National Institute
Monthly GDP Tracker

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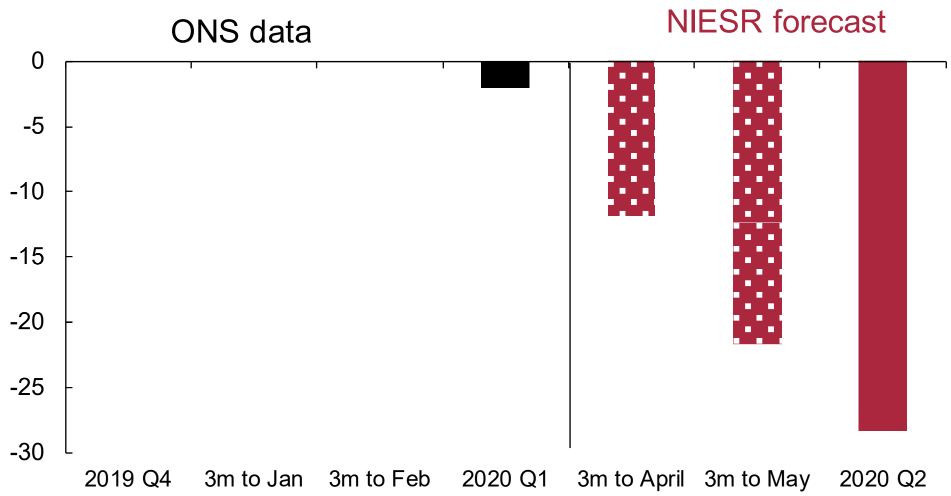
Kemar Whyte

Economy contracting at rapid pace

Figure 1 - UK GDP growth (3 months on previous 3 months, per cent)



Main points

- The ONS preliminary estimates suggest that growth declined by 2.0 per cent in the first quarter of 2020, broadly consistent with what we suggested it could be last month (figure1.)
- The substantive contraction in growth reflects negative contributions across all the headline sectors.
- Output declined by 5.8 per cent in March itself, mainly due to record falls in construction and services.
- The latest ONS estimates are preliminary and largely uncertain but continues to suggest GDP is around 25 per cent smaller when the lockdown is in place.
- In light of the preliminary release, we forecast growth in the second quarter to decline sharply by about 25 to 30 per cent.

"In a period of radical uncertainty, the short-term economic impact of Covid-19 is becoming clearer with the publication of GDP data for March, where output is expected to be lower by about 25 per cent in months when the lockdown is in place. Restarting the economy by promoting activities in upstream sectors such as construction, some manufacturing and the government will increase overall activities via helpful spillovers. But without a vaccine, there is significant risk of a second wave which could trigger a further setback in the economy."

Dr Kemar Whyte

Senior Economist - Macroeconomic Modelling and Forecasting

Economic setting

The COVID-19 pandemic and the government measures to prevent its spread are putting a severe strain on the UK economy. All major industries are being affected, directly or through spillovers, by closures, weak local and global demand, lockdowns and social distancing measures. There has also been a marked rise in unemployment since the turn of the year.

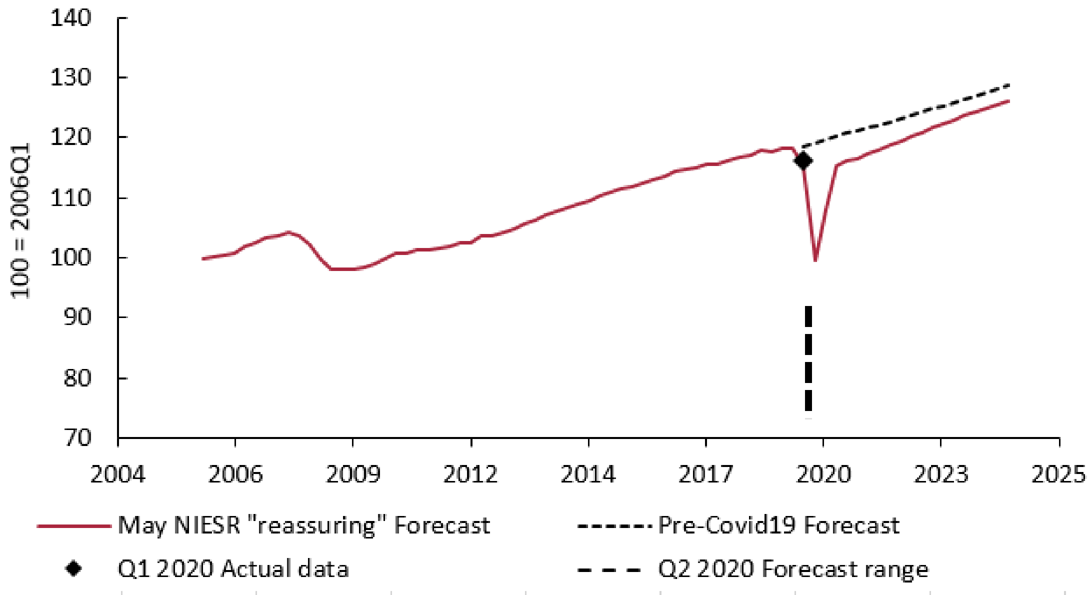
The unprecedented situation means that the outlook for the UK economy remains radically uncertain. It will depend on how the medical situation develops, the policies adopted by the government, and the degree to which businesses are affected. At this stage, these are still largely unknown factors. Recognising these uncertainties and unknowns, this Tracker once again aims to provide an informed judgement of where the economy could be in the short-term.

