NIESR Monthly GDP Tracker

Structural Change Needed to Escape Low-Growth Trend

Paula Bejarano Carbo and Joanna Nowinska

12th May 2023

"Today's data suggest that GDP grew by 0.1 per cent in the first quarter of 2023 compared to the fourth quarter of 2022, in line with our forecast published in last month's tracker. Encouragingly, the services, production, and construction sectors all saw quarter-on-quarter growth – a further sign that the economy as a whole is exhibiting more resilience than previously thought. Though monthly GDP fell by 0.3 per cent in March following no growth in February, high-frequency data suggest that monthly GDP will bounce back strongly in April, likely driven by strong services performance. It is worth bearing in mind, however, that monthly GDP remains only 0.1 per cent above its February 2020 level – what we are seeing at the start of this year is (welcome) low growth, rather than a much-needed 'jump-start'."

Paula Bejarano Carbo

Associate Economist, NIESR
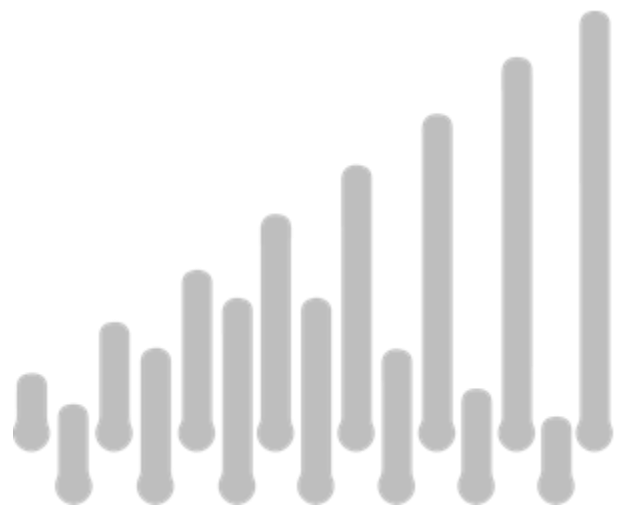
Main points

- Monthly GDP fell by 0.3 per cent in March 2023, following flat growth in February. This monthly figure was driven by a fall in services which offset monthly growth in construction and production.

- GDP grew by 0.1 per cent in the first quarter of 2023 relative to the previous three months, in line with our most recent forecast. As shown in figure 1 below, the UK economy has largely flatlined following the initial stages of post-pandemic recovery; today's monthly GDP is estimated to be only 0.1 per cent above its pre-pandemic (February 2020) level. As we stress in our latest UK Economic Outlook, for UK economic performance to 'jump-start' into a new era of high output growth, structural change will be needed.

- We expect that monthly GDP will bounce back in April, growing by 0.3 per cent relative to March, driven by growth in services. Indeed, the S&P Global/CIPS UK Services PMI reported an optimistic balance of 55.9 in April, up from 52.9 in March. Surveyed businesses noted a sustained rise in consumer spending in April, especially in the travel, tourism and leisure sub-sectors. However, a combination of high demand and still-high input costs meant that businesses continued to report passing on higher costs to clients, leading to an acceleration in the rate of price increase – this is concerning given the increasing embeddedness of inflation in the economy.

- For a comprehensive summary and forecast of the UK economy, please see our latest UK Economic Outlook, published today.

Figure 1 - UK GDP
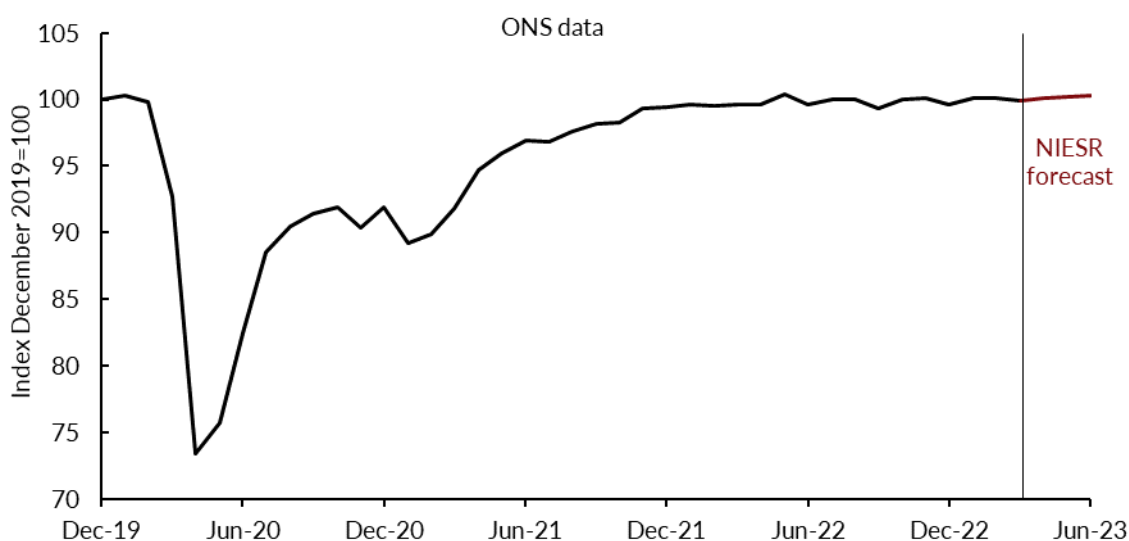
Economic setting

In our previous GDP tracker, published on 13 April, we observed that monthly GDP remained flat in February, driven by growth in construction – enabled by good weather conditions – being offset by contractions in services and production. GDP grew by 0.1 per cent in the three months to February compared to the previous three months. The data thus remained broadly consistent with the longer-term trend of low economic growth in the UK.

