

NIESR

Monthly GDP Tracker

Little Relief Expected for Households with GDP Set to Contract by 0.2% in Q1 2023

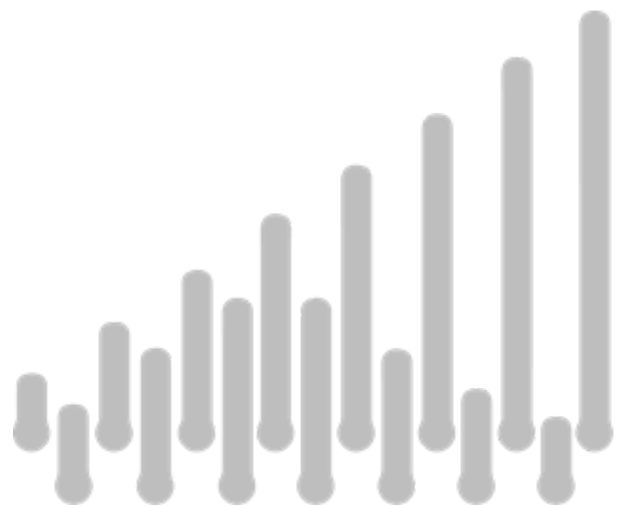
Paula Bejarano Carbo and Joanna Nowinska

10th February 2023

“Today’s ONS figures suggest that monthly GDP fell by 0.5 per cent in December, driven by a 0.8 per cent fall in services which saw significant decreases in human health and social work activities resulting from strikes and a drop-off in vaccination activity. Interestingly, monthly output in consumer-facing services fell by 1.2 per cent in December following growth of 0.4 per cent in November; the ONS associates this surprise with the gains to food and beverage activity from the FIFA World Cup being overtaken by a 17 per cent loss in sports activities, and amusement and recreation activities due to the break in the Premier League. The monthly data suggest that GDP was flat in the fourth quarter of 2022. While this means that the UK avoided a technical recession in 2022 – that is, two consecutive quarters of contracting growth – it is important to remember that it will have felt like a recession for most households as the cost-of-living crisis eroded living standards in the UK.”

