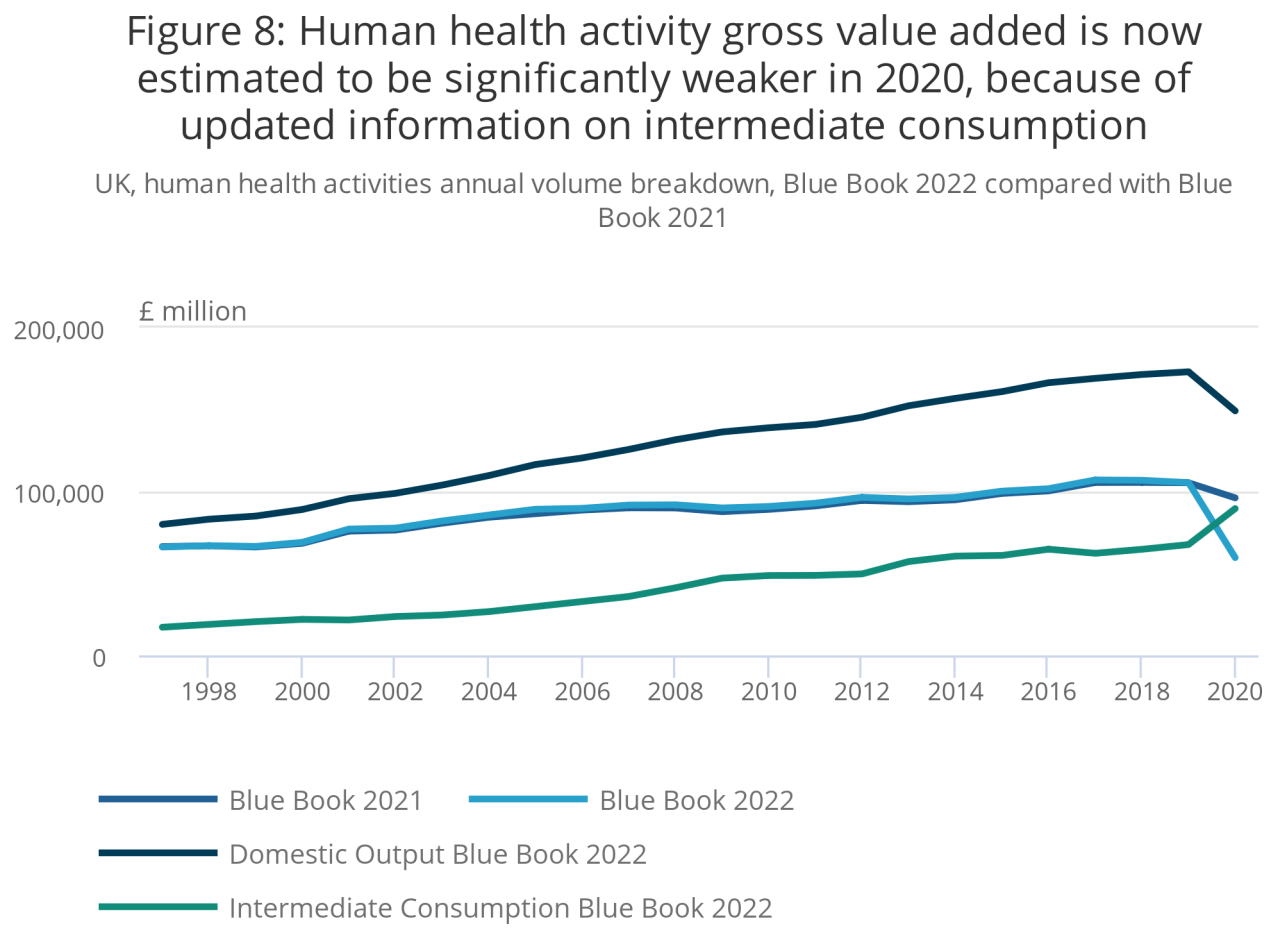
Human health is an industry dominated by central government, which typically produces three quarters of human health output. As the Office for National Statistics (ONS) has discussed before in our update on how we are measuring the response to the coronavirus pandemic, the volume of government health service output is calculated using measures of activity. The updates to human health output include our regular update to incorporate our granular annual data which provides a more comprehensive assessment of healthcare activities and a methodological improvement to our measure of GP services. In addition, the remainder of this industry is private health care services, where we have taken on richer information on output from the Annual Business Survey. Overall, human health volume output fell 14% between 2019 and 2020.

