



An Experimental Statistics Publication for Scotland

ECONOMY AND LABOUR MARKET

GDP Monthly Estimate, Scotland

July 2020

23 September 2020

This is the fourth publication of monthly GDP statistics for Scotland, which have been developed to help track the economic impact of the COVID-19 pandemic. These are designated as **experimental official statistics**. This means that they are still in development but have been released to enable their use at an early stage. All results are provisional and subject to relatively high levels of uncertainty.

Main Findings

- In July, Scotland's GDP is provisionally estimated to have increased by 6.8% compared to June. This follows revised estimates of 6.7% growth in June and 3.1% May, and falls of 20.1% in April and 4.9% in March, consistent with the Quarterly GDP First Estimate publication on 16 September.
- Despite the increases in the last three months, GDP remains 10.7% below the level in February, prior to the direct impacts of COVID-19. Compared to the lowest point in April, this means that just over half of the lost output has been recovered.
- In July there has been further growth in the three main sectors of the economy. Output in the Services sector is estimated to have increased by 5.5% compared to June, but remains 11.9% below its level in February. Output in the Production sector increased by 8.6%, but remains 5.4% below its level in February, and Construction sector output is estimated to have increased by 23.4% in July, but remains 11.9% below its level in February.

Important Information About This Release

These results are provisional and likely to be revised in the coming months as data sources are updated and methods are further improved.

Estimates of monthly GDP growth are inherently more volatile than quarterly or annual growth. In normal times it would be sensible to concentrate on the smoother rolling quarterly growth rate (latest three months compared to previous three months). However, due to the exceptional economic circumstances at this time, results in this release are mostly presented in terms of monthly growth rates, or the cumulative change over the course of the five months since February.

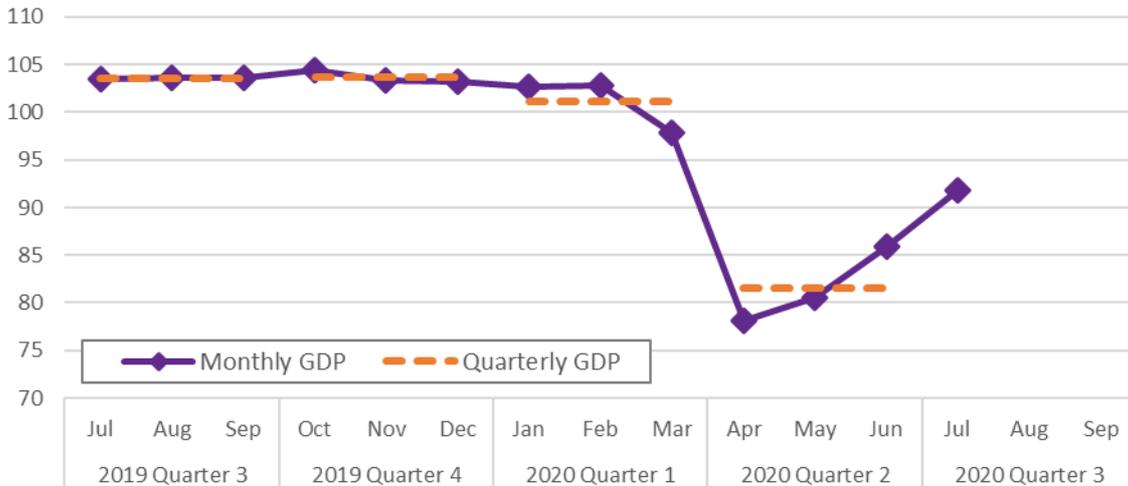


Scotland's GDP increased by 6.8% in July, but remains 10.7% below February

Scotland's onshore GDP (which does not include offshore oil and gas extraction) is provisionally estimated to have increased by 6.8% in real terms during July. This follows revised estimates of 6.7% growth in June and 3.1% May, and falls of 20.1% in April and 4.9% in March. These results have been updated to be consistent with the overall quarterly fall of 19.4% which was published for the April to June period in the [First Quarterly Estimate of GDP](#) on 16 September.

