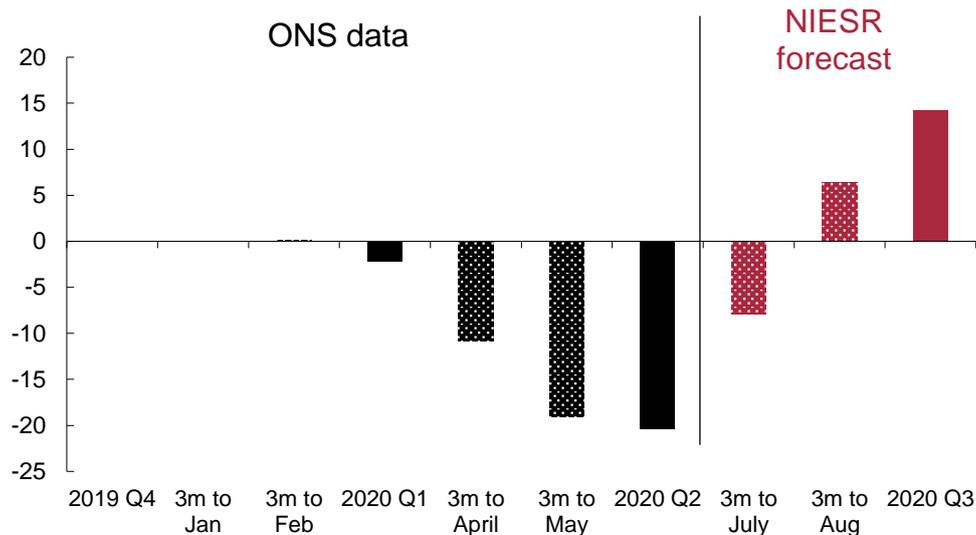# GDP picking up after recession confirmed

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

Main points

- Latest ONS estimates published this morning show that the UK economy contracted by 20.4 per cent in the second quarter of 2020, thereby confirming the UK's first recession since the global financial crisis. This outturn is largely in line with what we had forecast last month (figure 1).
- Further estimates suggest that the economy grew by 8.7 per cent in June itself.
- The outlook for the third quarter of 2020 is for growth of about 15 per cent as the economy reopens, on the assumption that Covid-19 remains contained. This would still leave GDP in September around 10 per cent lower than in February.

"Today's ONS estimates suggest that GDP fell by a record 20.4 per cent in the second quarter of 2020, following a decline of 2.2 per cent in the first quarter of the year, thereby confirming the UK's first recession since the financial crash. However, the monthly estimate for June suggests a rebound of 8.7 per cent, reflecting further easing of Covid-19 lockdown measures – though it remains a sixth below its level in February. Despite the recovery noted in June, the path ahead remains precarious. An extended period of growth will be required to make up the ground lost in recent months"

Dr Kemar Whyte
Senior Economist - Macroeconomic Modelling and Forecasting

Economic setting

The outlook for the UK remains highly uncertain. It will depend critically on how the pandemic develops, and measures taken to address it. Equally, it will depend on how the government, households, and firms respond to these factors. In our latest *Review*, the main-case scenario sees UK GDP falling by 10 per cent in 2020 and then increasing by 6 per cent in 2021. This scenario is based on the assumption that there is no resurgence in Covid-19 or a reintroduction of lockdown measures. We further anticipate that the level of economic activity in the final quarter of last year is unlikely to be regained before the second half of 2023. Although activity continues to be supported by substantial fiscal and monetary policy actions, the recovery that is needed will take time as public health concerns weigh on activity. Accordingly, there are still substantial downside risks.

The expected weakness of activity arises partly from the need to avoid social consumption while Covid-19 is still present. While most businesses can trade, they cannot do so normally because of the need to maintain social distancing. This is affecting the hospitality and travel sectors particularly and means that many people are not commuting to city centres to work, with knock-on effects to businesses based there. Activity in these sectors and places is likely to be subdued for as long as Covid-19 is present with adverse consequences for employment.

The support measures that the government has put in place have been effective thus far in limiting the transmission of the economic effects of Covid-19. However, changing the nature of the support it is providing. In particular, the Chancellor confirmed in his 'Plan for Jobs' on 8 July that the Coronavirus Job Retention Scheme (CJRS) would close at the end of October. In our view this change of tack risks a substantial rise in unemployment that could become ingrained and end up costing more in terms of long-term unemployment and a weakened economy than it saves in terms of reduced payments to furloughed workers. Higher unemployment would also contribute to a deterioration in living standards.