The latest available annual departmental accounts for the Department of Health and Social Care show major additional expenditures on personal protective equipment (PPE), NHS Test and Trace, extra capacity resulting from the Nightingale Hospital units, and increased use of agency staff. This additional spending contributed to intermediate consumption in current prices growing substantially between 2019 and 2020. The ratio of spending on intermediate consumption increased from 39% of output in 2019 (which was then also used for 2020) to 45% in 2020 which results in a lower estimate of value added in current prices.

In volume terms (accounting for inflation), there was a 32% rise in the spending on goods and services used by human health services. The latest data on intermediate consumption is now fully reflected in the calculation of health value added in volume terms. As a result of these changes, the value added by human health services fell in volume terms by 43% between 2019 and 2020, revised from an 8.7% fall in our quarterly national accounts (Figure 8).

Figure 8: Human health activity gross value added is now estimated to be significantly weaker in 2020, because of updated information on intermediate consumption

UK, human health activities annual volume breakdown, Blue Book 2022 compared with Blue Book 2021



Source: Office for National Statistics – UK National Accounts

Data for years that have not yet gone through the supply use process are created using the short-term measures of output only as a proxy for changes in GVA. To better account for future changes in the intermediate consumption ratio in 2021, we will use more timely and detailed information from data suppliers.

The production sector

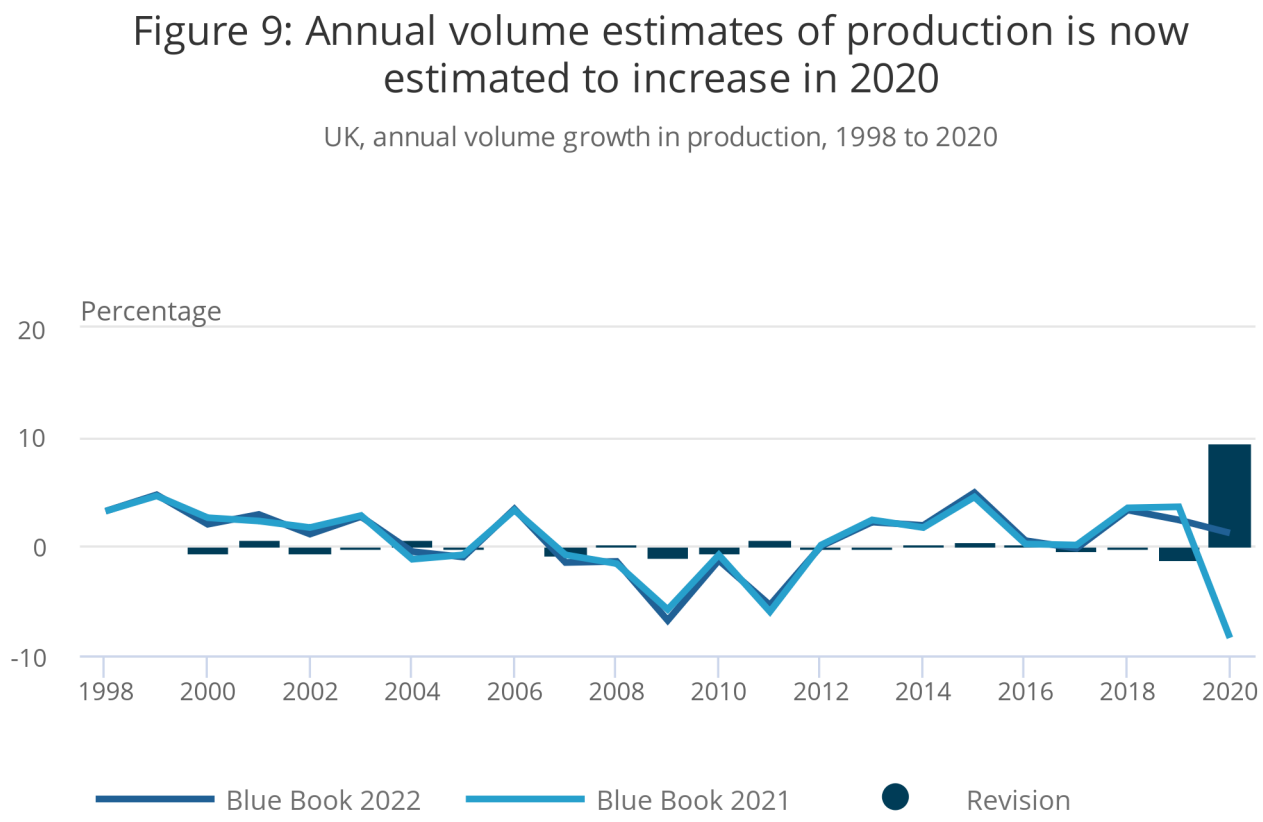
Annual volume growth over the period 1998 to 2007 sees an average 0.1 percentage points downward revision (Figure 9). Over this period, the revisions range from negative 0.7 percentage points to 0.7 percentage points.