Our latest UK Economic Outlook, published today, highlights that despite recent positive news, we think GDP growth will remain close to zero in 2023. We forecast annual GDP growth of 0.3 per cent in 2023, compared to 2022 (which saw annual GDP growth of 4.1 per cent). This flatlining of the UK economy is due to multiple factors, including high inflation (which continues to erode household and firm budgets) and high interest rates (which will have a tangible impact on demand in the coming months). Two somewhat contradictory messages emerge from this forecast: on the one hand, the outlook is cautiously optimistic - it seems that the worst of the energy price shock is behind us and, contrary to what some may have expected, the UK will avoid facing a recession in the near-term; on the other hand, the outlook remains subdued – it will nonetheless feel like a recession for many households, who we expect will face an average fall to their real personal disposable incomes of roughly 2 per cent over the next three years.

Today's data suggest that monthly GDP fell by 0.3 per cent in March relative to February, driven by a contraction in services. GDP grew by 0.1 per cent in the first quarter or 2023, and our early forecast for the second quarter of this year sees GDP growing by 0.2 per cent. As we stress in the Outlook, for UK economic performance to 'jump-start' into a new era of high output growth, structural change will be needed. For instance, while the recent Budget introduced measures to boost business investment, these measures will in practice be more of a stopgap than a serious attempt at resolving the UK's chronic investment deficit. A bold reform to public sector investment ought to be considered. In our Outlook, one proposal made to this end is that of combining the National Infrastructure Commission and the UK Infrastructure Bank under the umbrella of a new National Development Bank, with an expanded remit and budget, to take public investment to over 3 per cent of GDP.

To further contextualise our forecast of 0.2 per cent growth in the second quarter of 2023, figure 2 compares spending and hiring indicators to pre-pandemic levels, while figure 3 records recent trends in PMIs. High frequency spending and hiring indicators have remained broadly stable throughout 2023, and our housing indicator has seen significant growth since March. Figure 3 illustrates a strong bounce-back in services output in April, though anaemic growth in manufacturing may continue to weigh down on GDP. Taken together, these two figures suggest that the economic outlook for the second quarter of 2023 is one of stable growth, but lower than the longer-term UK trend.

Figure 2 – Spending and hiring indicators (weekly indices)
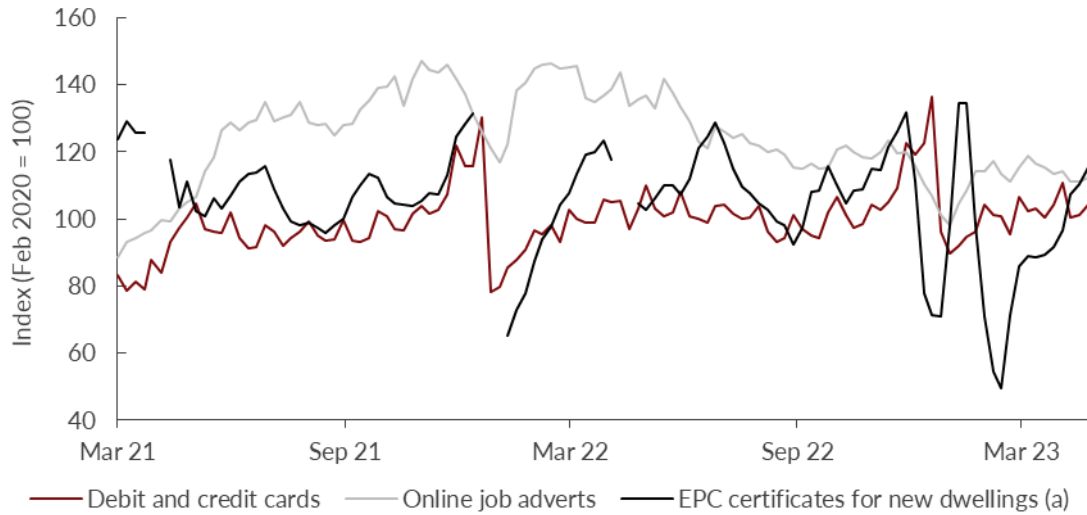
Notes: (a) England and Wales. Debit and credit cards (CHAPSbased): Index February 2020 = 100, a backward looking seven-day rolling average, non-seasonally adjusted, nominal prices. Job adverts: Index February 2020 = 100, weekly average. EPC certificates: Index February 2020 = 100, four–week rolling average, adjusted for timing of holidays.

Source: ONS, BoE, Adzuna, MHCLG, NIESR.

Figure 3 – Recent trends in PMIs
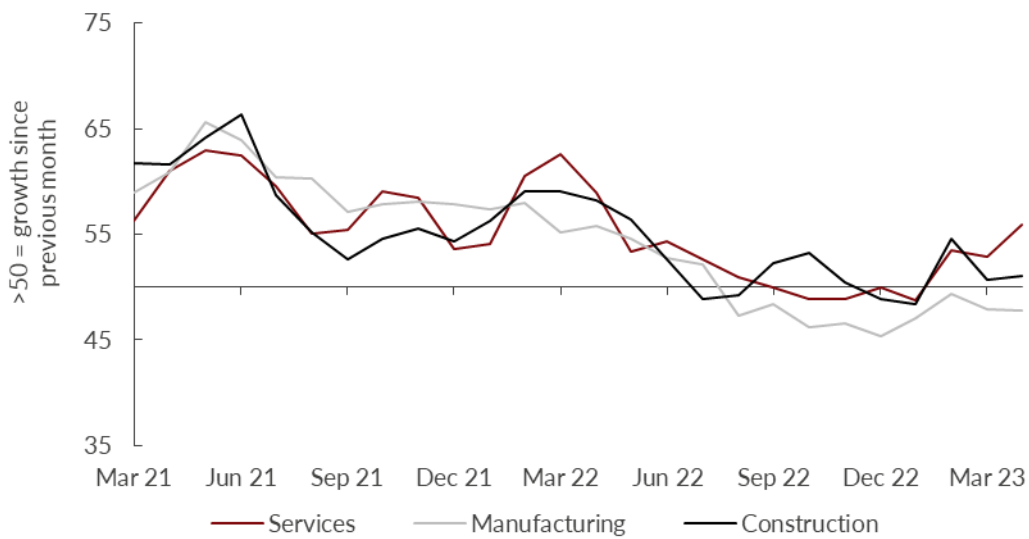
Sources: Refinitiv Datastream, S&P

