

# NIESR

## Monthly GDP Tracker

UK Economy Shows Resilience in the First Quarter of 2023

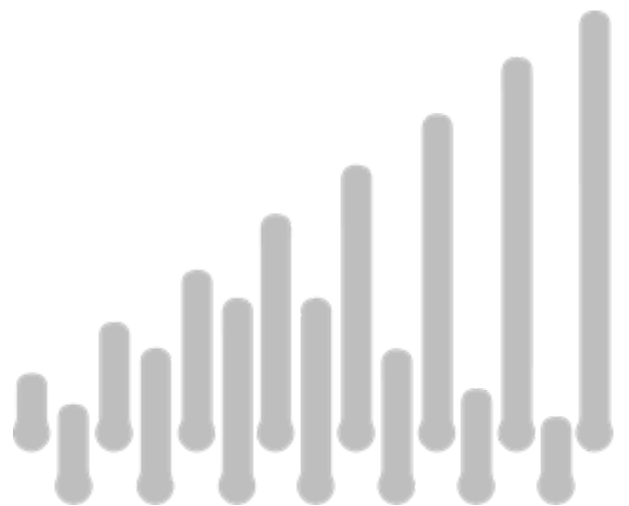
Paula Bejarano Carbo and Joanna Nowinska

13<sup>th</sup> April 2023

*“Today’s ONS figure suggests that monthly GDP remained flat in February following growth of 0.4 per cent in January, as a boost in construction was offset by contractions in the services and production sectors. Encouragingly, GDP grew by 0.1 per cent in the three months to February compared to the three months to November. Paired with optimistic PMI balances and higher-frequency spending data, the UK economic outlook for the first quarters of this year appears to be more resilient than previously thought, though broadly consistent with the longer-term trend of flatlining economic growth.”*

**Paula Bejarano Carbo**

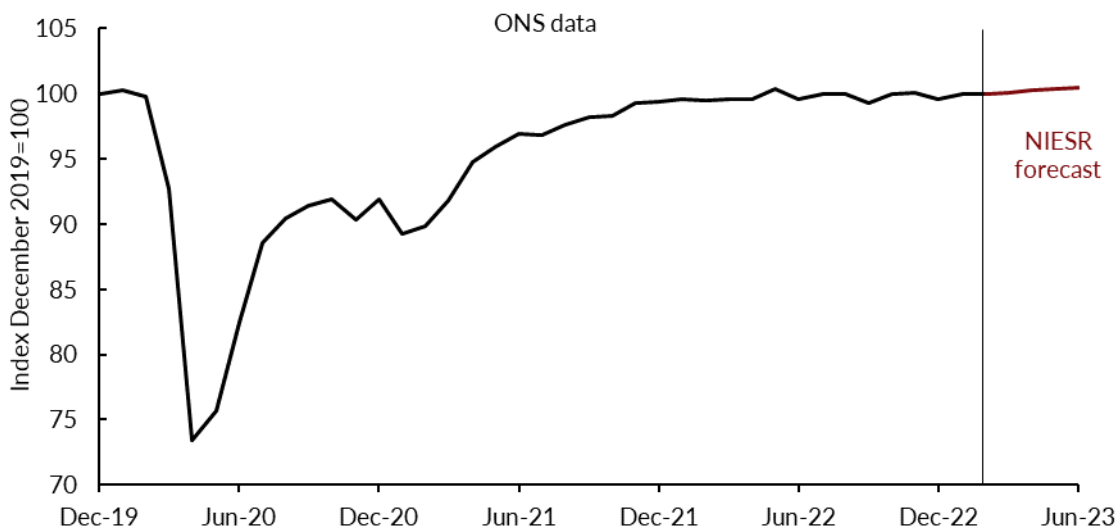
Associate Economist, NIESR



### Main points

- Monthly GDP remained flat in February 2023, following growth of 0.4 per cent in January (revised upwards from 0.3 per cent). This monthly figure was driven by growth in construction – enabled by good weather conditions in February – being offset by contractions in services and production. The services sector was particularly affected by decreases in education and public administration activities resulting from industrial action.
- GDP grew by 0.1 per cent in the three months to February relative to the previous three months. 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 0.3 per cent above its pre-pandemic (February 2020) level.
- We estimate that GDP grew by 0.1 per cent in the first quarter of 2023, an improvement on our previous forecast of -0.1 per cent, though in line with our expectation that upward risks would emerge. Indeed, higher-frequency data, including the S&P Global/CIPS UK PMIs as well as spending and hiring indicators indicate the UK economy experienced stable low growth over the course of Q1. Our early forecast for the second quarter of 2023 sees this quarterly growth rate increasing to 0.3 per cent.