For the period 2010 to 2019 (so excluding the period disrupted by the financial crisis), annual volume production growth also sees an average 0.1 percentage point downward revision. In common with other industrial sectors, the main contributor to revisions in the production sector was from incorporating changes to the measurement of insurance and pensions. Some of these impacts were directly caused by changes in insurance services consumed by businesses in the production sector, while some were indirect impacts as a result of incorporating this improvement across the whole economy and reconciling supply and demand.

In 2020, the production sector is now estimated to have increased by 1.2%, revised up from an 8.4% fall.

Figure 9: Annual volume estimates of production is now estimated to increase in 2020

UK, annual volume growth in production, 1998 to 2020



Source: Office for National Statistics- UK National Accounts

All four main production sub-sectors see upwards revisions in 2020, with the largest contribution from the manufacturing sub-sector. Manufacturing output is now estimated to have increased slightly by 0.1%, revised up from a previously published 8.9% fall.

Case study: the manufacturing sub-sector

The revision to manufacturing industries is partly explained by stronger current price data following the much richer information from the Annual Business Survey and the Annual Purchases Survey, which has been brought together through the SUTs framework for the first time for 2020. The initial 8.7% fall in manufacturing value added in 2020 has been revised to a 5.6% fall.

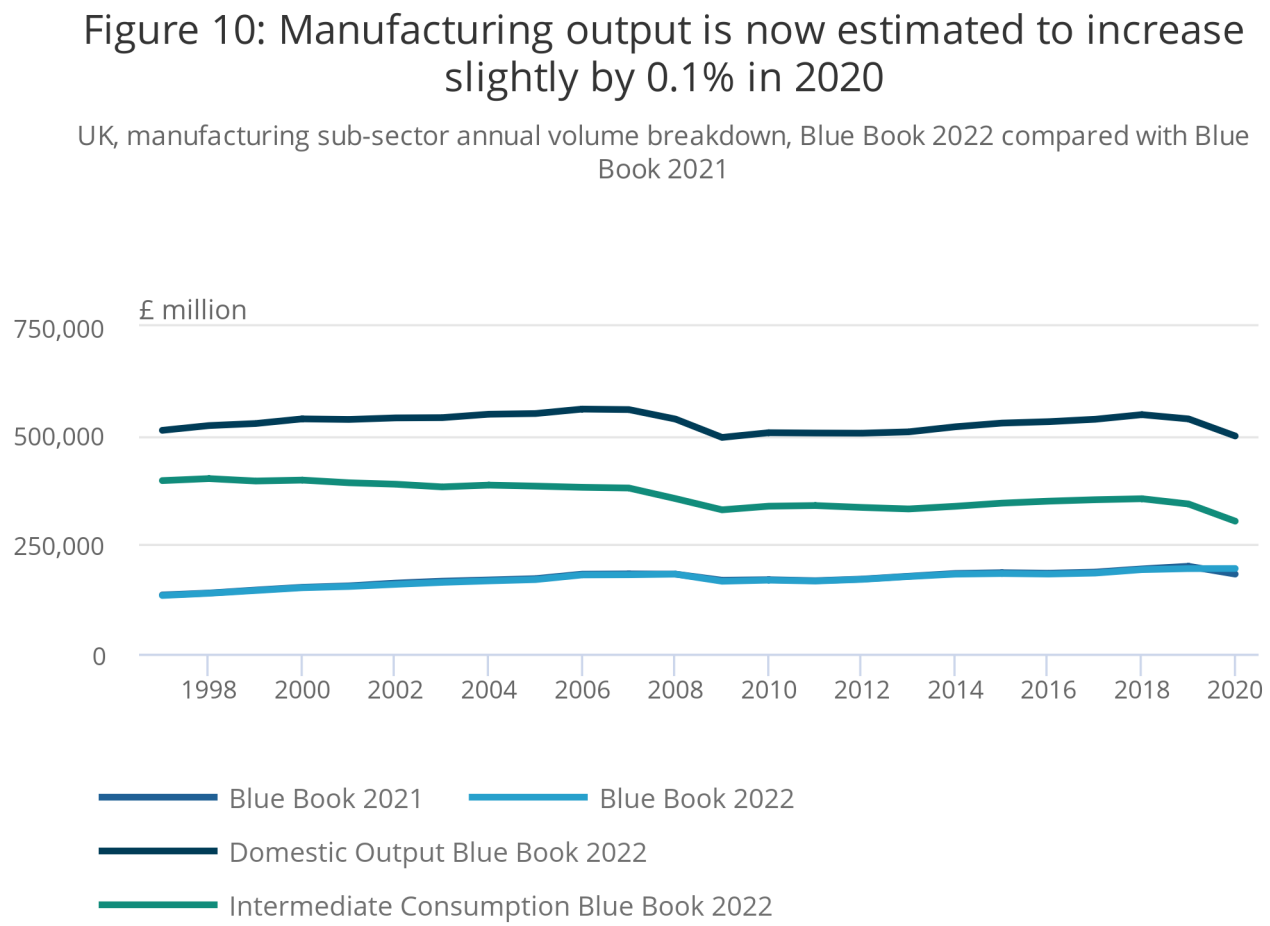