News in latest ONS data

The monthly GDP data for March were worse than our April estimate, falling by 0.3 per cent rather than growing by 0.1 per cent. But, GDP grew by 0.1 per cent in the first quarter of 2023 overall, in line with our previous forecast.

Figure 4 – UK GDP growth (3 months on previous 3 months, per cent)

Figure 5 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.

Figure 5 – Surprises in monthly data

	01/22	02/22	03/22	04/22	05/22	06/22	07/22	08/22	09/22	10/22	11/22	12/22	01/23	02/23	03/23
Business services and finance	-0.1	0.2	-0.1	0.0	0.4	-0.4	0.0	-0.1	-0.4	0.2	0.1	0.5	-0.1	-0.3	0.0
Government	-0.4	-0.5	0.1	-0.1	0.1	0.0	0.3	-0.5	0.0	0.0	0.0	-0.9	0.4	0.0	0.0
Distribution , Hotels and Restaurants	0.1	0.0	0.0	-0.1	-0.1	0.2	0.0	0.1	-0.4	0.3	0.3	0.1	0.1	0.2	-0.2
Transport, Storage and Communication	0.5	0.2	-0.2	0.1	0.2	-0.4	0.0	0.0	-0.6	0.1	0.0	-0.3	0.3	-0.2	-0.2
Manufacturing	-0.8	-0.4	0.0	-0.4	0.1	-0.4	-0.7	-0.6	0.0	0.3	0.1	0.1	0.1	0.1	0.3
Electricity	0.6	0.3	-0.6	0.4	1.2	1.0	-0.1	-0.5	0.0	-1.1	-0.7	0.4	0.1	-0.4	1.0
Extraction	0.7	0.1	0.1	-0.3	0.4	-0.4	0.5	-1.3	0.0	-0.3	0.7	-0.7	-0.6	0.2	-0.8
Water Supply, Sewerage, Waste Management	0.7	-0.3	0.3	1.3	-0.4	0.6	-1.8	-0.4	-0.2	-1.4	-0.2	0.2	0.1	-0.8	1.9
Construction	0.4	-0.1	0.1	0.0	0.2	-0.2	0.0	0.1	0.0	0.1	0.0	0.2	-0.4	0.5	-0.5
Agriculture	-0.1	0.1	0.1	0.0	0.0	-0.1	-0.2	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0

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.

For more information on our forecast estimates relative to ONS data, please see the 'Health Warning' section below.

Sectoral detail

We forecast GDP to grow by 0.2 per cent in the second quarter of this year. As seen in Figure 6 below, we expect this to be driven by services, though we do expect to see low growth in all the major sectors.

Figure 6 - Contributions to quarterly GDP growth (percentage points)
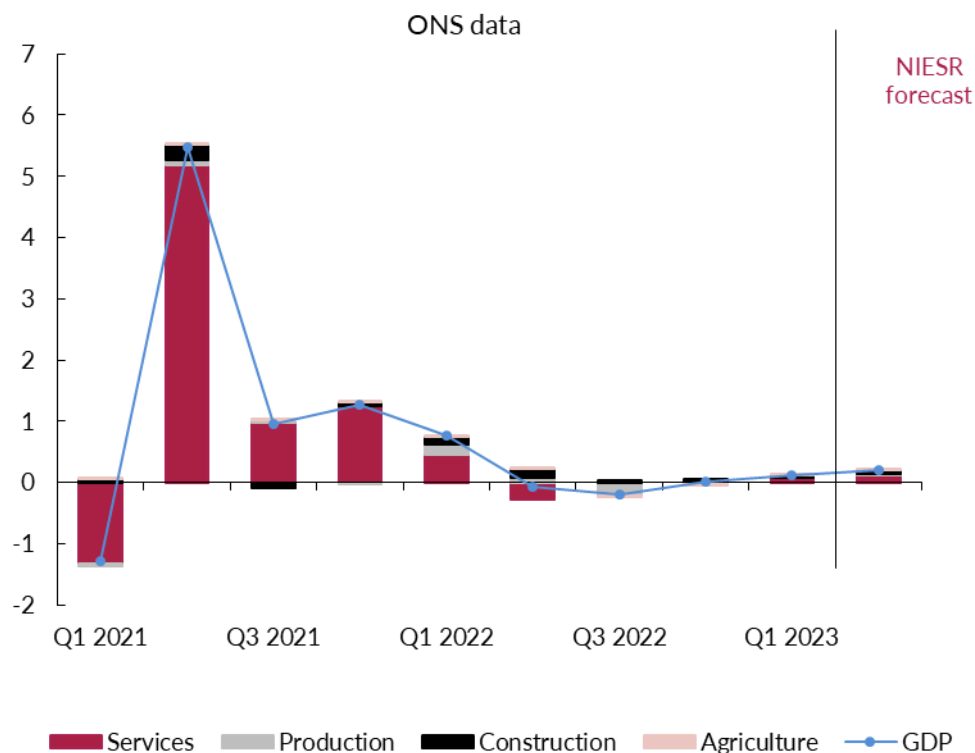
Services (80 per cent of GDP)

The survey balances point to a second consecutive month of increasing business activity in the services sector, as shown by the survey indicators in figures 3 and 7. The S&P Global/CIPS UK Services PMI reported an optimistic balance of 55.9 in April, up from 52.9 in March. Surveyed businesses noted a sustained rise in consumer spending in April, especially in the travel, tourism and leisure sub-sectors. A combination of high demand and still-high input costs meant that businesses continued to report passing on higher costs to clients, leading to an acceleration in the rate of price increase – this is concerning given the increasing embeddedness of inflation in the economy.