News in latest ONS data

The latest monthly ONS data were largely in line with what we had anticipated last month, with data confirming GDP declined by 20.4 per cent in the three months to June. Figure 2 shows how our short-term forecasts for recent quarters have changed as new information has become available.

Figure 2 - Evolution of the NIESR quarterly GDP forecast (3 months on previous 3 months, per cent)
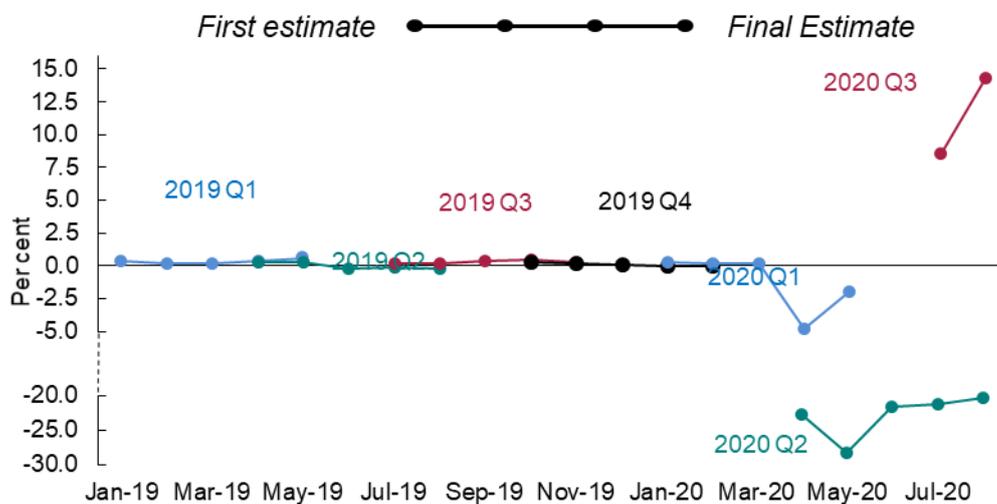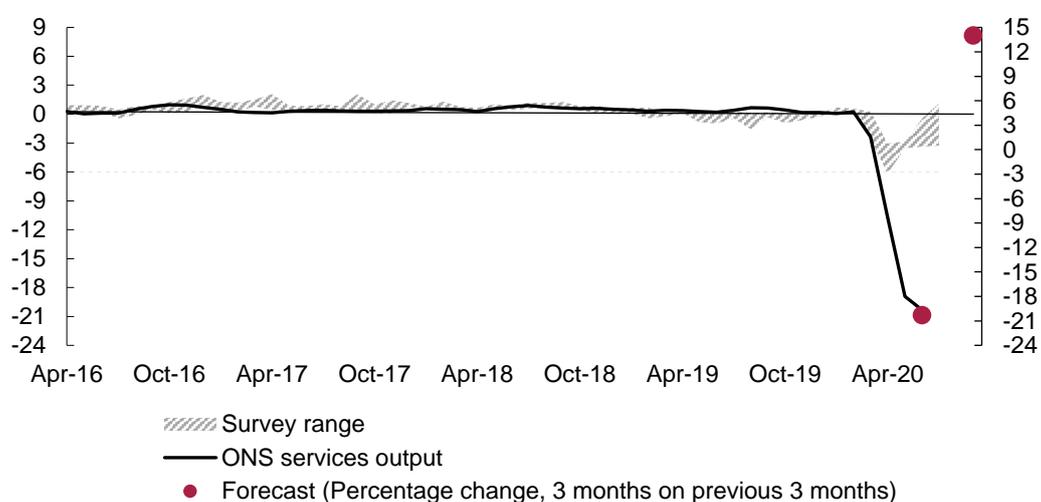

Figure 3 shows a heat map of the data surprises across sectors in the monthly data, relative to last month's GDP Tracker, highlighting the sectors where the surprises are large relative to the volatility of the output data. This month, positive surprises were seen in all sectors except business services and government, which showed negative and neutral outturns, respectively.