The remainder of the revision arises through deflation and confrontation of the deflated estimates, as described in our Double deflation methods and deflator improvements to UK National Accounts: Blue Book 2021 article. In summary, each product and transaction are deflated using an appropriate deflator, rather than at an industry level for our short-term estimates. These deflated estimates are then brought together and balanced so to ensure supply and use reconcile. The balanced current price and deflated estimates are then used to produce volume measures. Double deflation is widely regarded as the best approach for producing volume estimates of GVA, making best use of all available data in a single framework.

This process leads to stronger output volume growth and less intermediate consumption growth in 2020, and results in a 0.1% increase in manufacturing value added in volume terms (Figure 10).

This rise into 2020 is also caused by reduced growth in 2019, revisions to the current price data means we see growth of 1.2% in 2019 compared with 3.1% previously seen in Blue Book 2021.

Figure 10: Manufacturing output is now estimated to increase slightly by 0.1% in 2020

UK, manufacturing sub-sector annual volume breakdown, Blue Book 2022 compared with Blue Book 2021



Source: Office for National Statistics – UK National Accounts

Figure 11 shows the components contributions to the manufacturing sector growth in 2020 in Blue Book 2022 compared with Blue Book 2021. In particular, we now know that:

- many manufactured goods experienced stronger demand during the coronavirus pandemic than previously estimated, such as pharmaceutical manufacturing now estimated to be stronger because of high government demand for these products