Based on recent developments we forecast UK service sector activity to grow by 0.1 per cent in the second quarter of 2023 relative to the previous quarter.

Construction (6 per cent of GDP)

The S&P Global/CIPS UK Construction PMI survey registered an increase to 51.1 in April from 50.7 in March. Commercial building was the fastest growing area of this sector.

Our forecast for the second quarter of 2023 sees growth of 1.0 per cent in this sector.

Figure 7 - ONS service sector growth (3 months on previous 3 months, per cent) compared with swathe of business survey balances (standardised)
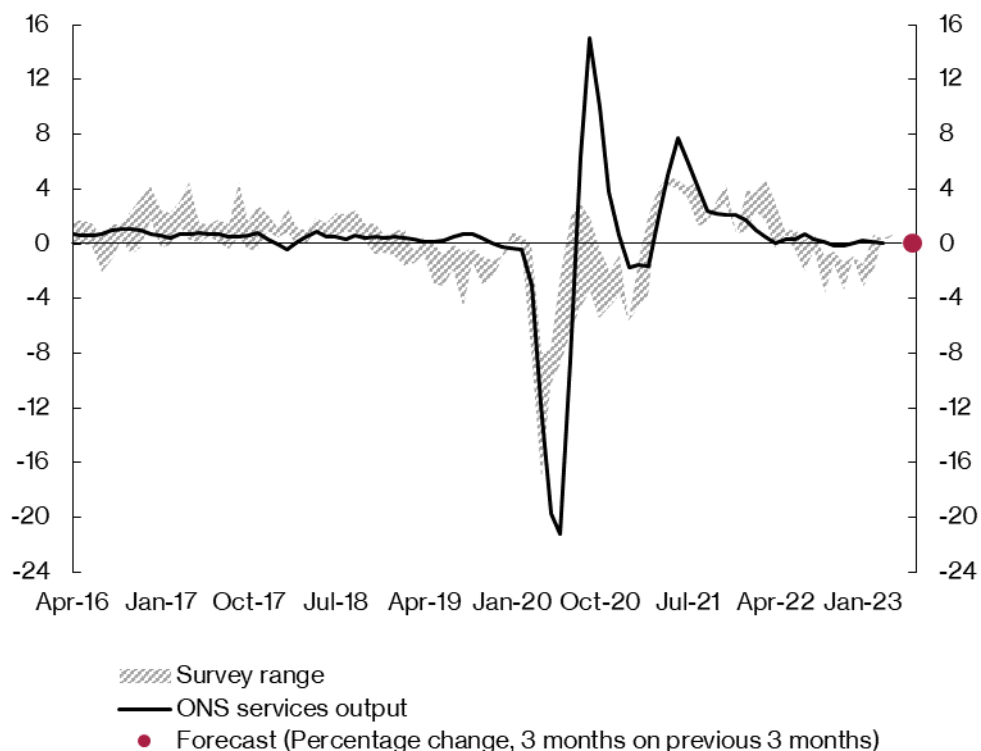
Note: The shaded swathe shows the highest and lowest values each month of a range of business survey balances that have been standardised so that they have the same mean and standard deviation as the quarterly growth of the ONS series.

Production (14 per cent of GDP)

We forecast that production sector output will grow by 0.2 per cent in the second quarter of 2023, though output in this sector is volatile and difficult to predict with accuracy on a quarterly basis. The production sector comprises manufacturing; mining and quarrying (which includes oil and gas extraction); electricity, gas, steam and air conditioning; and water supply and sewerage. The largest of these sectors are manufacturing, accounting for 10 per cent of GDP, and mining and quarrying, accounting for 1 per cent of GDP.

Manufacturing

The S&P Global/CIPS UK manufacturing PMI for January posted 47.8 in April, marginally down from 47.9 in March– representing the ninth consecutive month this sector has contracted (as noted by recording figures below the neutral 50). This sustained decline has been driven by a continuing combination of weakened domestic and export demand, eroding consumer confidence, Brexit-related trade difficulties, and a preference for reduced inventory holdings (as a cashflow-improving measure). That said, the rate of contraction in April was quite mild – hopefully signalling a turning point in this decline. Indeed, the PMI records that business optimism in this sector rose to a fourteen-month high.

Our forecast for the second quarter of 2023 sees growth of 0.4 per cent in this sector.

The S&P Global/CIPS UK Composite PMI – which combines comparable services and manufacturing indices – rose to 54.9 in April from 52.2 in March. It is positive that overall, private sector output seems to have experienced a sustained rebound over the course of the first quarter of 2023.

Mining and quarrying

Mining and quarrying (extraction) is a small but erratic component of industrial production that can have an influence on overall GDP growth. We forecast a contraction of 0.4 per cent in this sector in the second quarter of 2023.