Figure 1 - UK GDP



## Economic setting

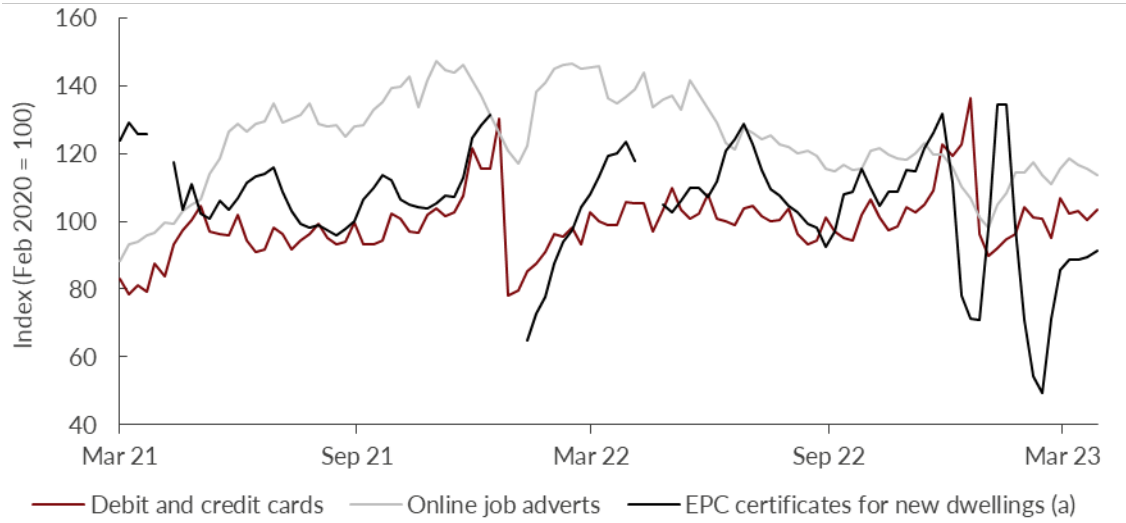
In our [previous GDP tracker](#), published 10 March, we observed that monthly GDP grew by 0.3 per cent in January 2023 (since revised to 0.4 per cent), driven by the services sector which saw a pick-up in education, transport and storage, and healthcare and social work activities relative to December. We noted that while the monthly growth figure appeared to be good news, the broader picture seemed to indicate an overall flatlining of the UK economy. Still, the outlook for the first quarter of 2023 improved relative to our previous forecast; indeed, the January GDP data coupled with optimistic higher-frequency indicators led us to forecast a shallow contraction in GDP growth of -0.1 per cent in the first quarter of 2023, compared to our earlier estimate of -0.2 per cent. Our forecast thus remained broadly consistent with the longer-term trend of low economic growth in the UK.

On 31 March, the ONS released its [GDP Quarterly National Accounts](#) (QNA) for October to December 2022. GDP growth in the third and fourth quarters of 2022 were revised upwards by 0.1 percentage points, to -0.1 per cent and to 0.1 per cent, respectively. Annual GDP is now estimated to have grown by 4.1 per cent in 2022, as forecast in our [Winter UK Economic Outlook](#). Two revisions to the Q4 data stand out as particularly informative: firstly, the upwards revision to headline GDP followed from upwards revisions to all three major sectors' output (including a significant increase in manufacturing, which had seen over a year of consistent decline); secondly, the household-sector savings ratio increased to 9.3 per cent in Q4 from 8.9 per cent in Q3 as government transfers and increased wage growth offset cost-of-living pressures for many savers. These revisions point to an increased likelihood of upward risks to our GDP forecast.

Today's data suggest that monthly GDP remained flat in February and grew by 0.1 per cent in the three months to February compared to the previous three months. We now estimate that GDP grew by 0.1 per cent in the first quarter of 2023, and our early forecast for the second quarter of this year sees GDP growing by 0.3 per cent. Overall, our view of the economic outlook for the first half of this year is cautiously optimistic (albeit remaining one of low growth).