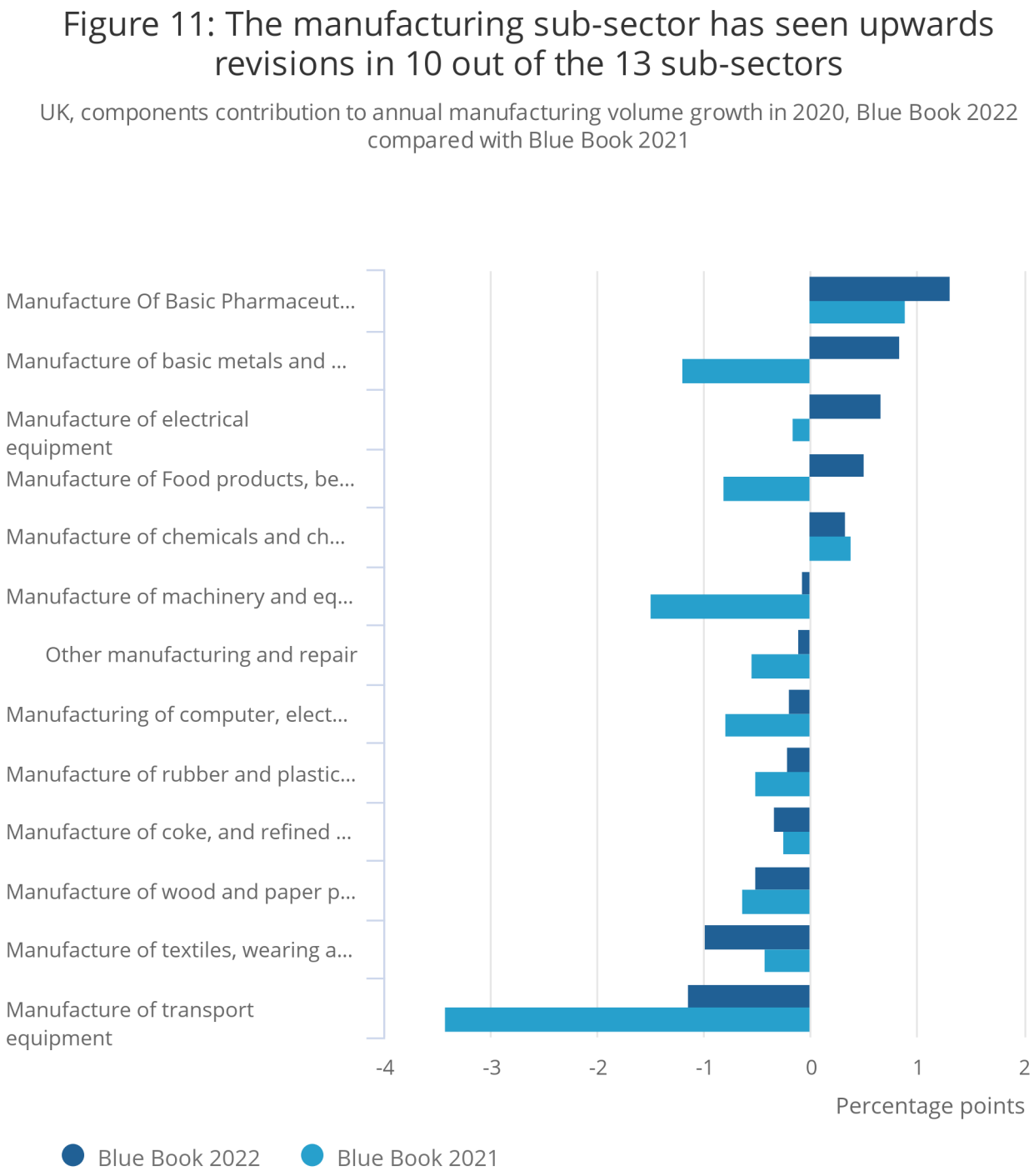
- food and drink manufacturing is now estimated to have increased in 2020, revised up from a previously published fall; this is supported by a 4% growth in household consumption volume

- computer equipment is now estimated to be stronger in 2020, this may reflect growth in working and learning from home leading to increased demand from households and government in particular

- however, some industries see weaker growth in 2020 that first estimated, for example, the manufacture of textiles, clothing and footwear sees a larger fall in both current price and volume GVA; these industries were hit by reduced demand for clothing and footwear, with lockdown leading to a lower requirement for work and holiday clothing

Figure 11: The manufacturing sub-sector has seen upwards revisions in 10 out of the 13 sub-sectors