Figure 8 - ONS manufacturing sector growth (3 months on previous 3 months, per cent) compared with swathe of business survey balances (standardised)
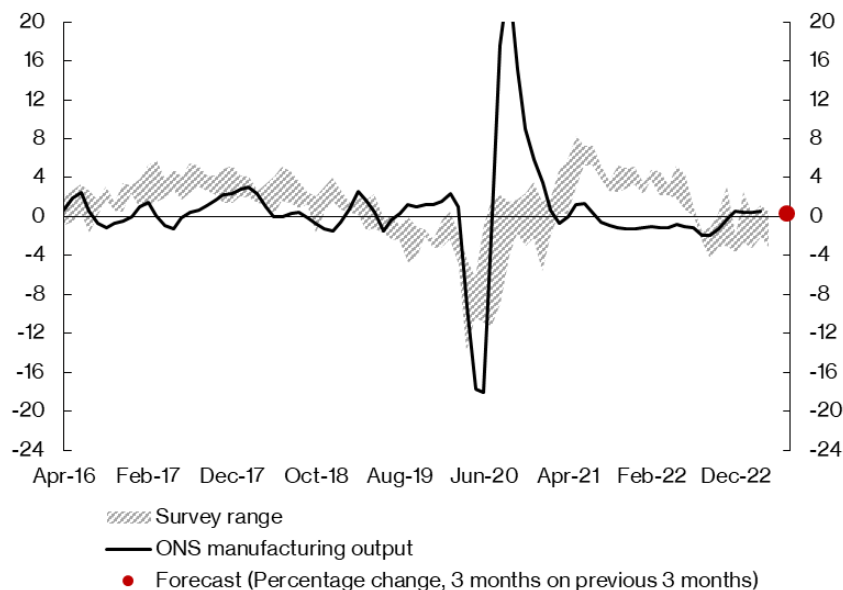
Note: The shaded swathe shows the highest and lowest values each month of a range of business survey balances that have been standardised so that they have the same mean and standard deviation as the quarterly growth of the ONS series.

Table 1 - Summary Table of GDP growth (2019=100)

| 2019=100	GDP index	Index of Services	Index of Services - Components				Index of Production	Index of Production - Components				Index of Construction	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	338	220	134	103	135	102	15	6	13	62	7
Mar-20	93.1	91.9	100.0	87.1	79.4	92.1	99.3	97.9	108.2	92.6	105.2	94.6	99.7
Apr-20	73.7	73.7	91.4	62.1	47.7	73.9	81.2	74.7	100.0	96.1	97.6	55.1	89.0
May-20	76.0	75.1	92.0	62.1	53.7	75.1	87.3	82.4	102.0	99.1	98.1	61.0	90.9
Jun-20	82.8	80.9	94.7	66.4	69.1	81.5	97.5	94.3	108.5	102.6	104.5	74.0	93.5
Jul-20	88.9	86.7	95.6	76.1	80.4	87.0	102.9	101.2	112.5	101.9	105.6	87.1	94.8
Aug-20	90.8	88.4	95.4	79.3	86.7	88.0	104.9	104.3	114.1	94.6	107.5	89.8	96.0
Sep-20	91.8	89.1	96.2	81.8	84.0	88.5	106.5	107.0	114.5	92.6	105.3	92.9	96.8
Oct-20	92.3	89.5	96.7	82.4	82.2	90.3	107.6	108.5	110.9	95.1	107.2	94.7	96.0
Nov-20	90.7	87.1	96.7	80.5	71.1	89.7	109.3	111.3	110.5	92.0	107.7	95.2	95.9
Dec-20	92.3	89.1	99.7	81.9	74.8	89.4	110.1	111.0	113.6	96.8	110.7	93.7	97.2
Jan-21	89.6	86.1	98.7	76.0	67.9	89.9	108.5	108.5	117.4	94.0	110.3	92.2	97.4
Feb-21	90.2	86.5	99.4	75.7	70.2	89.0	108.8	109.4	118.7	87.2	111.7	95.7	98.4
Mar-21	92.2	88.7	101.1	79.8	72.3	90.1	109.7	110.7	116.5	88.7	112.2	98.7	99.6
Apr-21	95.1	92.4	100.5	86.2	81.7	93.2	108.8	110.8	119.9	73.6	111.1	100.0	99.2
May-21	96.3	93.7	100.6	88.8	86.3	92.5	110.4	111.4	127.8	76.8	111.1	99.1	100.6
Jun-21	97.3	95.3	101.5	90.7	88.7	93.5	108.6	110.7	120.4	68.8	113.7	98.4	102.3
Jul-21	97.2	95.1	101.1	90.4	88.4	94.7	108.8	110.2	114.7	81.9	114.4	97.7	103.7
Aug-21	98.0	96.1	101.4	91.9	90.3	95.3	109.4	110.1	110.3	97.1	113.2	97.3	104.9
Sep-21	98.6	96.9	102.8	93.5	90.4	94.7	108.3	109.6	108.3	93.7	111.3	97.8	104.7
Oct-21	98.7	97.3	102.6	94.3	89.6	97.2	107.2	108.8	102.9	90.0	115.0	97.5	104.8
Nov-21	99.7	98.4	103.8	96.2	88.7	98.6	107.5	108.5	108.9	87.7	115.0	99.3	104.6
Dec-21	99.8	98.4	104.1	97.5	85.8	99.1	107.5	108.5	109.7	85.6	115.7	100.2	104.6
Jan-22	100.0	98.6	103.4	95.9	87.5	101.8	107.5	107.7	112.0	90.2	116.0	101.2	104.7
Feb-22	99.9	98.5	104.0	94.7	88.4	102.9	107.2	107.2	112.3	90.1	115.8	101.2	105.4
Mar-22	100.0	98.5	104.0	94.9	87.4	102.4	107.1	107.3	110.5	90.5	116.3	103.2	105.8
Apr-22	100.0	98.5	104.2	93.9	88.3	102.5	106.6	106.5	111.9	87.9	117.8	103.1	105.8
May-22	100.8	99.4	105.3	95.3	88.3	103.5	106.7	106.9	112.5	88.5	114.6	105.5	106.0
Jun-22	100.0	98.8	104.6	94.5	88.1	102.9	105.6	105.5	111.5	86.2	116.4	102.8	106.1
Jul-22	100.4	99.3	104.8	95.2	88.4	104.0	105.2	104.9	110.9	91.3	113.4	104.0	106.2
Aug-22	100.4	99.4	105.0	95.3	87.7	105.3	103.9	104.0	110.2	83.8	113.7	104.6	106.0
Sep-22	99.7	98.5	104.2	94.9	86.3	102.9	104.0	104.0	110.0	84.6	114.2	104.5	105.4
Oct-22	100.4	99.2	104.7	95.8	87.7	103.2	104.4	105.2	106.7	84.4	112.8	105.2	105.5
Nov-22	100.5	99.5	104.9	95.4	87.9	104.8	104.4	104.6	106.7	86.7	115.1	105.5	105.3
Dec-22	100.0	98.7	105.4	93.2	87.7	103.7	104.6	104.7	110.7	82.3	115.9	106.3	105.3
Jan-23	100.5	99.5	105.3	94.7	88.2	105.4	104.3	105.1	108.6	79.3	115.3	104.6	105.4
Feb-23	100.5	99.3	105.6	94.5	88.1	104.6	104.2	105.2	107.2	81.2	113.6	107.3	105.4
Mar-23	100.3	98.8	105.3	94.3	87.5	103.3	105.0	105.9	108.3	80.1	115.5	107.5	105.4
Apr-23	100.6	99.3	105.7	94.6	87.6	104.2	104.7	105.7	107.8	79.7	115.6	107.5	105.4
May-23	100.6	99.4	105.9	94.6	87.6	104.3	104.7	105.8	106.9	80.0	115.5	107.5	105.5
Jun-23	100.7	99.5	106.2	94.5	87.5	104.4	104.7	105.9	106.2	79.8	115.8	107.5	105.6