To further contextualise our forecast for the first quarter of 2023, figure 2 compares spending and hiring indicators to pre-pandemic levels, while figure 3 records recent trends in PMIs. High frequency indicators show that debit and credit card spending has seen a sustained recovery throughout the first quarter of the year after having plummeted to pre-pandemic levels following the Christmas peak. Labour market and construction indicators also show activity picking up over the course of the first quarter of 2023. Figure 3 illustrates that we have yet to see a sustained recovery of business activity in the key sectors of the UK economy: as all three sectors recorded lower PMI balances in March than February. That said, the services and construction sectors recorded expanding output for a second consecutive month. Taken together, these two figures suggest that the economic outlook for the first quarter of 2023 is one of stable low growth, in line with the longer-term UK economic 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 February were better than our March estimate, remaining flat rather than contracting by 0.1 per cent. GDP grew by 0.1 per cent in the three months to February, compared to our previous forecast of a 0.1 per cent contraction.

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

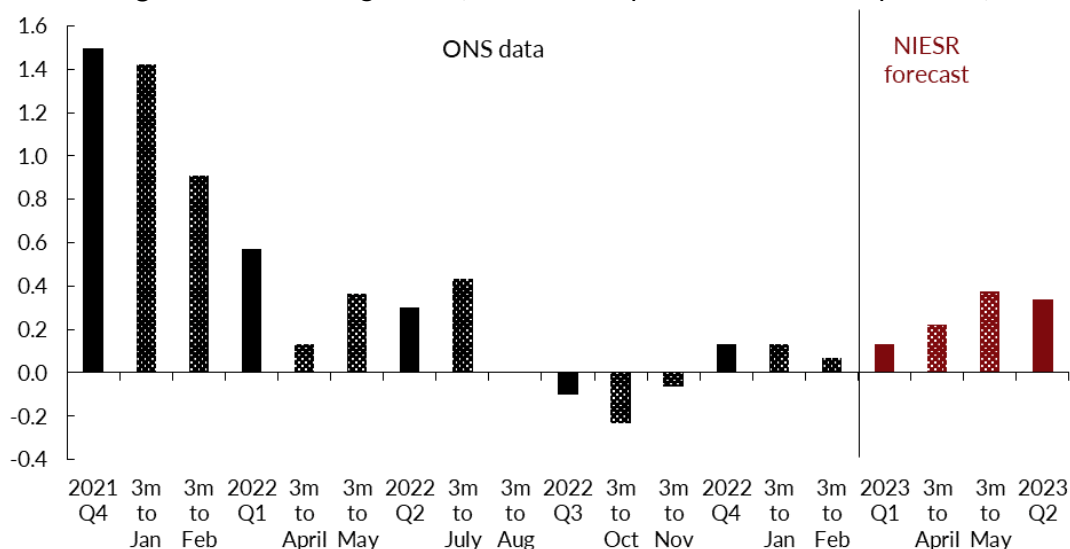
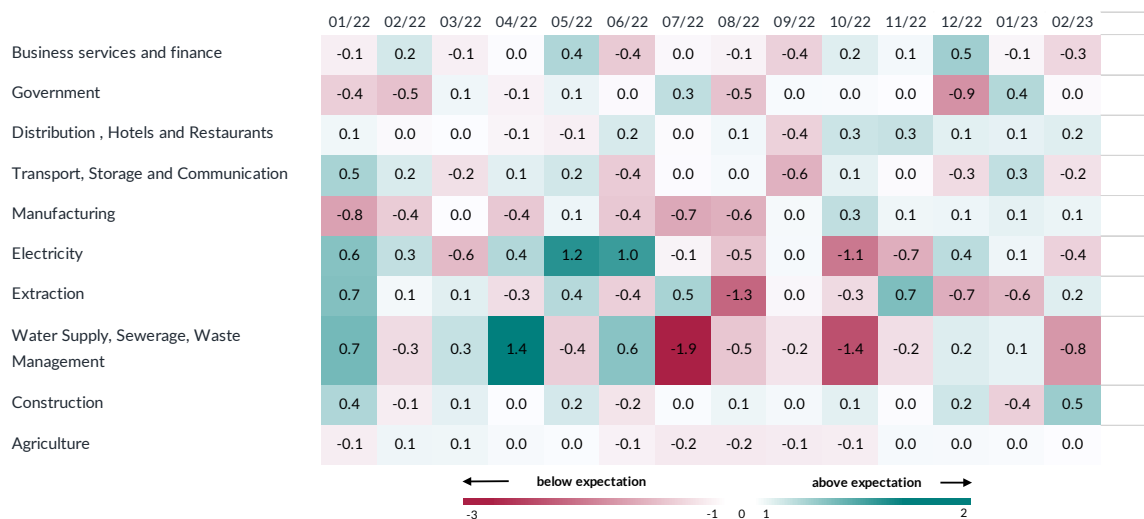