The ONS' estimated 6 per cent fall in GDP in March, while subject to revision, helps us to gauge the extent to which GDP is being reduced when the lockdown is in place. Roughly, the lockdown was in place for the last week of the month (from the 23 March) so, if GDP was flat in the first three weeks, it can be inferred that it was around 24 per cent lower in the last week. That suggests that around a quarter of GDP is lost when the lockdown is in place. But there were two other things going on. First, some activity had stopped voluntarily before the lockdown was imposed. That would have reduced GDP in the first three weeks of the month. Second, there was some temporary extra activity due to panic buying and other preparatory measures that would have boosted GDP both before and after the lockdown was imposed. As such, it is not possible to see the pure lockdown effect in the March data alone and the effect of the lockdown on GDP remains uncertain.

Our recent *Review* had set out a main-case forecast scenario where UK GDP falls by 7 per cent in 2020 and then rises by 7 per cent in 2021 as the economy returns towards normal. This comforting scenario is conditioned on the assumption that the lockdown can be progressively eased in a relatively safe way before a vaccine becomes available. In that main-case forecast scenario, we built in a fall of GDP of 2 per cent in 2020Q1, in line with today's data, and a 15 per cent fall in 2020Q2, followed by a rise of around 10 per cent in 2020Q3 and 7 per cent in 2020Q4. GDP returns to its end-2019 quarterly level around the end of 2021 (figure 2).
The Euro-Area, which has been dealing with the virus the longest, after China, saw sharp contractions in growth in March. PMIs suggest that most major sectors experienced severe declines in output, and preliminary Eurostat estimates suggest that GDP fell by 3.8 per cent in the first quarter of 2020.

The uncertain environment we find ourselves in also means that data collection and measurement become even more difficult. The ONS has published a Note highlighting the statistical challenges it faces in measuring GDP in light of Covid-19 disruptions. The practical challenges that arise in compiling GDP will only serve to heighten the level of uncertainty.

Figure 2: GDP forecast compared to pre-Covid-19



News in latest ONS data

The latest monthly ONS data was stronger than we had anticipated last month, with data confirming GDP declined by 2.0 per cent in the three months to March. The estimates released today are, to great extent, uncertain and subject to revision. Figure 3 shows how our short-term forecasts for recent quarters have changed as new information has become available.

Figure 3 - Evolution of the NIESR quarterly GDP forecast (3 months on previous 3 months, per cent)

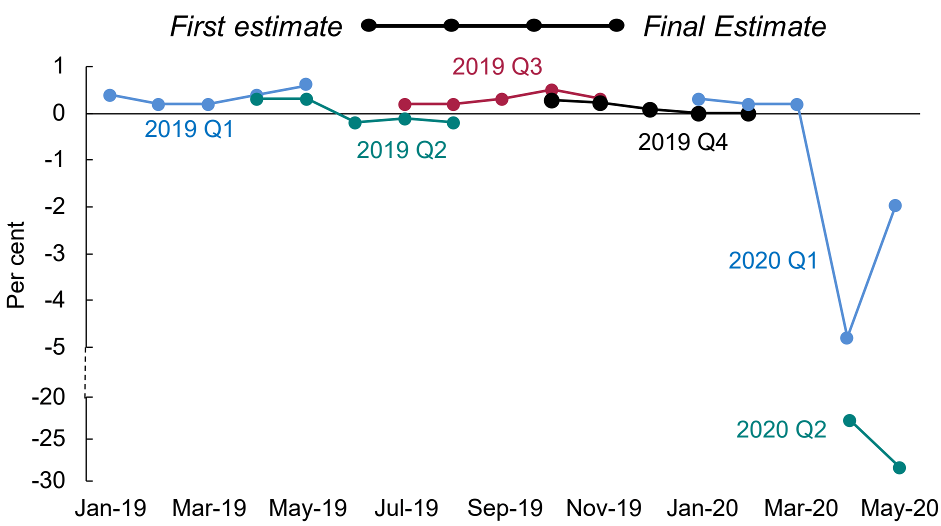


Figure 4 shows a heat map of the data surprises across sectors in the monthly data, relative to last month's GDP Tracker, highlighting the sectors where the surprises are large relative to the volatility of the output data. This month, there were negative surprises in only two sectors, extraction and government. There were large positive surprises in transport, storage and communication, distribution and hotels, construction, and business services.