Comparison of Quarterly and Monthly GDP

Chained volume measure, 2016=100



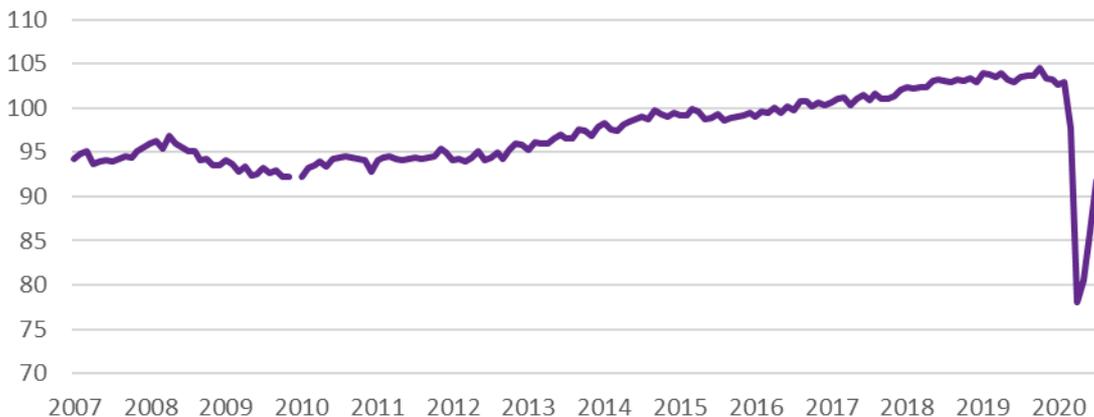
Notes:

(1) Users are advised to be mindful that the axis on this chart does not start at zero.

When viewed across the five months of March to July, output remains 10.7% below the level in February. At the lowest point in April, GDP had fallen by 24.1% in the two months since February. The unprecedented nature of this drop in output can be contrasted to the financial crisis and recession in 2008 and 2009, where GDP decreased by around 4% over the course of 18 months.

Monthly GDP Index, January 2007 to July 2020

Chained volume measure, 2016=100



Notes:

(1) Monthly estimates begin in 2010. Results for 2007-2009 are an illustrative path based on quarterly GDP.

(2) Users are advised to be mindful that the axis on this chart does not start at zero.

These results remain broadly similar to the pattern seen across the UK as a whole over the course of the last five months, [most recently updated by ONS on 11 September](#), and largely reflecting the direct economic impact of the COVID-19 pandemic and the reduction in economic activity starting during the lockdown phase after 23 March.