Figure 5 shows a heat map of the data surprises across sectors in the monthly data, relative to last month’s GDP Tracker, highlighting the sectors where the surprises are large relative to the volatility of the output data.

**Figure 5 – Surprises in monthly data**



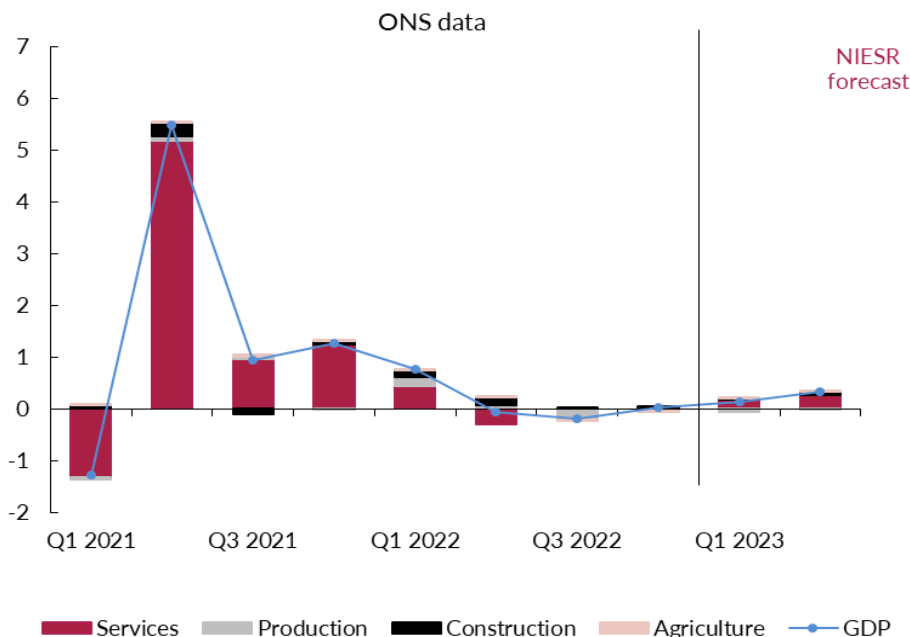
Note: Cells show forecast errors as a fraction of the standard deviation of errors for each series.

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

### Sectoral detail

We estimate that GDP grew by 0.1 per cent in the first quarter of 2023. Our early forecast for the second quarter of this year is for GDP to grow by 0.3 per cent.

**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 a balance of 52.9 in March, down from 53.5 in February. Surveyed businesses noted a sustained rise in consumer confidence following February’s strong performance. Further, March marked the strongest rise in new export sales since data collection for this series began in 2014. Though prices charged by businesses grew at their softest pace since August 2021, businesses reported passing on higher wages to clients – this is concerning given the increasing embeddedness of inflation in the economy.