Figure 3 - Surprises in monthly data

	06/19	07/19	08/19	09/19	10/19	11/19	12/19	01/20	02/20	03/20	04/20	05/20	06/20
Business services and finance	0.0	0.0	0.0	-0.2	0.0	-0.2	0.1	0.0	0.0	1.4	2.6	-1.7	-3.5
Government	0.0	0.2	0.2	-0.1	0.0	0.1	0.1	0.1	0.0	-1.7	4.6	0.5	0.0
Distribution , Hotels and Restaurants	0.0	0.0	0.0	-0.1	0.0	-0.1	-0.1	0.1	-0.1	1.0	3.8	-1.8	2.5
Transport, Storage and Communication	0.1	0.0	-0.3	0.1	0.0	-0.4	0.3	-0.4	-0.2	4.2	1.8	-1.8	0.1
Manufacturing	-0.1	0.2	-0.2	0.1	0.2	-0.5	0.0	0.1	0.2	2.9	-1.6	1.2	3.2
Electricity	0.0	-0.4	-0.5	0.2	0.3	-0.1	-0.4	-1.5	-1.0	2.8	-2.0	-1.8	1.1
Extraction	-0.1	-0.1	-0.1	0.4	-0.6	0.3	-0.6	0.3	-0.2	-3.3	-2.7	-0.5	1.6
Water Supply, Sewerage, Waste Management	0.0	0.8	0.3	0.0	-1.1	-0.6	0.5	0.9	-1.0	0.5	-2.7	-1.0	2.5
Construction	0.0	0.0	0.0	0.0	-0.6	0.1	-0.1	-0.1	-0.5	2.2	-3.1	-1.3	2.5
Agriculture	-0.1	0.0	-0.1	-0.1	0.1	-0.1	-0.5	0.5	-0.5	0.0	-2.6	0.3	3.9

⟵ **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 20.4 per cent in the three months to June. The decline in growth in the last three months was underpinned by widespread contractions across all main sectors of the economy. Our forecast for the third quarter of 2020 is for growth of about 15 per cent.

Figure 4 - Contributions to quarterly GDP growth (percentage points)

ONS data

NIESR forecast

Services   Production   Construction   Agriculture   GDP

Services (80 per cent of GDP)

According to the latest ONS data, the services sector fell by 19.9 per cent in the three months to June, broadly consistent with what we predicted last month. The fall in the services sector was driven by declines in nearly all industries, most notably in education which fell by 34.4 per cent due to school closures, health which fell by 36.1 per cent largely because of reduced activity in elective operations, food and beverage services which fell by 84.7 per cent. There was also a large contraction in wholesale and retail trade of motor vehicles which fell by 63.0 per cent. Based on recent developments we expect service sector growth to be 14 per cent in the third quarter of 2020 (figure 5).

Figure 5 - 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 came in at 56.5 in July, up from 47.1 in June. The improvement in business activity was strongly linked to the phased reopening of businesses and the subsequent increase in customer demand. Globally, Services Activity Index registered at 50.5 in July, up from 48.0 in June, signally a first posting of above neutral level since January.

Production (14 per cent of GDP)

Production output fell by 16.9 per cent in the three months to June, a weaker decline than we anticipated last month. The decline in production was driven by widespread falls across all manufacturing industries. We estimate that production will grow by 16.1 per cent in the third 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 20.2 per cent in the three months to June. Manufacturing industries experienced widespread decline over the last three-month period, with 12 out of 13 sub-sector experiencing contraction. The most notable was the manufacture of transport equipment, which fell by 49.1 per cent. Our forecast for the third quarter is for manufacturing to grow by 21.3 per cent.

The IHS Markit/CIPS UK manufacturing PMI rose slightly for the first time in four months. The index increased to 53.3 in July, up from 50.1 in June, recording a second consecutive above neutral mark posting. Manufacturers credited the expansion to a further easing of lockdown conditions, which allowed for a restart in production in response to businesses reopening.

The J.P. Morgan Global Manufacturing Output rose to 50.3 in July, up from 47.9 in June, and back above the neutral mark for the first time since the January. The improvement was linked to the revival of output and new orders. Business sentiment also began to recover.

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 7.3 per cent in the three months to June, largely due to shutdowns and reduced oil and gas demand. We now forecast growth of 8.2 per cent in the third quarter of 2020.

Construction (6 per cent of GDP)

Output in the construction sector fell by a record 35.0 per cent in the three months to June, largely consistent with what we had forecast last month. The decline reflects record falls in all sectors apart from infrastructure. The main contributors to this decline were private new housing and private commercial, which fell by 51.2 per cent and 33.4 per cent, respectively. We anticipate growth of around 35.0 per cent in the third quarter of 2020.