Paula Bejarano Carbo

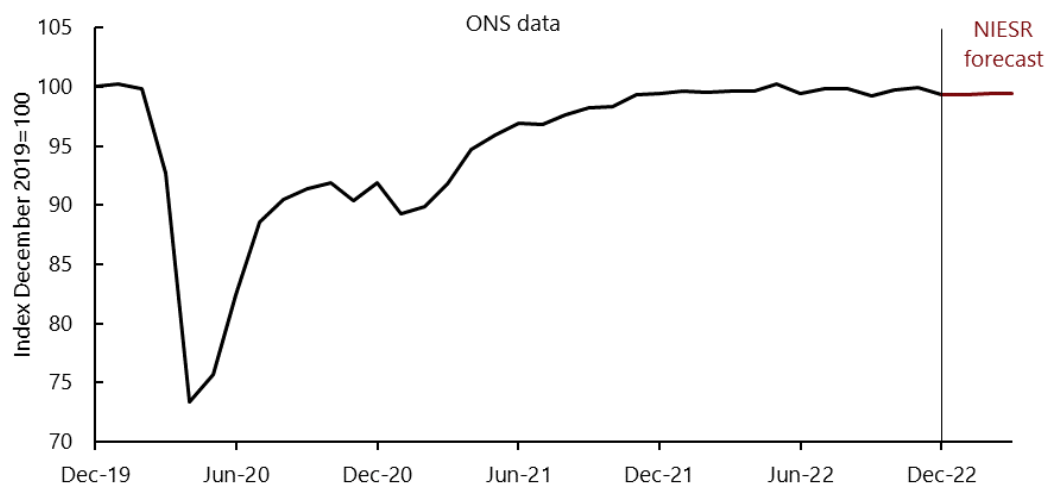
Associate Economist, NIESR



Main points

- Monthly GDP fell by 0.5 per cent in December, following an unrevised rise of 0.1 per cent in November. The end-of-year fall in the monthly figure was driven by a decrease in services resulting primarily from strikes, decreasing vaccination activity, the Premier League break, and cost-cutting from clients facing squeezed budgets.
- GDP remained flat in the fourth quarter of 2022, bringing annual growth to 4.1 per cent. The latest data thus suggest that the United Kingdom narrowly avoided a technical recession in 2022. However, this will be little consolation to most households, which have seen significant hits to their real incomes over the course of the last year.
- Concerningly, the S&P Global/CIPS UK PMIs for January recorded figures below the neutral 50 (indicating contracting output) for the services, manufacturing and construction sectors for a consecutive month. That said, businesses optimism rose in all three sectors as a softening in the rate of energy inflation and ‘tentative’ signs of a turnaround in sales prospects emerged in the new year, possibly signalling that the ongoing terms of trade shock will be both temporary and short in duration.
- A key takeaway from the S&P Global/CIPS UK Services PMI is that businesses are reporting price rises that are higher than input costs (e.g. energy bills and wages) – the latest sign that persistent inflation may be embedding itself in the UK economy.
- We forecast GDP growth of -0.2 per cent in the first quarter of 2023. For a comprehensive outlook of the entire UK economy in 2023, our Winter Economic Outlook – published 8 February – can be found [here](#).

Figure 1 - UK GDP



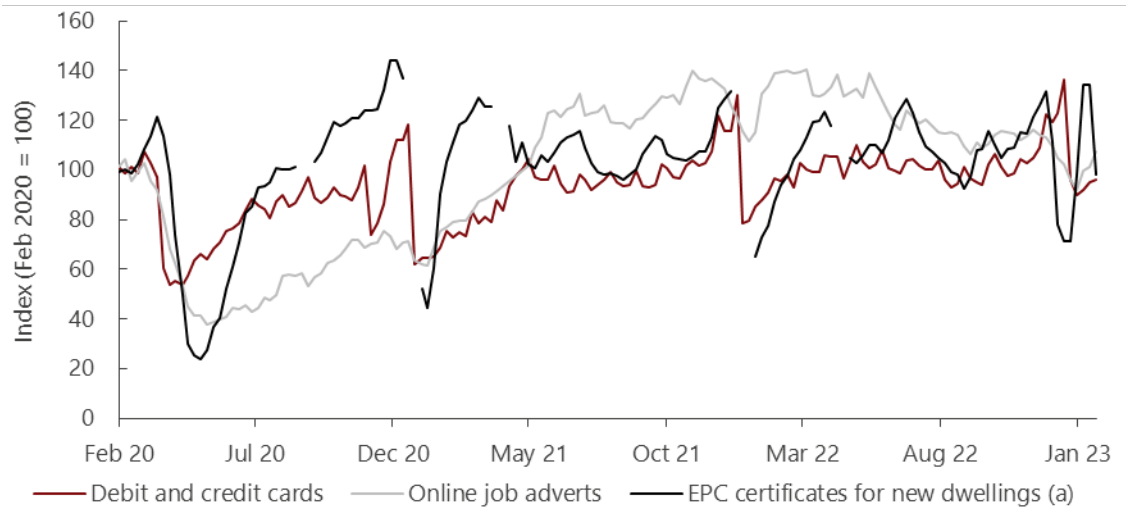
Economic setting

In our [previous GDP tracker](#), published 13 January, we noted that the services sector drove a positive surprise in monthly growth in November – possibly indicating that households had not tightened their belts by as much as expected in Q4 despite the widespread fall in real incomes and the gloomy economic outlook. This led us to estimate GDP growth of 0.1 per cent in the fourth quarter of 2022, expecting the seasonal consumption boom to drive growth relative to the sluggish third quarter which saw a contraction in GDP of 0.3 per cent. However, we stressed that further declines in key sectors, especially manufacturing, will likely weigh on GDP growth in the first quarter of 2023.

Today's data indicate that negative surprises in the services sector caused a monthly fall in GDP of 0.5 per cent in December, while GDP remained flat in the fourth quarter of 2022 relative to the third quarter. Given these estimates, it appears that the United Kingdom avoided falling into a recession in 2022. While that is not an unimportant indicator, a focus on the economic crisis faced by most of the British population offers a more insightful metric for understanding the economic outlook given that it will feel like a recession for many, regardless of the data outturn. Our [Winter Economic Outlook](#), published 8 February, expects that the United Kingdom will likely avoid a technical recession in 2023 and forecasts annual GDP growth of 0.2 per cent; at the same time, we forecast that one in four households will face energy and food bills that exceed their disposable income in 2023-24, up from around one in five in 2022-23. Such dismal prospects for households within a relatively optimistic forecast motivate the need for the Chancellor to offer further targeted support in his Spring Budget to prevent more households from falling into destitution (a classification under which around 1.2 million UK households currently fall).