Figure 4 - Surprises in monthly data

	03/19	04/19	05/19	06/19	07/19	08/19	09/19	10/19	11/19	12/19	01/20	02/20	03/20
Business services and finance	0.0	-0.7	-0.3	0.0	0.0	0.0	-0.5	0.0	-0.7	0.3	-0.1	0.1	4.2
Government	-0.2	-0.5	0.0	0.1	0.4	0.5	-0.3	0.1	0.2	0.2	0.3	-0.1	-4.5
Distribution , Hotels and Restaurants	0.1	-0.1	0.0	0.0	0.1	-0.2	-0.4	0.0	-0.5	-0.6	0.2	-0.4	4.2
Transport, Storage and Communication	-0.2	0.1	-0.1	0.1	0.0	-0.3	0.1	0.0	-0.5	0.3	-0.4	-0.2	4.5
Manufacturing	0.7	-1.5	-0.3	-0.1	0.2	-0.3	0.1	0.3	-0.7	0.0	0.2	0.3	4.1
Electricity	0.0	1.2	1.4	0.0	-0.4	-0.5	0.3	0.3	-0.1	-0.4	-1.7	-1.1	3.3
Extraction	0.8	-0.3	0.0	-0.1	-0.1	-0.1	0.5	-0.8	0.3	-0.8	0.4	-0.3	-4.0
Water Supply, Sewerage, Waste Management	-1.3	-0.2	0.8	0.0	1.2	0.5	0.0	-1.6	-0.9	0.7	1.3	-1.5	0.8
Construction	-0.6	-0.4	0.1	-0.1	0.0	0.0	0.0	-1.1	0.3	-0.2	-0.3	-0.8	4.0
Agriculture	1.2	-0.6	-0.1	-0.3	-0.1	-0.3	-0.5	0.5	-0.4	-1.7	1.6	-1.6	-0.1

← below expectation   above expectation →

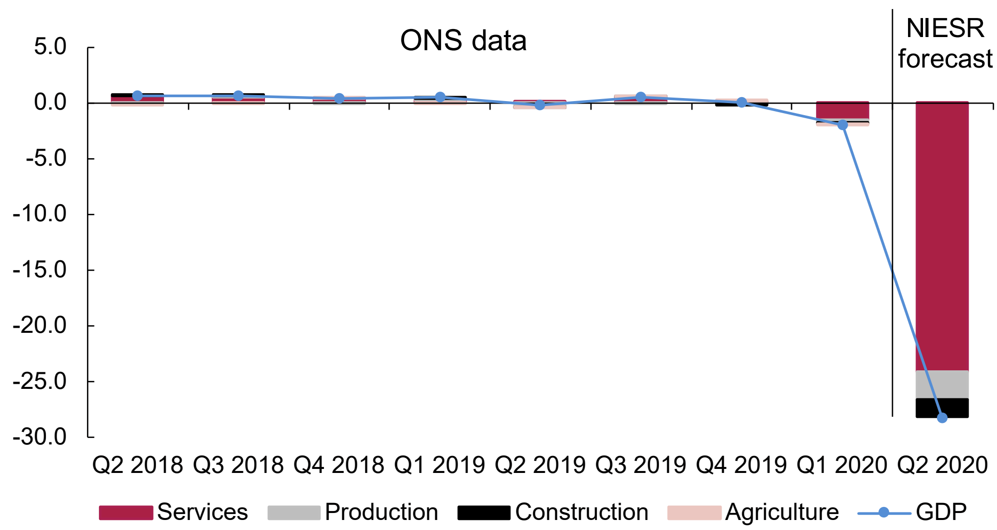
-3   -1   0   1   2

Note: Cells show forecast errors as a fraction of the standard deviation of errors for each series. Green cells are greater than expected, red cells are less than expected.

Sectoral detail

The economy contracted by 2.0 per cent in the three months to March. The decline in growth in the last three months was underpinned by a negative performance in almost all sectors. As the impact of Covid-19 and containment measures took effect, construction and services suffered sharp declines. The growth forecast for the second quarter of 2020 is predicated on a significant negative effect of the COVID-19 virus. (figure 5).