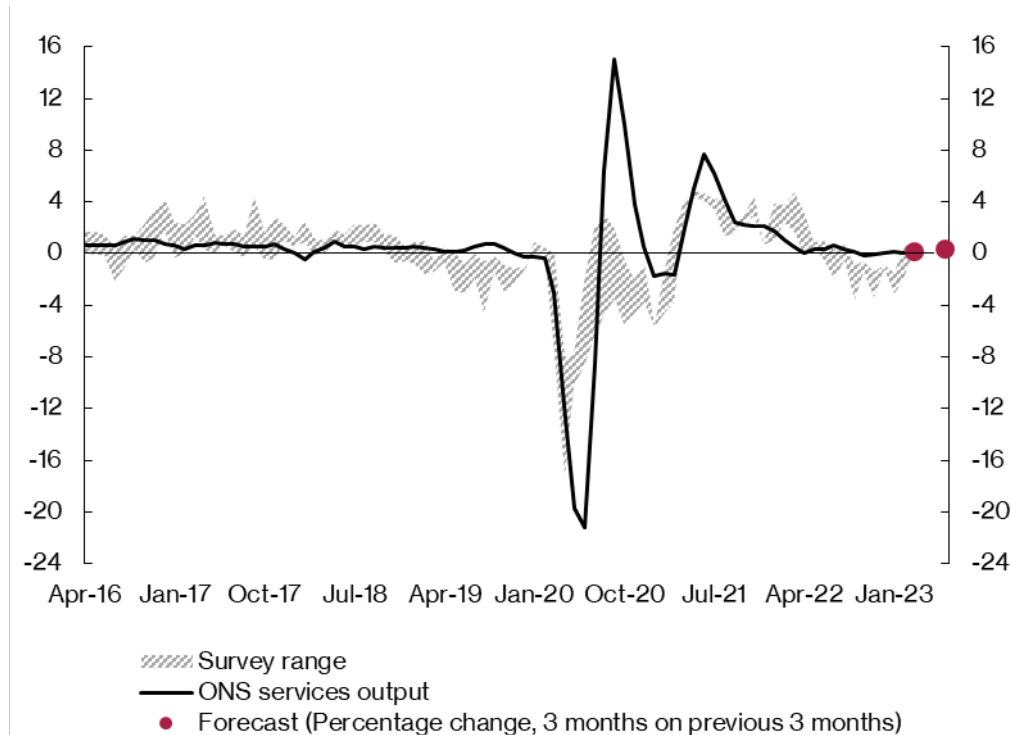
Based on recent developments we estimate UK service sector activity to have grown by 0.2 per cent in the first quarter of 2023 relative to the previous quarter. Our early forecast for the second quarter of 2023 is for services to grow by 0.3 per cent relative to the first quarter.

### Construction (6 per cent of GDP)

The S&P Global/CIPS UK Construction PMI survey registered a decrease from 54.6 in February to 50.7 in March. Surveyed businesses noted a boost from work on HS2 infrastructure projects, offsetting a decline in housing construction activity caused by elevated borrowing costs.

We estimate that UK construction activity grew by 0.5 per cent in the first quarter of 2023. Our forecast for the second quarter of 2023 sees growth of 0.8 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. Source: ONS, CBI, Markit, Bank of England Agents, EC, NIESR calculations.

## Production (14 per cent of GDP)

We estimate that production sector output contracted by 0.4 per cent in the first quarter of 2023 and forecast that it will contract by 0.1 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; electricity, gas, steam and air conditioning; water supply and sewerage; and oil and gas extraction. 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 47.9 in March, down from 49.3 in February – representing the eighth 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).

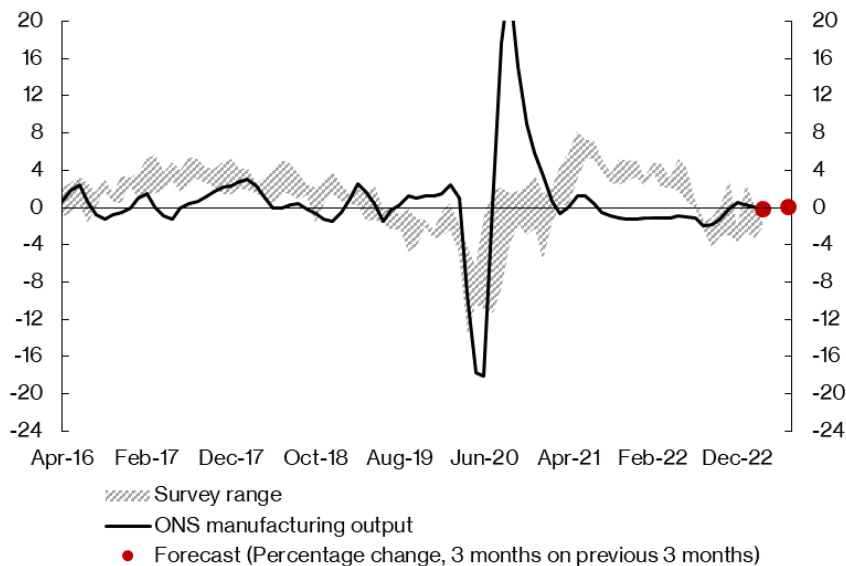
We estimate that UK manufacturing service activity contracted by 0.2 per cent in the first quarter of 2023. Our forecast for the second quarter of 2023 sees growth of 0.1 per cent in this sector.