UK, components contribution to annual manufacturing volume growth in 2020, Blue Book 2022 compared with Blue Book 2021



Source: Office for National Statistics – UK National Accounts

Notes:

1. Sum of component contributions may not sum to total growth because of rounding.

The construction sector

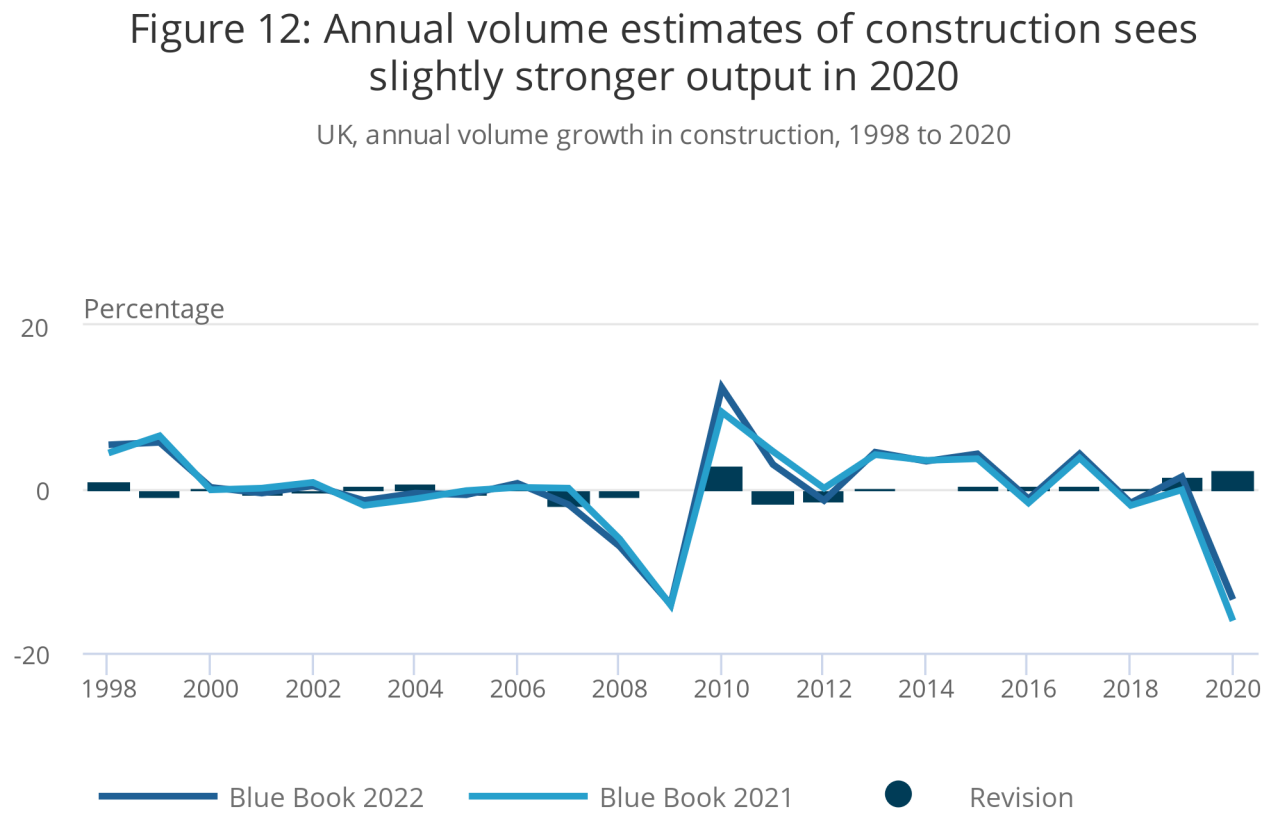
Figure 12 shows the revisions to the annual profile of the construction sector. Annual volume growth over the period 1998 to 2007 sees an average 0.1 percentage points downward revision. Over this period, the revisions range from negative 2.0 percentage points to 1.0 percentage points. Revisions to the construction sector over this time period are mainly caused by revisions to current price data as a result of changes to the measurement of insurance and pensions. This was partly because the construction sector's consumption of insurance changed, and partly because of incorporating this improvement across the whole economy and reconciling supply and demand.