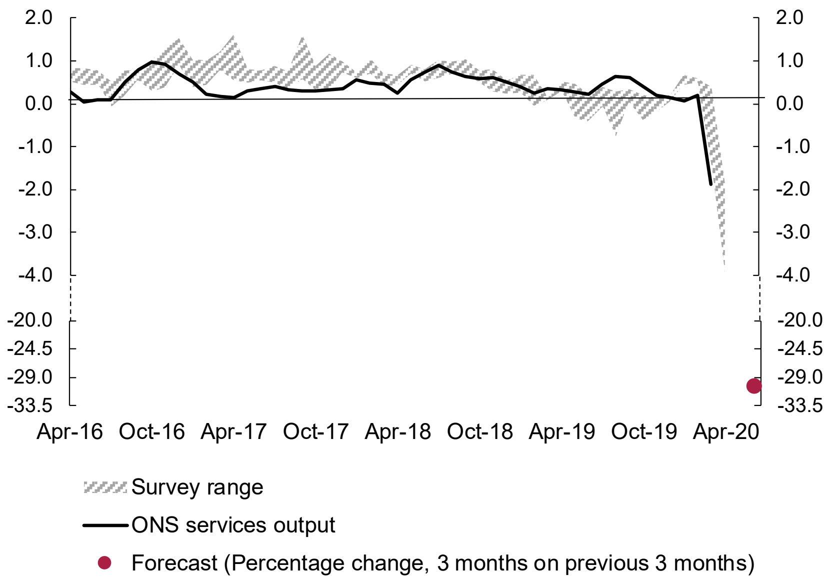
Figure 5 - Contributions to quarterly GDP growth (percentage points)



Services (80 per cent of GDP)

According to ONS data, the services sector fell by 1.9 per cent in the three months to March, an estimate that is stronger on the upside than we predicted last month. The fall in the services sector was driven by declines in almost all industries, most notably in travel agents which fell by 23.6 per cent and accommodation services which fell by 14.6 per cent. We forecast growth in the service sector to decline by 30.0 per cent in the second quarter of 2020 (figure 6), owing largely to the negative impact of the outbreak COVID-19.

Figure 6 - ONS service sector growth (3 months on previous 3 months, per cent) compared with swathe of business survey balances (standardised)



Note: The shaded swathe shows the highest and lowest values each month of a range of business survey balances that have been standardised so that they have the same mean and standard deviation as the quarterly growth of the ONS series. Source: ONS, CBI, Markit, Bank of England Agents, EC, NIESR calculations.

The survey balances point to a sharp contraction in growth in the private service sector, as shown by the swathe of survey indicators in figure 5. The headline business activity balance in the IHS Markit/CIPS UK services registered at 13.4 in April, down from 34.5 in March. Survey evidence overwhelmingly suggests that the lower demand continues to be dominated by business closures and diminishing sales due to a decline in non-essential spending. Globally, services activity fell to a survey-record low of 24.0 in April, down sharply from 36.8 in the previous month.

Production (14 per cent of GDP)

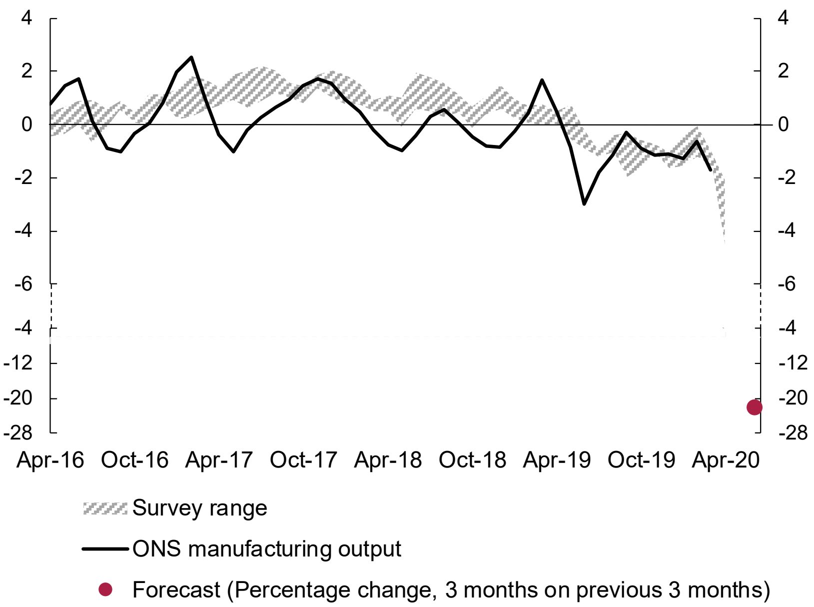
Production output fell by 2.1 per cent in the three months to March, largely in line with what we published last month. The decline in production largely reflects widespread falls across manufacturing industries. We estimate that production will contract by 17.5 per cent in the second quarter of 2020, though output in this sector is volatile and difficult to predict on a quarterly basis with any accuracy.