The IHS Markit/CIPS construction PMI survey rose to 58.1 in July, up from 55.3 in June, signalling a second consecutive month above the neutral threshold. The improvement in construction output has been attributed to a boost in sales from the easing of lockdown measures across the UK economy and less uncertainty about starting new projects.

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

2016=100	GDP index	Index of Services	Business services and finance	Government and other services	Distribution, Hotels and Restaurants	Transport, Storage and Communications	Index of Production	Manufacturing	Electricity, gas, steam and air conditioning	Mining and Quarrying	Water Supply, Sewerage and Waste Management	Index of Constructio	Agriculture
Latest weights	1000	796	339	217	133	108	136	102	15	6	13	61	7
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	104.7	104.8	102.8	102.7	108.1	111.5	102.5	103.2	96.7	105.2	102.1	107.4	101.7
Feb-19	105.0	105.1	103.1	103.0	108.3	111.7	102.6	103.7	93.1	107.8	102.1	109.6	101.4
Mar-19	105.1	105.1	103.1	103.1	108.4	111.3	103.7	105.0	92.4	113.1	102.5	108.4	101.3
April-19	104.6	105.0	102.8	102.9	108.3	112.2	100.5	100.4	95.4	108.1	102.9	108.4	101.2
May-19	104.8	105.1	103.0	103.1	108.4	111.7	101.5	101.3	95.9	108.6	105.3	108.5	101.2
Jun-19	105.0	105.5	103.4	103.6	108.5	112.6	101.4	101.2	96.3	108.0	105.0	106.8	101.3
Jul-19	105.4	105.9	103.9	103.7	108.7	113.7	101.2	101.4	94.9	107.3	104.2	108.3	101.4
Aug-19	105.3	105.9	103.9	104.0	108.7	112.3	100.5	100.6	93.1	107.6	105.3	108.2	101.5
Sep-19	105.3	105.8	103.8	104.0	108.4	112.8	100.5	100.1	92.7	114.6	105.5	108.8	101.4
Oct-19	105.5	106.2	104.2	104.1	108.9	113.1	100.9	100.7	96.3	106.8	104.7	106.6	101.3
Nov-19	105.1	105.8	103.9	104.5	108.2	111.4	100.0	99.1	97.6	108.8	105.2	107.9	101.3
Dec-19	105.3	106.1	104.3	104.6	108.0	112.3	99.8	99.2	95.7	106.5	105.6	107.5	101.4
Jan-20	105.5	106.2	104.4	104.9	108.9	110.9	100.0	99.8	92.0	107.7	106.7	108.8	101.5
Feb-20	105.5	106.2	104.7	104.8	108.4	111.3	100.3	100.7	91.1	107.4	104.7	106.8	101.6
Mar-20	98.2	98.2	102.2	92.1	92.7	105.2	96.0	95.4	89.8	100.1	105.4	101.0	100.7
Apr-20	78.5	80.1	91.1	73.3	57.9	86.1	76.4	71.9	81.9	91.0	98.0	60.4	94.9
May-20	80.4	81.2	90.3	74.1	65.4	86.5	81.1	77.9	81.8	96.6	98.5	65.0	95.8