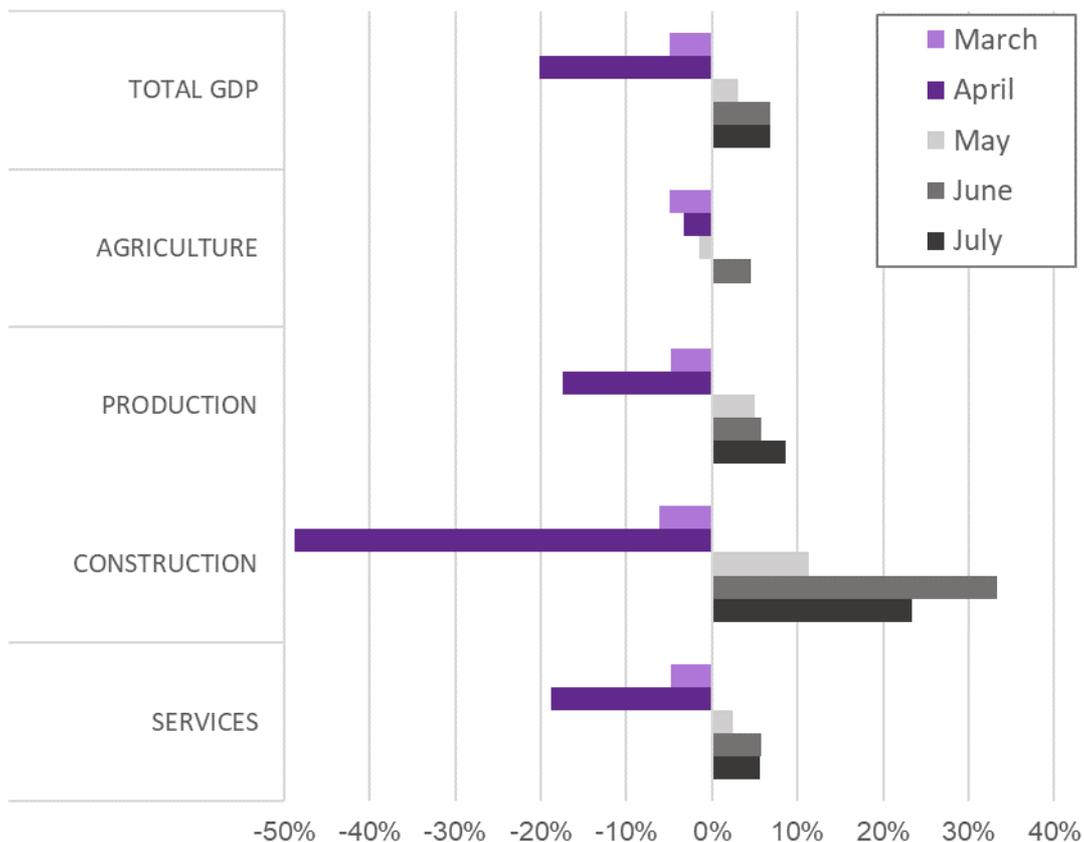
From June onwards there have been differences between Scotland and other parts of the UK in the dates at which certain types of business have been permitted to reopen. In June, the main differences applied to non-essential retail, with shops in Scotland permitted to reopen around two weeks later than elsewhere in the UK. In July, there were some differences between the dates for re-opening parts of the hospitality industry and some other personal services such as hairdressers. Accounting for these timings has presented a challenge for processing some of the business survey data used for GDP, especially where firms operate across different parts of the UK. Adjustments have been made to ensure that the output estimated for Scotland represents the time period during which businesses were permitted to be open. The key dates for reopening in Scotland can be found [here](#).

Output continued to recover in most sectors of the economy during July

Output in the Services sector is estimated to have increased by 5.5% compared to June, but remains 11.9% below its level in February. Output in the Production sector increased by 8.6%, but remains 5.4% below its level in February, and Construction sector output is estimated to have increased by 23.4% in July, but remains 11.9% below its level in February. In July, output was estimated to be broadly flat (-0.1%) in the Agriculture sector.

GDP Monthly Estimates: March to July 2020

percentage change month on month, by SIC 2007 main industry sector



Agriculture, Forestry & Fishing

Output in the Agriculture, Forestry and Fishing sector is estimated to have fallen by 0.1% in July. This follows an increase of 4.5% in June, after falling by 1.5% in May, 3.2% in April and 4.9% in March. Compared to February, total output in the sector remains down by 5.3%

The largest component to change in this sector has been from fish landings, which dropped sharply during April but have picked up in the three months since. Agriculture and Forestry output is usually estimated based on smooth forecasts from annual data, but has been adjusted to reflect reported reductions in production and demand for some products during the lockdown phase.

Taken over the whole of Quarter 2 (April-June), output in the sector reduced by 5.8% compared to Quarter 1.

Production

In the production sector, output is estimated to have increased by 8.6% in July, following increases of 5.8% in June and 4.9% in May. This follows contractions of 17.5% in April and by 4.9% in March. Output increased in all of the four main subsectors during July, but remains 5.4% down compared to February.

The largest part of the Production sector is manufacturing, where output is estimated to have increased by 7.0% in July, following increases of 8.1% in June and 7.0% in May. Total manufacturing output remains 4.1% down from February.

Most of the results for the production sector are estimated using monthly business survey data, or other monthly data sources such as electricity supply and demand. For many of the industries within the Production sector, results can be quite volatile from month to month.

Taken over the whole of Quarter 2 (April-June), output in the Production sector reduced by 15.7% compared to Quarter 1, including a fall of 15.5% in Manufacturing.

Construction

In the construction sector, total output is estimated to have increased by 23.4% in July, after increasing by 33.4% in June and 11.3% in May and falling by 48.8% in April and 6.1% in March. Construction output remains 11.9% down from February.