The production sector comprises manufacturing; mining and quarrying; electricity gas, steam and air conditioning; water supply and sewerage; and oil and gas extraction. The largest of these sectors is manufacturing, worth 10 per cent of GDP.

Manufacturing (10 per cent of GDP)

Within production, output in the manufacturing sector fell by 1.7 per cent in the three months to March. Manufacturing industries experienced widespread decline over the last three-month period. The impact of COVID-19 meant the manufacture of transport equipment took a major hit, though this was partially offset by an increase in the manufacture of basic pharmaceuticals. mainly due to weaker exports to China. Our central forecast, which incorporates the full impact of COVID-19 containment measures, is for a contraction of 22.0 per cent in the second quarter of 2020.

Figure 7 - ONS manufacturing sector growth (3 months on previous 3 months, per cent) compared with swathe of business survey balances (standardised)



Note: The shaded swathe shows the highest and lowest values each month of a range of business survey balances that have been standardised so that they have the same mean and standard deviation as the quarterly growth of the ONS series. Source: ONS, CBI, Markit, Bank of England Agents, EC, NIESR calculations.

The IHS Markit/CIPS UK manufacturing PMI fell to a record low of 32.6 in April, down from 47.8 in March. The fall has been largely attributed to COVID-19 related closures, weak domestic and global demand, and labour shortages.

Unsurprisingly, the latest CBI survey also suggest that businesses and consumers remain pessimistic about sales prospects, largely because of COVID-19 related disruptions and uncertainty surrounding the easing of lockdown measures.

The J.P.Morgan Global Manufacturing Output fell to 39.8 in April, down from 47.8 in March, owing mainly to disruptions to global supply chains due to COVID-19. The Global Index excluding Mainland China PMI registered 35.8, down from 46.2 March.

Mining and quarrying (1 per cent of GDP)

Mining and quarrying is a small but erratic component of industrial production that can have an influence on overall GDP growth. Output fell by 5.2 per cent in the three months to March, largely due to widespread maintenance shutdowns within oil and gas extraction. We now forecast a 8.7 per cent decline in growth in output in the second quarter of 2020.

Construction (6 per cent of GDP)

Output in the construction sector fell by 2.6 per cent in the three months to March, a much weaker decline than we had forecast last month. The decline reflects large falls in private commercial work, housing repair and maintenance. For the month of March, the construction industry fell by 5.9 per cent, with record monthly declines in both repair maintenance and new work. We estimate construction output to decline by 26.5 per cent in second quarter of 2020.

The IHS Markit/CIPS construction PMI survey fell to a record low of 8.2 in April, down from 39.3 in March. Survey respondents overwhelming attributed the decline to complete halts of activity on site due the global pandemic.

Table 1 - Summary Table of GDP growth (2016=100)