Percentage change, 3 months on previous 3 months

Sep-21	1.7	2.4	0.9	3.8	4.8	2.0	-0.4	-0.9	-9.5	24.4	0.9	-1.6	3.7
Oct-21	1.5	2.2	1.2	3.6	2.6	2.3	-0.9	-1.1	-11.4	23.4	0.1	-0.9	2.5
Nov-21	1.5	2.2	1.7	4.0	0.5	2.5	-1.2	-1.2	-7.3	9.5	0.0	0.4	1.0
Dec-21	1.5	2.1	1.7	4.4	-1.9	3.6	-1.4	-1.2	-3.5	-3.4	2.0	1.4	0.2
Jan-22	1.4	1.7	1.5	3.5	-3.1	4.3	-0.8	-1.2	2.8	-6.2	2.1	2.8	-0.2
Feb-22	0.9	1.0	0.7	1.4	-2.6	4.6	-0.3	-1.1	4.3	-2.0	1.8	2.7	0.2
Mar-22	0.6	0.5	0.3	-0.9	-0.3	4.1	-0.1	-1.1	4.1	2.8	0.7	2.9	0.6
Apr-22	0.1	0.1	0.3	-2.1	0.8	2.8	-0.5	-1.1	1.2	1.9	0.9	2.3	1.0
May-22	0.3	0.3	0.6	-1.4	0.9	1.5	-0.5	-0.8	0.3	0.4	0.3	3.0	0.9
Jun-22	0.3	0.4	0.9	-0.6	0.5	0.6	-0.9	-1.0	0.3	-3.0	0.2	1.9	0.6
Jul-22	0.5	0.6	0.8	0.5	0.3	0.8	-1.0	-1.2	0.1	-0.9	-1.6	1.6	0.4
Aug-22	0.0	0.4	0.3	0.3	0.1	1.2	-1.8	-2.0	-0.7	-2.1	-1.5	-0.1	0.2
Sep-22	-0.1	0.2	0.0	0.6	-0.9	1.1	-1.8	-1.9	-1.4	-1.1	-2.2	0.5	-0.1
Oct-22	-0.3	-0.1	-0.3	0.4	-1.2	0.3	-1.6	-1.3	-2.4	-5.0	-1.1	0.6	-0.4
Nov-22	-0.1	-0.1	-0.2	0.4	-0.9	-0.4	-0.6	-0.2	-2.8	-2.1	-0.4	1.2	-0.7
Dec-22	0.1	0.1	0.3	-0.4	0.3	-0.2	0.0	0.5	-2.1	-2.4	0.7	1.2	-0.5
Jan-23	0.2	0.2	0.5	-0.9	0.8	0.8	0.3	0.4	-0.3	-1.8	1.6	0.7	-0.3
Feb-23	0.2	0.1	0.8	-1.3	0.8	0.9	0.1	0.4	1.0	-5.0	0.8	1.0	0.0
Mar-23	0.1	0.1	0.4	-0.3	0.2	0.5	0.1	0.5	0.0	-5.1	0.2	0.8	0.0
Apr-23	0.1	-0.1	0.3	0.0	-0.2	-0.6	0.2	0.8	-0.8	-2.9	-0.5	1.9	0.1
May-23	0.1	0.0	0.2	0.4	-0.5	-0.6	0.4	0.8	-1.1	-1.2	0.5	1.4	0.1
Jun-23	0.2	0.1	0.5	0.0	-0.4	-0.1	0.2	0.4	-1.0	-0.4	0.7	1.0	0.1