The S&P Global/CIPS UK Composite PMI – which combines comparable services and manufacturing indices – saw a slight fall to 52.2 in March from 53.1 in February. 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 estimate a contraction of 3.8 per cent in this sector in the first quarter of 2023 and forecast growth will flatline 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.  
 Source: ONS, CBI, Markit, Bank of England Agents, EC, NIESR calculations.



**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-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	103.3	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	100.4	99.4	105.6	94.3	87.9	105.4	104.1	104.7	108.6	79.7	115.8	104.5	105.4
Feb-23	100.4	99.3	105.3	94.0	88.2	104.9	103.9	104.7	106.2	82.1	114.3	107.1	105.5
Mar-23	100.5	99.4	105.7	94.1	88.3	105.2	104.0	104.6	107.4	82.1	114.9	107.1	105.6
Apr-23	100.7	99.6	105.9	94.3	88.0	105.8	104.0	104.6	107.1	81.2	115.3	107.1	105.7
May-23	100.8	99.7	106.2	94.3	88.0	106.0	103.9	104.8	106.1	81.3	115.3	107.1	105.7
Jun-23	100.9	99.8	106.5	94.3	87.9	106.4	103.9	104.8	105.4	81.3	115.5	107.1	105.8

**Percentage change, 3 months on previous 3 months**

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	0.0	0.3	-2.1	0.8	2.8	-0.5	-1.1	1.2	1.9	0.9	2.3	1.0
May-22	0.4	0.3	0.6	-1.4	0.9	1.5	-0.6	-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	0.4	0.7	0.8	0.5	0.3	0.8	-1.1	-1.2	0.1	-0.9	-1.6	1.5	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	0.6	-0.1
Oct-22	-0.2	-0.1	-0.3	0.4	-1.2	0.3	-1.6	-1.3	-2.4	-5.0	-1.1	0.7	-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	0.1	0.5	-2.1	-2.4	0.7	1.3	-0.5
Jan-23	0.1	0.2	0.6	-1.1	0.7	0.8	0.3	0.3	-0.3	-1.6	1.8	0.7	-0.3
Feb-23	0.1	0.1	0.8	-1.6	0.7	1.0	-0.1	0.1	0.6	-4.5	1.1	0.9	0.0
Mar-23	0.1	0.2	0.5	-0.7	0.4	1.2	-0.4	-0.2	-0.6	-3.8	0.4	0.5	0.1
Apr-23	0.2	0.2	0.3	-0.2	0.4	0.6	-0.4	0.0	-1.6	-1.3	-0.7	1.5	0.2
May-23	0.4	0.4	0.5	0.4	0.2	0.9	-0.2	0.0	-1.5	0.2	-0.1	1.0	0.2
Jun-23	0.3	0.3	0.7	0.2	-0.2	0.8	-0.1	0.1	-1.2	0.0	0.3	0.8	0.2

**Percentage change, month on same month in previous year**

Mar-22	8.5	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	5.2	6.6	3.7	8.9	8.1	10.0	-2.0	-3.9	-6.7	19.4	6.0	3.1	6.7
May-22	4.7	6.1	4.7	7.3	2.3	11.9	-3.4	-4.0	-12.0	15.2	3.2	6.4	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	2.4	3.4	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	1.7	1.4	1.5	-4.5	8.7	-4.0	-5.1	1.6	-9.7	2.6	6.8	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	0.8	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	0.4	0.8	2.1	-1.7	0.5	3.5	-3.2	-2.8	-3.0	-11.6	-0.2	3.3	0.7
Feb-23	0.5	0.8	1.3	-0.7	-0.2	1.9	-3.1	-2.3	-5.4	-8.9	-1.3	5.7	0.1
Mar-23	0.5	0.9	1.6	-0.8	1.0	2.7	-2.9	-2.5	-2.8	-9.3	-1.2	3.7	-0.2
Apr-23	0.7	1.1	1.7	0.4	-0.3	3.2	-2.5	-1.7	-4.3	-7.6	-2.1	3.8	-0.1
May-23	0.0	0.3	0.9	-1.1	-0.4	2.4	-2.6	-2.0	-5.7	-8.1	0.7	1.5	-0.3
Jun-23	0.9	1.1	1.8	-0.2	-0.2	3.4	-1.6	-0.6	-5.5	-5.6	-0.7	4.2	-0.3