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 increased spending in the run-up to Christmas has since plummeted to below pre-pandemic levels, consistent with our view that any boom to consumption in the fourth quarter of 2022 would dissipate quickly. Figure 3 illustrates a sustained deterioration in the UK economy's key sectors over the course of the last year. Taken together, these two figures stress that downward risks to GDP in the first quarter of 2023 emerge from both the demand and supply sides.

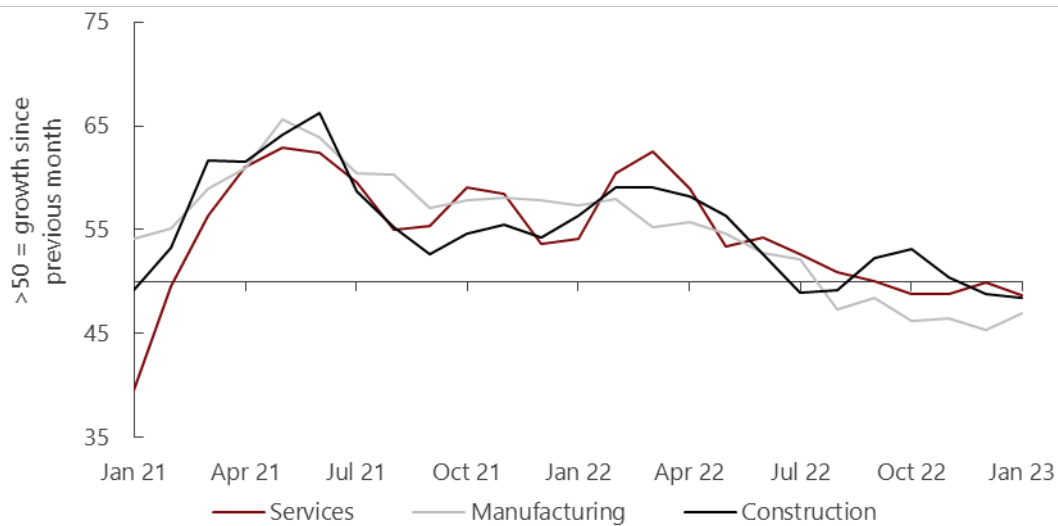
Figure 2 – Spending and hiring indicators (weekly indices)



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 December were worse than our January estimate, contracting by 0.5 per cent rather than by 0.1 per cent. GDP remained flat in the fourth quarter of 2022, marginally worse than our previous forecast of 0.1 per cent growth.

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

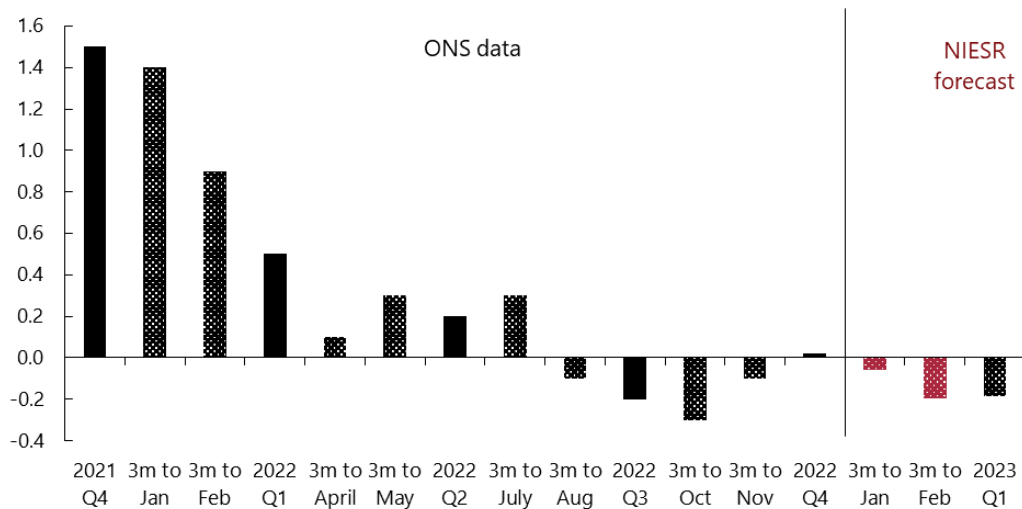
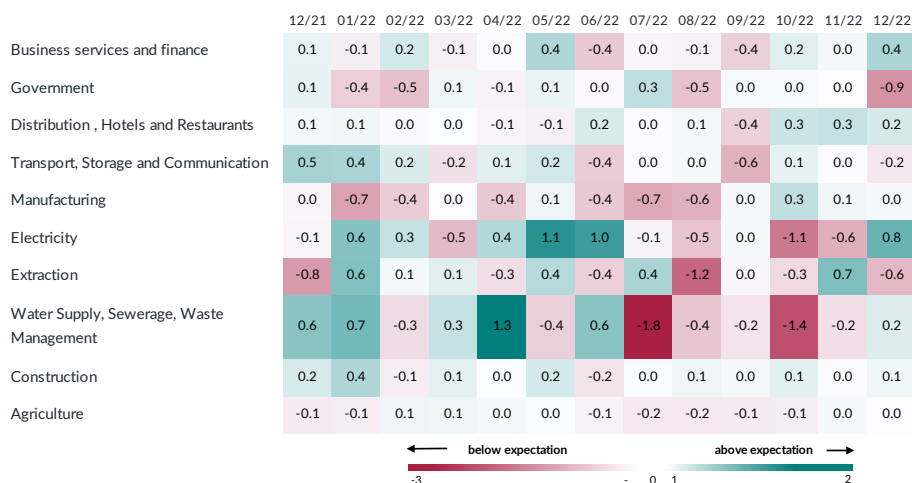