2016=100	GDP index	Index of Services	*Index of Services - Components*				Index of Production	*Index of Production - Components*				Index of Constructio	Agriculture
			Business services and finance	Government and other services	Distribution, Hotels and Restaurants	Transport, Storage and Communications		Manufacturing	Electricity, gas, steam and air conditioning	Mining and Quarrying	Water Supply, Sewerage and Waste Management		
Latest weights	1000	796	339	217	133	108	136	102	15	6	13	61	7
Jun-18	103.7	103.6	102.8	101.9	105.9	107.0	102.9	103.8	94.3	106.4	104.6	106.6	101.9
Jul-18	104.0	103.9	103.0	101.9	106.9	107.2	103.2	103.5	97.2	111.1	104.3	106.7	101.7
Aug-18	104.1	104.1	102.9	102.1	106.6	109.0	103.1	103.3	97.0	112.1	104.0	106.3	101.8
Sep-18	104.1	104.2	102.8	102.2	106.1	109.9	102.5	103.0	94.9	108.0	104.3	107.2	102.4
Oct-18	104.4	104.5	103.4	102.4	106.8	109.5	102.4	102.5	96.2	111.4	103.7	107.7	103.0
Nov-18	104.6	104.8	103.4	102.4	107.7	110.0	102.2	102.6	95.7	107.9	103.2	107.3	103.0
Dec-18	104.2	104.5	103.0	102.6	106.7	110.6	101.6	102.1	94.6	107.3	102.9	105.2	102.0
Jan-19	104.8	104.8	102.8	102.7	108.1	111.6	102.5	103.3	96.4	105.2	102.0	108.4	101.8
Feb-19	105.0	105.0	103.1	102.9	108.1	111.6	102.7	104.0	92.4	107.5	101.6	110.1	101.5
Mar-19	105.1	105.1	103.1	103.1	108.5	111.3	103.5	105.1	91.8	108.7	102.0	108.5	101.4
April-19	104.5	105.0	102.8	103.0	108.4	112.1	100.1	100.4	94.7	105.5	101.4	107.8	101.2
May-19	104.8	105.1	103.0	103.2	108.5	111.7	101.1	101.3	94.7	106.8	104.1	108.3	101.1
Jun-19	105.0	105.5	103.3	103.6	108.6	112.4	101.1	101.3	94.8	106.5	104.4	106.8	101.1
Jul-19	105.4	105.9	103.8	103.7	108.7	113.5	101.0	101.4	94.0	105.8	104.0	108.2	101.2
Aug-19	105.2	105.8	103.9	104.0	108.7	112.1	100.4	100.6	92.8	106.1	105.2	108.1	101.3
Sep-19	105.3	105.8	103.7	104.0	108.4	112.9	100.5	100.1	92.7	113.2	105.9	109.5	101.3
Oct-19	105.5	106.2	104.3	104.2	108.9	113.3	100.7	100.6	95.3	105.9	104.8	106.9	101.3
Nov-19	105.2	105.8	103.8	104.6	108.1	111.6	99.6	99.1	95.6	106.6	105.1	109.4	101.3
Dec-19	105.3	106.0	104.1	104.7	108.2	112.4	99.4	99.1	93.8	103.9	106.1	109.2	101.4
Jan-20	105.4	106.2	104.2	104.9	109.1	111.2	99.3	99.3	90.5	104.2	107.3	109.4	101.3
Feb-20	105.3	106.2	104.5	104.9	108.5	110.9	99.2	99.5	89.4	103.7	105.5	107.0	101.2
Mar-20	99.1	99.6	102.2	97.3	93.3	104.0	95.0	94.9	88.1	91.9	104.9	100.8	101.0
Apr-20	74.1	72.5	85.6	70.0	38.5	79.1	80.7	76.4	85.0	91.9	102.6	77.6	100.2
May-20	74.2	72.5	85.7	70.0	38.5	79.1	80.9	76.4	87.0	91.9	102.6	77.6	100.2
Jun-20	73.8	72.0	85.8	68.8	37.9	78.5	80.5	76.2	86.4	89.9	102.7	77.9	100.3
	Percentage change, 3 months on previous 3 months												
Feb-19	0.3	0.3	-0.2	0.4	0.7	1.3	-0.1	0.4	-1.2	-2.2	-1.5	0.5	-1.0
Mar-19	0.5	0.4	-0.3	0.4	1.1	1.3	0.8	1.7	-2.1	-1.6	-1.4	2.1	-1.1
April-19	0.3	0.3	-0.1	0.4	0.8	0.8	0.0	0.5	-2.7	0.4	-1.0	1.7	-0.9
May-19	0.1	0.3	0.0	0.4	0.8	0.4	-0.7	-0.8	-0.8	0.3	0.3	0.3	-0.5
Jun-19	-0.2	0.2	0.0	0.4	0.2	0.5	-2.1	-3.0	1.3	-0.8	1.4	-1.3	-0.4
Jul-19	0.2	0.4	0.4	0.5	0.2	0.8	-1.0	-1.8	1.6	-0.8	2.5	-0.9	-0.2
Aug-19	0.4	0.6	0.7	0.6	0.2	0.9	-0.7	-1.1	0.1	-0.8	2.0	-0.5	0.0