Jun-20	87.3	87.5	93.2	77.2	83.9	95.0	88.7	86.4	85.2	104.7	102.5	80.3	98.4
Jul-20	92.1	91.9	94.0	82.1	95.2	101.8	93.1	91.9	85.4	105.7	103.2	90.8	101.1
Aug-20	94.2	94.0	95.4	85.9	97.4	102.4	96.3	96.7	85.7	104.8	100.3	91.6	98.0
Sep-20	95.1	94.7	96.0	88.0	97.5	101.2	97.3	97.9	86.4	105.8	98.3	95.4	98.3
Percentage change, 3 months on previous 3 months													
Mar-19	0.5	0.4	-0.3	0.5	1.1	1.3	0.8	1.5	-1.5	-0.2	-1.0	1.6	-1.2
April-19	0.4	0.4	-0.1	0.4	0.8	0.9	0.2	0.4	-2.1	2.7	-0.2	2.0	-0.9
May-19	0.2	0.3	0.0	0.3	0.6	0.4	-0.3	-0.7	-0.2	3.0	1.2	1.0	-0.5
Jun-19	-0.1	0.2	0.1	0.3	0.1	0.6	-1.7	-2.9	1.9	-0.4	2.1	-0.5	-0.2
Jul-19	0.2	0.4	0.4	0.5	0.2	0.8	-0.9	-1.7	2.2	-1.6	2.3	-0.9	0.0
Aug-19	0.4	0.7	0.7	0.7	0.2	1.0	-0.9	-1.1	0.2	-2.1	1.2	-0.6	0.2
Sep-19	0.5	0.6	0.8	0.7	0.2	0.7	-0.4	-0.3	-2.4	1.5	0.6	0.5	0.2
Oct-19	0.3	0.4	0.5	0.5	0.1	-0.7	-0.7	-0.8	-1.7	1.6	0.3	0.0	0.1
Nov-19	0.1	0.2	0.2	0.4	-0.1	-0.4	-0.6	-1.1	0.8	2.3	0.3	0.0	-0.1
Dec-19	0.0	0.2	0.3	0.5	-0.2	-0.6	-0.5	-1.0	3.2	-2.2	0.2	-1.0	-0.1
Jan-20	-0.1	0.1	0.2	0.6	-0.3	-1.1	-0.7	-1.1	1.1	-1.8	0.6	0.2	0.0
Feb-20	0.1	0.2	0.5	0.5	-0.1	-0.8	-0.4	-0.1	-2.7	-2.6	0.5	-0.1	0.2
Mar-20	-2.1	-2.4	-0.4	-3.6	-4.6	-2.8	-1.5	-1.0	-5.8	-2.1	0.4	-1.7	-0.1
Apr-20	-10.7	-10.6	-4.7	-13.9	-20.3	-9.6	-9.0	-10.1	-7.9	-7.6	-3.0	-17.3	-2.3
May-20	-18.7	-18.5	-9.5	-23.8	-33.6	-17.0	-15.5	-18.2	-9.1	-10.5	-4.8	-29.9	-4.3
Jun-20	-20.4	-19.9	-11.8	-25.6	-33.2	-18.3	-16.9	-20.2	-8.8	-7.3	-5.6	-35.0	-4.8
Jul-20	-7.9	-8.4	-6.9	-13.6	-5.6	-6.4	-3.6	-4.4	-4.0	2.9	-1.3	-12.0	-0.7
Aug-20	6.4	5.4	-0.4	2.4	28.0	7.7	9.7	12.1	1.1	9.6	1.4	16.0	2.1
Sep-20	14.3	12.8	3.9	14.0	40.0	14.1	16.5	21.3	3.5	8.2	0.9	35.1	2.8
Percentage change, month on same month in previous year													
Mar-19	2.3	2.3	0.7	1.6	5.2	5.6	0.9	1.8	-10.7	13.7	1.4	5.1	-1.4
April-19	1.5	1.8	0.1	1.3	4.0	5.9	-1.8	-2.2	-3.3	-0.1	2.5	3.7	-1.3
May-19	1.4	1.5	0.3	1.4	2.5	4.8	-0.4	-1.7	4.6	2.0	3.3	2.6	-1.2
Jun-19	1.3	1.8	0.6	1.7	2.5	5.2	-1.5	-2.5	2.1	1.5	0.4	0.2	-0.6
Jul-19	1.3	1.9	0.9	1.8	1.7	6.1	-1.9	-2.0	-2.4	-3.4	-0.1	1.5	-0.3
Aug-19	1.2	1.7	1.0	1.9	2.0	3.0	-2.5	-2.6	-4.0	-4.0	1.3	1.8	-0.3
Sep-19	1.2	1.5	1.0	1.8	2.2	2.6	-2.0	-2.8	-2.3	6.1	1.2	1.5	-1.0
Oct-19	1.1	1.6	0.8	1.7	2.0	3.3	-1.5	-1.8	0.1	-4.1	1.0	-1.0	-1.7