There is particular uncertainty in the estimates for construction sector output in Scotland at this time due to there being very limited short-term regional data on output in the industry. At present, monthly output is estimated based on the results for Great Britain as a whole adjusted using data on the relative differences in uptake of the [Coronavirus Job Retention Scheme](#) and some data available from the Business Impact of Coronavirus Survey (BICS). These results will remain under review and be updated when any other relevant data becomes available.

Taken over the whole of Quarter 2 (April-June), output in the Construction sector reduced by 41.5% compared to Quarter 1.

Services

Overall output in the services sector is estimated to have increased by 5.5% July, after increasing by 5.7% in June and by 2.4% in May and falling by 18.9% in April and 4.9% in March. Compared to February, total output in the sector remains down by 11.9%.

Within services, there is a wide variation between industries, although since February output is down in all subsectors except for Real Estate (which is mostly the imputed rental of owner-occupiers) and Public Administration & Defence where output remains broadly flat each month.

While some industries have recovered close to their level of output in February, such as the retail and wholesale sector (-2.5%), other sectors remain considerably below normal levels of output, such as accommodation and food services (-52.2%). This reflects the ongoing disruption to normal business activity and reduced demand from consumers.

Estimates for much of the services sector are based on monthly business survey data, including the retail sales inquiry, or other monthly data sources including passenger transport information. In the last two months, specific adjustments and checks have been required to account for the different timings of re-opening in Scotland compared to England and Wales. The methodology used for these adjustments remains under review and will be updated and extended as other industries fall into scope and more data become available.

Estimates for Public Administration & Defence, Education and Health are mostly based on annual data sources which are normally forecast smoothly for Quarterly GDP. Specific adjustments are being developed for these industries to accurately reflect the impact of COVID-19 on the provision of public services, such as lower levels of education activity due to school closures and reductions in routine health service activity. In the short term, provisional adjustments have been made which are broadly in line with the estimates of monthly GDP for the UK as a whole, and will be reviewed and revised over time. There is a particular methodology challenge for the education sector in accounting for the school holiday period in monthly seasonally adjusted terms, because of the shift from schools operating with most pupils at home before the holidays and then returning to normal after the holidays. Initial estimates have been made which spread the level shift of this re-opening smoothly over the course of this holidays. Taken together with private sector activity in higher education and other training, this has seen education output increase by 17.7% in July, back to 28.5% below its February level.

Taken over the whole of Quarter 2 (April-June), output in the Services sector reduced by 18.7% compared to Quarter 1.

Revisions

Revisions to previous estimates are now detailed in Table R1 on the downloadable tables.

Quarterly results in this release have not been open for revision earlier than 2020 Q2, in line with the Quarterly GDP First Estimate for Quarter 2, published on 16 September.

Total GDP has been revised to a fall of 19.4% in Quarter 2, up slightly from the provisional estimate of 19.7% in the June Monthly GDP release.

About These Statistics

Gross Domestic Product (GDP) is the broadest summary measure of economic activity, covering the activities of households, businesses and government as both producers and consumers.

Changes in GDP for the whole economy are estimated using the output of each industry. Monthly estimates have been developed as a faster indicator of the changes in output to help monitor the economic impact of the COVID-19 pandemic and policies in place to curtail its spread. These are intended to assist with analysis of the economy, including short term modelling and forecasting.

Data Sources

The Scottish Government produces estimates of quarterly GDP growth for Scotland using data sources and methods which are very similar to those used by ONS for the UK as a whole.

A large proportion of the data used for quarterly GDP is built up from monthly information. We have developed new methods and systems to use these data for monthly estimates. At the same time, we are continuing to seek out additional data and information which help to provide better monthly estimates for the parts of the economy covered by other data sources.

We are grateful to the data suppliers across other Government departments, the ONS, and businesses which have been able to supply us with timely monthly data in addition to the regular quarterly data we receive.

Information on the data sources and methods used for quarterly GDP can be found [here](#). Information relating to the ongoing development of monthly GDP will be added in due course.