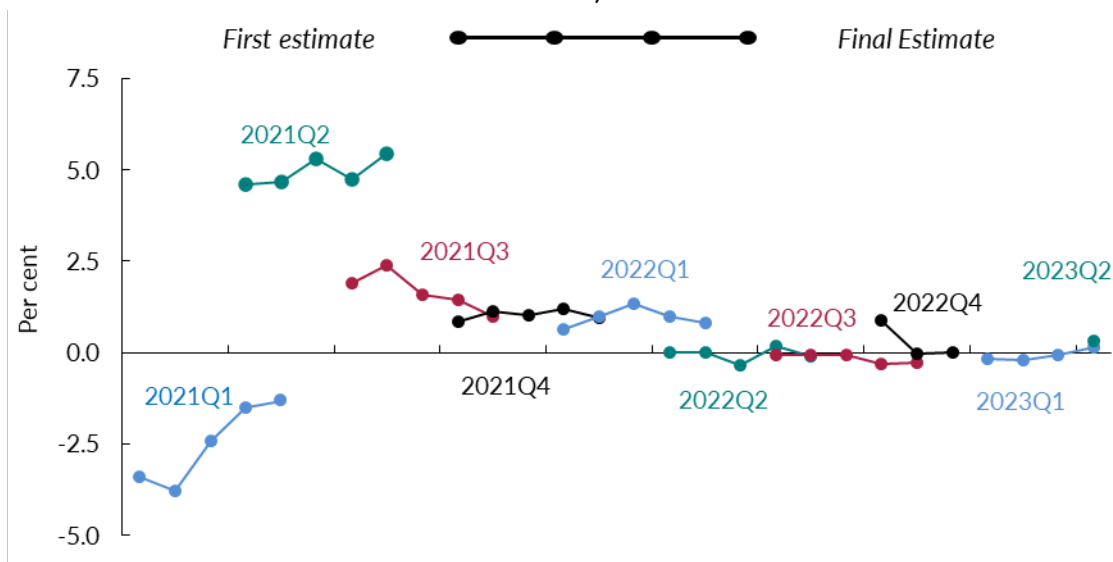
**Percentage change, month on previous month**

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	-0.5	-0.7	1.3	-2.9	1.3	-0.1	0.0
May-22	0.8	0.9	1.1	1.5	0.0	1.0	0.1	0.4	0.5	0.7	-2.7	2.3	0.2
Jun-22	-0.8	-0.6	-0.7	-0.8	-0.2	-0.6	-1.0	-1.3	-0.9	-2.6	1.6	-2.6	0.1
Jul-22	0.4	0.5	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	0.1	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	0.4	1.2	-3.0	-0.2	-1.2	0.7	0.1
Nov-22	0.1	0.3	0.2	-0.4	0.2	1.6	0.0	-0.6	0.0	2.7	2.0	0.2	-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	0.4	0.7	0.2	1.2	0.2	1.6	-0.5	0.0	-1.9	-3.2	-0.1	-1.7	0.1
Feb-23	0.0	-0.1	-0.3	-0.3	0.3	-0.5	-0.2	0.0	-2.2	3.0	-1.3	2.4	0.1
Mar-23	0.1	0.1	0.4	0.1	0.1	0.3	0.1	-0.1	1.2	0.0	0.6	0.0	0.1
Apr-23	0.2	0.2	0.3	0.2	-0.3	0.6	0.0	0.0	-0.3	-1.1	0.3	0.0	0.1
May-23	0.1	0.1	0.3	-0.1	-0.1	0.1	0.0	0.1	-0.9	0.2	0.1	0.0	0.1
Jun-23	0.1	0.2	0.3	0.0	-0.1	0.4	0.0	0.1	-0.7	0.0	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 February, compared with the previous three months, against the forecast for each in our March GDP Tracker.

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

	GDP	Index of Services	Index of Production	Manufacturing	Mining and Quarrying	Index of Construction
Forecast	-0.1	0.0	0.2	-0.4	-3.3	-1.2
Outturn	0.1	0.1	-0.1	0.1	-4.5	0.9

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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