Nov-19	0.5	1.0	0.5	2.1	0.5	1.3	-2.2	-3.4	2.0	0.8	1.9	0.6	-1.7
Dec-19	1.1	1.5	1.3	1.9	1.2	1.5	-1.8	-2.8	1.2	-0.7	2.6	2.2	-0.6
Jan-20	0.8	1.3	1.6	2.1	0.7	-0.5	-2.4	-3.3	-4.9	2.4	4.5	1.3	-0.2
Feb-20	0.5	1.0	1.6	1.7	0.1	-0.4	-2.2	-2.9	-2.1	-0.4	2.5	-2.6	0.2
Mar-20	-6.6	-6.6	-0.9	-10.7	-14.5	-5.5	-7.4	-9.1	-2.8	-11.5	2.8	-6.8	-0.6
Apr-20	-25.0	-23.7	-11.4	-28.8	-46.5	-23.3	-24.0	-28.4	-14.2	-15.8	-4.8	-44.3	-6.2
May-20	-23.3	-22.7	-12.3	-28.1	-39.7	-22.6	-20.1	-23.1	-14.7	-11.0	-6.5	-40.1	-5.3
Jun-20	-16.9	-17.1	-9.9	-25.5	-22.7	-15.6	-12.5	-14.6	-11.5	-3.1	-2.4	-24.8	-2.9
Jul-20	-12.6	-13.2	-9.5	-20.9	-12.4	-10.5	-8.0	-9.4	-10.0	-1.5	-1.0	-16.1	-0.3
Aug-20	-10.5	-11.2	-8.2	-17.4	-10.4	-8.8	-4.1	-3.9	-7.9	-2.6	-4.7	-15.3	-3.4
Sep-20	-9.7	-10.5	-7.5	-15.4	-10.1	-10.3	-3.2	-2.2	-6.8	-7.7	-6.8	-12.3	-3.1
Percentage change, month on previous month													
Mar-19	0.1	0.0	0.0	0.1	0.1	-0.4	1.1	1.3	-0.8	4.9	0.4	-1.1	-0.1
April-19	-0.5	-0.1	-0.3	-0.2	-0.1	0.8	-3.1	-4.4	3.2	-4.4	0.4	0.0	-0.1
May-19	0.2	0.1	0.2	0.2	0.1	-0.4	1.0	0.9	0.5	0.5	2.3	0.1	0.0
Jun-19	0.2	0.4	0.4	0.5	0.1	0.8	-0.1	-0.1	0.4	-0.6	-0.3	-1.6	0.1
Jul-19	0.4	0.4	0.5	0.1	0.2	1.0	-0.2	0.2	-1.5	-0.6	-0.8	1.4	0.1
Aug-19	-0.1	0.0	0.0	0.3	0.0	-1.2	-0.7	-0.8	-1.9	0.3	1.1	-0.1	0.1
Sep-19	0.0	-0.1	-0.1	0.0	-0.3	0.4	0.0	-0.5	-0.4	6.5	0.2	0.6	-0.1
Oct-19	0.2	0.4	0.4	0.1	0.5	0.3	0.4	0.6	3.9	-6.8	-0.8	-2.0	-0.1
Nov-19	-0.4	-0.4	-0.3	0.4	-0.6	-1.5	-0.9	-1.6	1.3	1.9	0.5	1.2	0.0
Dec-19	0.2	0.3	0.4	0.1	-0.2	0.8	-0.2	0.1	-1.9	-2.1	0.4	-0.4	0.1
Jan-20	0.2	0.1	0.1	0.3	0.8	-1.2	0.2	0.6	-3.9	1.1	1.0	1.2	0.1
Feb-20	0.0	0.0	0.3	-0.1	-0.5	0.4	0.3	0.9	-1.0	-0.3	-1.9	-1.8	0.1
Mar-20	-6.9	-7.5	-2.4	-12.1	-14.5	-5.5	-4.3	-5.3	-1.4	-6.8	0.7	-5.4	-0.9
Apr-20	-20.1	-18.4	-10.9	-20.4	-37.5	-18.2	-20.0	-24.6	-8.8	-9.1	-7.0	-40.2	-5.8
May-20	2.4	1.4	-0.9	1.1	13.0	0.5	6.2	8.3	-0.1	6.2	0.5	7.6	0.9
Jun-20	8.6	7.8	3.2	4.2	28.3	9.8	9.4	10.9	4.2	8.4	4.1	23.5	2.7
Jul-20	5.5	5.0	0.9	6.3	13.5	7.1	5.0	6.4	0.2	1.0	0.7	13.1	2.7
Aug-20	2.3	2.3	1.5	4.7	2.3	0.6	3.4	5.2	0.3	-0.8	-2.8	0.9	-3.0
Sep-20	1.0	0.7	0.6	2.4	0.1	-1.2	1.0	1.3	0.8	1.0	-2.0	4.1	0.3

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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