Methodology

Around 45% of GDP by weight is based on the Monthly Business Survey and Retail Sales Inquiry. These surveys collect turnover data from all large businesses and a sample of smaller firms across the manufacturing and services sectors.

For quarterly GDP, estimates for each industry are produced using stratified ratio estimation. This approach requires extensive data processing and quality assurance checks which take several weeks to complete each quarter. This cannot feasibly be replicated on a monthly basis.

For monthly GDP, a faster method has been developed to provisionally estimate growth for each industry using a dynamic panel of companies which are surveyed in consecutive months. The methodology for this panel approach, for example to adjust the results so that smaller companies are appropriately weighted, remains in development and will be improved over time. Estimates are constrained to the more robust quarterly results for previous periods.

Around 7% of GDP by weight is based on other data sources which are specific to Scotland, such as volumes of output by industry or electricity generation. Most of these sources have already been supplied to us as monthly data, or have been supplemented by additional monthly information during the development of monthly GDP.

Around 30% of GDP by weight is usually based on quarterly forecasts from annual data sources for Scotland. This includes the activities of much of the public sector, such as civil service, education and health services, as well as other industries including agriculture, and the imputed rental of owner-occupiers.

The output of these industries is normally assumed to move smoothly over time, with little variation from trend, and it would be a trivial process to interpolate a monthly path instead of quarterly. However, at this time of widespread economic disruption, the forecasts for these industries must be reviewed for quarterly GDP as well as monthly. For example, adjustments are needed to account for changes in the provision of education via remote learning. Provisional adjustments have been made which are consistent with the approach adopted by ONS for the UK and explained [here](#), with similar adjustments made for consistency in health and other sectors.

Around 18% of GDP by weight is based on estimates which are derived as shares of UK output, using indicator data such as Scottish employment shares, or are simply modelled to grow in line with the same industry across the UK as a whole. For example, this includes industries such as financial services, where quarterly output in Scotland is estimated using an employment based regional model run by the Bank of England for ONS.

At present, where the data used to take a share of UK output are not available for the latest months, many of these industries are forecast to grow in line with the UK as a whole, consistent with the latest UK monthly GDP release.

For all industries where estimates are not based directly on monthly data for Scotland, we are continuing to investigate potential sources of new data or information which can be used to ensure that estimates of short term output are as accurate as possible. Updates will be applied when possible in future releases.

Accuracy and Reliability

In all economic statistics there is a trade-off between timeliness and accuracy. Early estimates are always provisional and are revised over time as more complete data become available.

It is not possible to assess the accuracy of monthly GDP growth rates because there are no “true” values to compare them with. However, the accuracy of the rolling quarterly growth rate (latest three months compared to previous three months) can be compared to the corresponding quarterly GDP growth rate to indicate how reliable the short term measures are over a horizon of three months – the farthest out that the monthly measures go without being constrained to Quarterly GDP.

Analysis of the estimates over the last five years (20 quarters to 2020 Q1) indicates that there has been an average absolute revision of around 0.2 percentage points between the provisional quarterly growth rate in monthly GDP and the corresponding estimate from quarterly GDP, with revisions slightly more likely to be down than up (-0.05%).

Under the current circumstances, with unprecedented changes in output, and data collection issues including falling sample sizes and response rates, it is likely that this margin of error will be higher, and that measures of quarterly and annual GDP could also be revised considerably over time.

In normal times, these levels of revision might be considered too high to make the trade-off between timeliness and accuracy worthwhile. However, during the current economic crisis, and based on the forecast level of disruption which is expected to occur, we judge that there is public value in producing these estimates to help with the analysis, modelling and forecasting of output in Scotland.

An Experimental Statistics Publication for Scotland

Experimental statistics are a subset of newly developed or innovative official statistics undergoing evaluation. They are published to involve users and stakeholders in the assessment of their suitability and quality at an early stage.

The Office for Statistics Regulation publishes guidance on experimental statistics [here](#).

The Scottish Government is developing these estimates on an ongoing basis, and is grateful to the ONS, BEIS, and other departments and businesses which have assisted in the identification or delivery of earlier data sources which enable the timely production of monthly GDP.

We welcome any feedback on the development of these statistics, using the contact details below.

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Complaints and suggestions

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