Percentage change, month on same month in previous year

Sep-21	7.4	8.8	6.9	14.3	7.6	7.0	1.7	2.4	-5.4	1.2	5.7	5.3	8.2
Oct-21	6.9	8.7	6.1	14.4	9.0	7.6	-0.4	0.3	-7.2	-5.4	7.3	3.0	9.2
Nov-21	10.0	13.0	7.3	19.5	24.8	9.9	-1.7	-2.5	-1.4	-4.7	6.8	4.3	9.1
Dec-21	8.2	10.5	4.4	19.0	14.7	10.9	-2.4	-2.3	-3.4	-11.6	4.5	6.9	7.6
Jan-22	11.6	14.5	4.8	26.2	28.9	13.2	-0.9	-0.7	-4.6	-4.0	5.2	9.8	7.5
Feb-22	10.8	13.9	4.6	25.1	25.9	15.6	-1.5	-2.0	-5.4	3.3	3.7	5.7	7.1
Mar-22	8.4	11.0	2.9	18.9	20.9	13.7	-2.4	-3.1	-5.2	2.0	3.7	4.6	6.2
Apr-22	5.1	6.7	3.7	8.9	8.1	10.0	-2.0	-3.9	-6.7	19.4	6.0	3.1	6.7
May-22	4.6	6.0	4.7	7.3	2.3	11.9	-3.3	-4.0	-12.0	15.2	3.2	6.5	5.4
Jun-22	2.8	3.7	3.1	4.2	-0.7	10.1	-2.8	-4.7	-7.4	25.3	2.4	4.5	3.7
Jul-22	3.3	4.4	3.7	5.3	0.0	9.8	-3.3	-4.8	-3.3	11.5	-0.9	6.4	2.4
Aug-22	2.5	3.5	3.6	3.7	-2.9	10.5	-5.0	-5.5	-0.1	-13.7	0.4	7.5	1.0
Sep-22	1.1	1.6	1.4	1.5	-4.5	8.7	-4.0	-5.1	1.6	-9.7	2.6	6.9	0.7
Oct-22	1.7	2.0	2.0	1.6	-2.1	6.2	-2.6	-3.3	3.7	-6.2	-1.9	7.9	0.7
Nov-22	0.9	1.1	1.1	-0.8	-0.9	6.3	-2.9	-3.6	-2.0	-1.1	0.1	6.2	0.7
Dec-22	0.2	0.3	1.2	-4.4	2.2	4.6	-2.7	-3.5	0.9	-3.9	0.2	6.1	0.7
Jan-23	0.5	0.9	1.8	-1.3	0.8	3.5	-3.0	-2.4	-3.0	-12.1	-0.6	3.4	0.7
Feb-23	0.6	0.8	1.5	-0.2	-0.3	1.7	-2.7	-1.9	-4.5	-9.9	-1.9	6.0	0.0
Mar-23	0.3	0.4	1.3	-0.6	0.1	0.9	-2.0	-1.3	-2.0	-11.5	-0.7	4.2	-0.4
Apr-23	0.6	0.7	1.4	0.8	-0.8	1.7	-1.8	-0.7	-3.7	-9.3	-1.9	4.3	-0.3
May-23	-0.1	0.0	0.6	-0.8	-0.8	0.7	-1.9	-1.0	-5.0	-9.6	0.8	1.9	-0.5
Jun-23	0.7	0.7	1.6	0.0	-0.7	1.5	-0.9	0.4	-4.8	-7.4	-0.5	4.6	-0.5

Percentage change, month on previous month

Sep-21	0.6	0.9	1.4	1.7	0.1	-0.6	-1.0	-0.5	-1.8	-3.5	-1.7	0.5	-0.2
Oct-21	0.1	0.4	-0.2	0.9	-0.9	2.6	-1.0	-0.7	-5.0	-3.9	3.3	-0.3	0.1
Nov-21	1.0	1.1	1.2	2.0	-1.0	1.4	0.2	-0.3	5.8	-2.6	0.0	1.8	-0.2
Dec-21	0.1	0.1	0.3	1.4	-3.3	0.5	0.0	0.0	0.7	-2.4	0.6	0.9	0.0
Jan-22	0.2	0.1	-0.7	-1.6	2.0	2.7	0.0	-0.7	2.1	5.4	0.3	1.0	0.1
Feb-22	-0.1	0.0	0.6	-1.3	1.0	1.1	-0.3	-0.5	0.3	-0.1	-0.2	0.0	0.7
Mar-22	0.1	0.0	0.0	0.2	-1.1	-0.5	-0.1	0.1	-1.6	0.4	0.4	2.0	0.4
Apr-22	0.0	0.0	0.2	-1.1	1.0	0.1	-0.4	-0.7	1.3	-2.9	1.3	-0.1	0.0
May-22	0.8	0.8	1.1	1.5	0.0	1.0	0.1	0.4	0.5	0.7	-2.7	2.3	0.2
Jun-22	-0.7	-0.5	-0.7	-0.8	-0.2	-0.6	-1.1	-1.3	-0.9	-2.6	1.6	-2.6	0.1
Jul-22	0.4	0.4	0.2	0.7	0.3	1.1	-0.4	-0.6	-0.5	5.9	-2.6	1.2	0.1
Aug-22	0.0	0.0	0.2	0.1	-0.8	1.3	-1.2	-0.9	-0.6	-8.2	0.3	0.6	-0.2
Sep-22	-0.7	-0.9	-0.8	-0.4	-1.6	-2.3	0.1	0.0	-0.2	1.0	0.4	-0.1	-0.6
Oct-22	0.7	0.7	0.5	0.9	1.6	0.3	0.3	1.2	-3.0	-0.2	-1.2	0.7	0.1
Nov-22	0.2	0.2	0.2	-0.4	0.2	1.6	0.0	-0.6	0.0	2.7	2.0	0.3	-0.2
Dec-22	-0.5	-0.8	0.5	-2.3	-0.2	-1.0	0.2	0.1	3.7	-5.1	0.7	0.8	0.0
Jan-23	0.5	0.8	-0.1	1.6	0.6	1.6	-0.3	0.4	-1.9	-3.6	-0.5	-1.6	0.1
Feb-23	0.0	-0.1	0.3	-0.2	-0.1	-0.8	-0.1	0.1	-1.3	2.4	-1.5	2.6	0.0
Mar-23	-0.3	-0.5	-0.3	-0.2	-0.7	-1.2	0.7	0.7	1.0	-1.4	1.7	0.2	0.0
Apr-23	0.3	0.4	0.4	0.3	-0.2	0.9	-0.2	-0.2	-0.5	-0.5	0.1	0.0	0.1
May-23	0.1	0.1	0.3	-0.1	-0.1	0.0	0.0	0.1	-0.8	0.4	0.0	0.0	0.1
Jun-23	0.1	0.1	0.3	0.0	-0.1	0.1	-0.1	0.0	-0.7	-0.3	0.2	0.0	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 was published in January and then updated four times (in February, March, April and May) before the ONS published 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. Figure 9 shows how our short-term forecasts for recent quarters have changed as new information has become available.