For the period 2010 to 2019 (excluding the period disrupted by the financial crisis), annual volume construction growth sees an average 0.4 percentage point upward revision. The largest revision is in 2010 which has been revised up 3.0 percentage points, mainly because of the introduction of new sources and methods to measure the value of self-build housing to the economy.

The construction sector sees an upward revision to volume growth in 2020 by 2.6 percentage points. This is because of new volume estimates at the annual level on GVA in 2020. Previously, annual volume growth in 2020 was inferred from just output, using data from the Construction output in Great Britain bulletin. As part of the new approach introduced in Blue Book 2021, balanced estimates of GVA based on our structural business surveys now account for both the outputs produced and inputs consumed by the industry. The new data result in a higher estimate of output being mitigated by a similar rise in intermediate consumption. There are also some coverage differences given the use of the Annual Business Survey in their compilation. As a result, GVA estimates published in the GDP releases will be different from the construction output release. See more information in our Construction output QMI.

Figure 12: Annual volume estimates of construction sees slightly stronger output in 2020

UK, annual volume growth in construction, 1998 to 2020



Source: Office for National Statistics- UK National Accounts

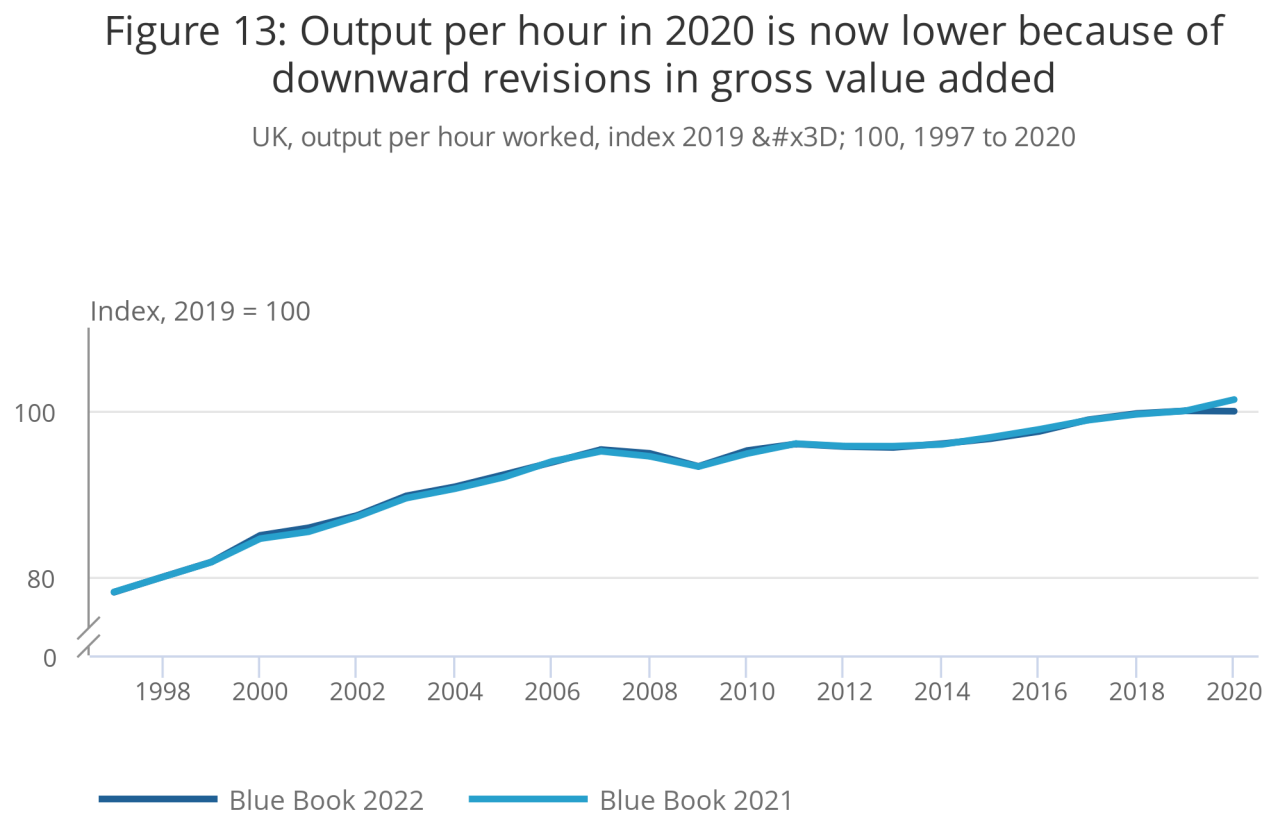
9 . Indicative industry impacts on labour productivity