Sep-19	0.5	0.6	0.7	0.6	0.1	0.7	-0.1	-0.3	-1.7	2.0	1.7	0.9	0.1
Oct-19	0.3	0.4	0.6	0.5	0.1	0.2	-0.5	-0.9	-1.0	1.9	1.1	0.4	0.2
Nov-19	0.1	0.2	0.3	0.5	-0.2	-0.1	-0.6	-1.2	0.7	2.3	0.7	0.8	0.1
Dec-19	0.0	0.2	0.3	0.6	-0.2	-0.4	-0.7	-1.1	1.9	-2.7	0.3	-0.1	0.1
Jan-20	0.0	0.1	0.1	0.6	-0.2	-0.9	-1.1	-1.3	-0.3	-3.2	0.8	1.1	0.0
Feb-20	0.0	0.2	0.3	0.5	0.1	-1.0	-1.0	-0.6	-3.5	-4.3	1.0	-0.1	0.0
Mar-20	-2.0	-1.9	-0.4	-2.0	-4.4	-3.3	-2.1	-1.7	-5.9	-5.2	0.5	-2.5	-0.2
Apr-20	-11.8	-12.5	-6.3	-13.4	-26.2	-12.3	-7.9	-9.0	-6.2	-8.6	-1.7	-13.0	-0.5
May-20	-21.7	-23.2	-12.6	-24.5	-47.7	-21.6	-13.9	-16.8	-5.0	-11.6	-2.7	-21.4	-0.8
Jun-20	-28.3	-30.4	-17.3	-32.0	-63.0	-27.4	-17.5	-22.0	-3.6	-8.7	-3.1	-26.5	-0.9
	Percentage change, month on same month in previous year												
Feb-19	2.2	2.5	1.0	1.7	4.4	6.9	-0.2	0.4	-8.7	4.9	2.0	4.9	-1.6
Mar-19	2.3	2.3	0.7	1.6	5.3	5.6	0.7	1.9	-11.3	9.2	0.9	5.2	-1.3
April-19	1.4	1.8	0.1	1.4	4.1	5.9	-2.2	-2.2	-4.1	-2.5	1.0	3.2	-1.3
May-19	1.4	1.5	0.3	1.5	2.6	4.8	-0.8	-1.7	3.3	0.3	2.2	2.4	-1.3
Jun-19	1.3	1.8	0.5	1.7	2.5	5.0	-1.7	-2.4	0.5	0.1	-0.2	0.2	-0.8
Jul-19	1.3	1.9	0.8	1.8	1.7	5.9	-2.1	-2.0	-3.3	-4.8	-0.3	1.4	-0.5
Aug-19	1.1	1.6	1.0	1.9	2.0	2.8	-2.6	-2.6	-4.3	-5.4	1.2	1.7	-0.5
Sep-19	1.2	1.5	0.9	1.8	2.2	2.7	-2.0	-2.8	-2.3	4.8	1.5	2.1	-1.1
Oct-19	1.1	1.6	0.9	1.8	2.0	3.5	-1.7	-1.9	-0.9	-4.9	1.1	-0.7	-1.7
Nov-19	0.6	1.0	0.4	2.1	0.4	1.5	-2.5	-3.4	-0.1	-1.2	1.8	2.0	-1.7
Dec-19	1.1	1.4	1.1	2.0	1.4	1.6	-2.2	-2.9	-0.8	-3.2	3.1	3.8	-0.6
Jan-20	0.6	1.3	1.4	2.1	0.9	-0.4	-3.1	-3.9	-6.1	-1.0	5.2	0.9	-0.5
Feb-20	0.3	1.1	1.4	1.9	0.4	-0.6	-3.4	-4.3	-3.2	-3.5	3.8	-2.8	-0.3
Mar-20	-5.7	-5.2	-0.9	-5.6	-14.0	-6.6	-8.2	-9.7	-4.0	-15.5	2.8	-7.1	-0.4
Apr-20	-29.1	-30.9	-16.7	-32.0	-64.5	-29.4	-19.4	-23.9	-10.2	-12.9	1.2	-28.0	-1.0
May-20	-29.2	-31.0	-16.8	-32.2	-64.5	-29.2	-20.0	-24.6	-8.1	-14.0	-1.4	-28.3	-0.9
Jun-20	-29.7	-31.7	-17.0	-33.6	-65.1	-30.2	-20.4	-24.8	-8.9	-15.6	-1.6	-27.0	-0.8
	Percentage change, month on previous month												
Feb-19	0.2	0.2	0.3	0.2	0.0	0.0	0.2	0.7	-4.1	2.2	-0.4	1.6	-0.3
Mar-19	0.1	0.1	0.0	0.2	0.4	-0.3	0.8	1.1	-0.6	1.1	0.4	-1.5	-0.1
April-19	-0.6	-0.1	-0.3	-0.1	-0.1	0.7	-3.3	-4.5	3.2	-2.9	-0.6	-0.6	-0.2
May-19	0.3	0.1	0.2	0.2	0.1	-0.4	1.0	0.9	0.0	1.2	2.7	0.5	-0.1
Jun-19	0.2	0.4	0.3	0.4	0.1	0.6	0.0	0.0	0.1	-0.3	0.3	-1.4	0.0
Jul-19	0.4	0.4	0.5	0.1	0.1	1.0	-0.1	0.1	-0.8	-0.7	-0.4	1.3	0.1
Aug-19	-0.2	-0.1	0.1	0.3	0.0	-1.2	-0.6	-0.8	-1.3	0.3	1.2	-0.1	0.1
Sep-19	0.1	0.0	-0.2	0.0	-0.3	0.7	0.1	-0.5	-0.1	6.7	0.7	1.3	0.0
Oct-19	0.2	0.4	0.6	0.2	0.5	0.4	0.2	0.5	2.8	-6.4	-1.0	-2.4	0.0
Nov-19	-0.3	-0.4	-0.5	0.4	-0.7	-1.5	-1.1	-1.5	0.3	0.7	0.3	2.3	0.0
Dec-19	0.1	0.2	0.3	0.1	0.1	0.7	-0.2	0.0	-1.9	-2.5	1.0	-0.2	0.1
Jan-20	0.1	0.2	0.1	0.2	0.8	-1.1	-0.1	0.2	-3.5	0.3	1.1	0.2	-0.1
Feb-20	-0.1	0.0	0.3	0.0	-0.5	-0.3	-0.1	0.2	-1.2	-0.5	-1.7	-2.2	-0.1
Mar-20	-5.9	-6.2	-2.2	-7.2	-14.0	-6.2	-4.2	-4.6	-1.5	-11.4	-0.6	-5.8	-0.2
Apr-20	-25.2	-27.2	-16.2	-28.1	-58.7	-23.9	-15.1	-19.5	-3.5	0.0	-2.2	-23.0	-0.8
May-20	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	2.4	0.0	0.0	0.0	0.0
Jun-20	-0.6	-0.6	0.1	-1.7	-1.4	-0.8	-0.5	-0.3	-0.7	-2.1	0.1	0.4	0.1