Figure 9 - Evolution of the NIESR quarterly GDP forecast (3 months on previous 3 months, per cent)
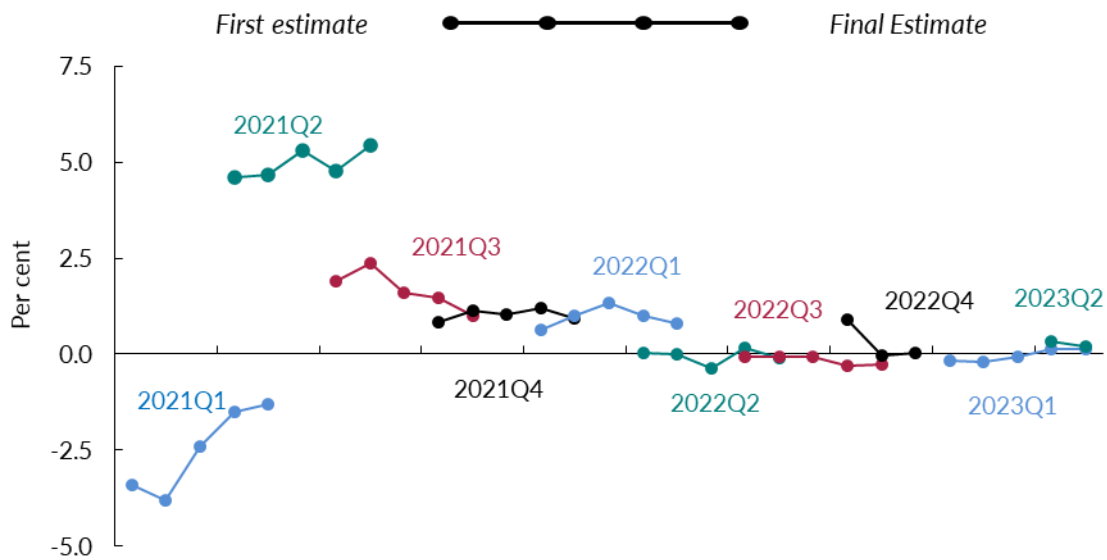
NIESR's short-term predictions of monthly GDP growth are based on bottom-up analysis of recent trends in the monthly sub-components of GDP. These predictions are constructed by aggregating statistical model forecasts of ten sub-components of GDP. The statistical models that have been developed make use 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. Table 2 shows the growth in each sector for the three months to March, compared with the previous three months, against the forecast for each in our April GDP Tracker.

Table 2 - 3-month-on-3-month growth to March (per cent)

	GDP	Index of Services	Index of Production	Manufacturing	Mining and Quarrying	Index of Construction
Forecast	0.1	0.2	-0.4	-0.2	-3.8	0.5
Outturn	0.1	0.1	0.1	0.5	-5.1	0.8

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 (see, e.g., Figure 5).

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 3, 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 0.22 percentage points. The largest error was for the second quarter of 2020 when our GDP tracker in May pointed to growth of -22.8 per cent, 2.4 percentage points lower than the ONS first estimate of GDP growth.

Table 3 - Forecast Error Analysis: Quarterly GDP growth (per cent)

Quarter	ONS first estimate	ONS latest estimate	NIESR nowcast*	Error in NIESR nowcast**	ONS latest – first
2016Q4	0.6	0.7	0.7	-0.1	0.1
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	0.0	0.5	-0.4	-0.1
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	0.6	0.2	0.3	0.1
2019Q2	-0.2	-0.2	0.3	-0.5	0.0
2019Q3	0.3	0.4	0.2	0.1	0.1
2019Q4	0.0	0	0.2	-0.2	0.0
2020Q1	-2.0	-2.1	0.2	-2.2	-0.1
2020Q2	-20.4	-20.4	-22.8	2.4	0.0
2020Q3	15.5	16.1	15.0	0.5	0.6
2020Q4	1.0		-2.2	3.2	
2021Q1			-3.8		
Average absolute error				0.22	0.08

Notes for Editors:

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