Blue Book 2022 leads to relatively minor revisions in our headline measure of productivity output per hour. In 2020, the downward revision to gross value added (GVA) for the whole economy in Blue Book 2022 resulted in a downward revision to output per hour and output per worker of the whole economy of 1.4 percentage points.

This results in the year-on-year output per hour growth rate of 1.4% in 2020, published in our latest Productivity overview, was revised down being broadly flat at 0.0% (Figure 13). The year-on-year output per worker growth rate of negative 8.5% in 2020 is revised down to negative 9.8%.

Figure 13: Output per hour in 2020 is now lower because of downward revisions in gross value added

UK, output per hour worked, index 2019 = 100, 1997 to 2020



Source: Office for National Statistics- UK National Accounts

Blue Book 2022 preserves the relatively large positive between-industry contributions to productivity growth, where output and labour input shift from less productive to more productive industries. Between-industry is the contribution to productivity growth from changes in activity between industries rather within industries. This trend was observed in the periods affected by the coronavirus (COVID-19) pandemic and related restrictions. This reflects the fact that during the pandemic, the most productive sectors of the economy were more likely to remain open.

Using these Blue Book 2022 GVA estimates, the between-industry contribution to productivity growth for 2020 was 2.4 percentage points estimated using industry sections, revised down slightly from 2.6 percentage points in the latest Productivity overview.

The updated Blue Book 2022 changes will be reflected in our next Productivity overview publication scheduled to be published in October 2022.

10 . Future developments: publication and addition of 2021 to 2022 data

In Blue Book 2022, the Office for National Statistics (ONS) will make significant improvements in measuring several aspects of the national accounts. Use of Solvency II data represents a major improvement to the measurement of insurance activity, and methods changes will lead to an improved treatment of pensions in the UK National Accounts. We will also include improved annual data as well as a full confrontation of data sources through the Supply and Use Tables (SUTs) framework and application of double deflation; in particular for 2020.

We will publish further indicative impacts of Blue Book 2022 on 9 September 2022. This will provide indicative annual impacts on the sector and financial accounts and the balance of payments estimates.

The next quarterly national accounts publication, released on 30 September 2022, will incorporate these revisions into our official estimates in line with our National Accounts Revision Policy.

This will incorporate the Blue Book 2022 methodological changes, improved source data and additional updated data as would happen in all quarterly national accounts releases. This also includes new Value Added Tax (VAT) turnover data for Quarter 4 (Oct to Dec) 2021 and Quarter 1 (Jan to Mar) 2022. Based on this new information, we will also review the balancing of the three measures of gross domestic product (GDP) from 2021 onwards. These data changes are likely to lead to further revisions to the indicative estimates published in this article, as well as impacts for our pre-coronavirus (COVID-19) pandemic level recovery of GDP.

11 . Related links

Impact of Blue Book 2022 changes on current price and volume estimates of gross domestic product
Methodology 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.

Insurance and pensions methods changes: 1997 to 2020
Methodology article | Released 20 June 2022
Improvements in calculating estimates for the insurance companies and pension funds subsector. Changes to the financial and non-financial accounts resulting from methods and data source changes.

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.

Chain-linking in the UK National Accounts: Blue Book 2022
Article | Released 20 June 2022
An explanation of the impacts the coronavirus (COVID-19) pandemic has had on the output and expenditure structures of the UK economy over this period. These affect how we compile volume estimates of gross domestic product (GDP) through chain-linking. Includes proposed changes we will be making to Blue Book 2022 in response to these impacts.