Health warning

The NIESR GDP Tracker provides a rolling monthly forecast for GDP growth. Our first estimate of growth for any particular quarter starts in the first month of that quarter and is then updated each month until the first official release in the second month of the following quarter. So, for example, our first estimate of growth in the first quarter of 2020 is published this month and will then be updated four times (in February, March, April and May) before the ONS publishes its first estimate for the first quarter of 2020 in May 2020. In other words, we publish four estimates of GDP for any particular quarter before the official release and change them as new evidence becomes available.

NIESR's short-term predictions of monthly GDP growth are based on bottom-up analysis of recent trends in the monthly sub-components of GDP. These predictions are constructed by aggregating statistical model forecasts of ten sub-components of GDP. The statistical models that have been developed make use of past trends in the data as well as survey evidence to build short-term predictions of the sub-components of monthly GDP. These provide a statistically-based guide to current trends based on the latest available data. Each month these predictions are updated as new ONS data and new surveys become available.

It is important to stress that the timelier NIESR guide to quarterly GDP growth is less reliable than the subsequent ONS data releases as its data content is lower, particularly for estimates of the current quarter which in some months will be based only on forecasts rather than hard data. To mitigate this issue, NIESR provides a guide to average errors based on past performance. NIESR also provides clear guidance on how the latest news has caused its estimates of GDP growth in the current and preceding quarter to change and thereby quantify how the short-term outlook is being affected by recent data releases.

As the bottom-up methodology for producing estimates of GDP growth for the current and preceding quarters is still relatively new, we do not yet have a long track record of estimates produced by this approach. To check how our methodology would work in real time we went back to late 2016 to produce judgement-free forecasts of GDP growth in future months based on the monthly data series available for the components in November 2016 (this was the earliest vintage then available on the ONS website) and in each subsequent three months. These are shown in Table 2, which has been updated to include estimates since we started producing the GDP Tracker in July 2018. We calculate the forecast quarter-on-quarter growth rates for the current quarter and compare these to the ONS first estimates of quarterly growth. The average absolute error for the quarters considered was 0.2 % points. The largest error was for 2019Q2 when our GDP tracker in May pointed to growth of 0.3 per cent, 0.5% points higher than the ONS first estimate of GDP growth. As shown in figure 2, we correctly revised our estimate of 2019Q2 growth down to -0.2 per cent in June when monthly GDP figures for April indicated a fall in output.

Table 2 Forecast Error Analysis: Quarterly GDP growth (%)

Quarter	ONS first estimate	ONS latest	NIESR nowcast*	Error in NIESR nowcast**	ONS latest – first
2016Q4	0.6	0.6	0.7	-0.1	0.0
2017Q1	0.3	0.6	0.6	-0.3	0.3
2017Q2	0.3	0.3	0.4	-0.1	0.0
2017Q3	0.4	0.3	0.4	0.0	-0.1
2017Q4	0.5	0.4	0.4	0.1	-0.1
2018Q1	0.1	0.1	0.5	-0.4	0.0
2018Q2	0.4	0.5	0.0	0.4	0.1
2018Q3	0.6	0.6	0.5	0.1	0.0
2018Q4	0.2	0.2	0.4	-0.2	0.0
2019Q1	0.5	0.7	0.2	0.3	0.2
2019Q2	-0.2	-0.2	0.3	-0.5	0.0
2019Q3	0.3	0.5	0.2	0.1	0.2
2019Q4	0.0		0.2	-0.2	
2020Q1			0.2		
Average absolute error				0.22	0.08

Notes for editors

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