Figure 5 shows a heat map of the data surprises across sectors in the monthly data, relative to last month’s GDP Tracker, highlighting the sectors where the surprises are large relative to the volatility of the output data. This month, there was a large negative surprise in the government sector, due to reduced output in healthcare services.

Figure 5 – Surprises in monthly data



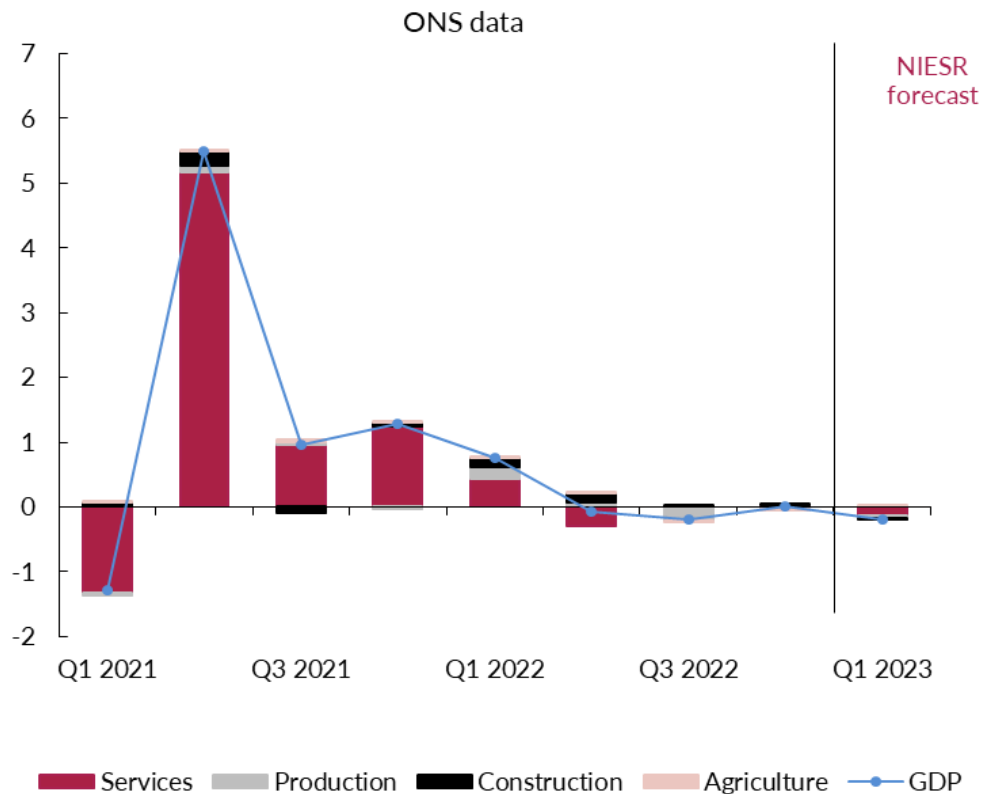
Note: Cells show forecast errors as a fraction of the standard deviation of errors for each series. Green cells are greater than expected, red cells are less than expected.

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

Sectoral detail

GDP remained flat in the fourth quarter of 2022. Our forecast for GDP growth in the first quarter in 2023 is for a contraction of 0.2 per cent.

Figure 6 - Contributions to quarterly GDP growth (percentage points)



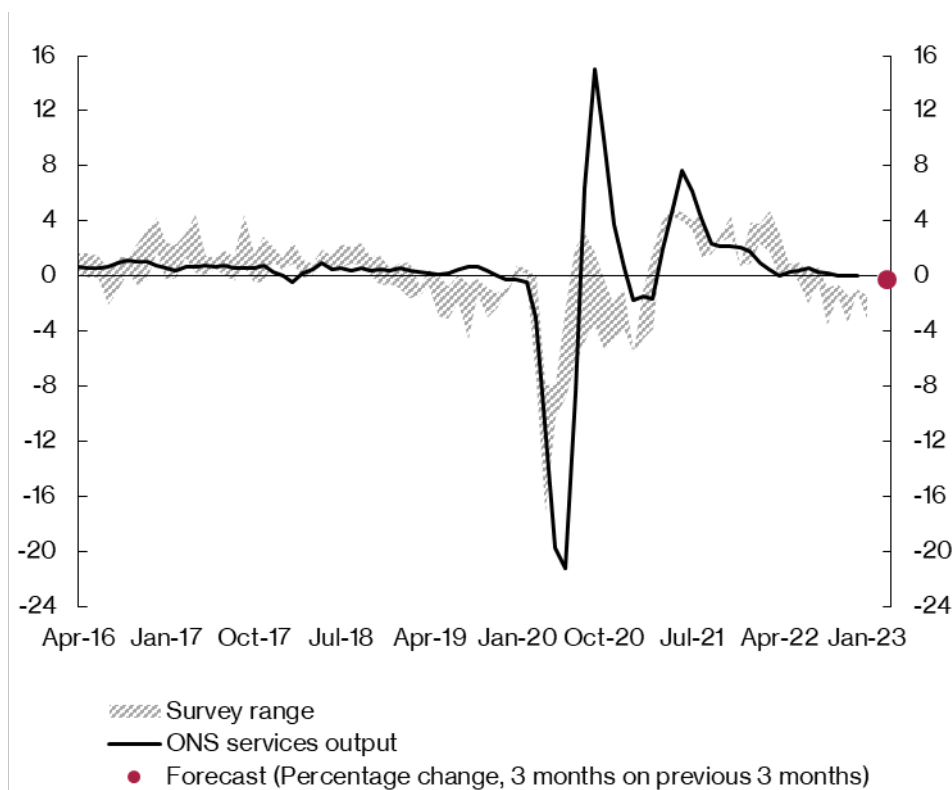
Services (80 per cent of GDP)

The survey balances point to the fifth consecutive month of contracting 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 registered a headline business activity balance of 48.7 in January, down from 49.9 in December, representing the weakest service sector performance since January 2021, when the United Kingdom remained in a national lockdown. Despite contracting business activity in this sector, a softening in input costs (primarily lower fuel bills) has improved the outlook for 2023, causing an uptick in business optimism in this sector. A key takeaway from this survey is that businesses are reporting price rises that are higher than input costs – the latest sign that persistent inflation pressures may be embedding themselves in the economy.

Internationally, the JPMorgan Global Services Business Activity index rose to a welcome 50.1 per cent in January from 48.1 per cent in December. The JPMorgan Global Composite Output Index increased to 49.8 in January from 48.2 in December. Overall, these figures indicate a moderation in the global economic downturn in services.

Based on recent developments we expect UK service sector activity to contract by 0.2 per cent in first quarter of 2023 relative to the previous quarter.

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 forecast that production sector output will contract by 0.2 per cent in the first 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 bounced up to 47.0, from the concerning 31-month low of 45.3 in December. Still, this marks the sixth consecutive month this sector has contracted (as noted by recording figures below the neutral 50), driven by a continuing combination of weakened domestic and export demand, eroding consumer confidence and Brexit-related trade difficulties. Despite this, survey respondents recorded the highest level of business optimism since April 2022, with 57 per cent of manufacturers expecting output to be higher one year from now.

The S&P Global/CIPS UK Composite PMI – which combines comparable services and manufacturing indices – saw a fall to 48.5 in January from 49.0 in December, remaining below the neutral 50 for a sixth consecutive month and indicating reduced overall private sector output.

The JPMorgan Global Manufacturing Output PMI rose to 49.1 in January from the 30-month low of 48.6 in December. This survey also recorded an uptick in the rate of output charge inflation.

Our forecast for the first quarter of 2023 sees a contraction of 0.5 per cent in this sector.

Mining and quarrying

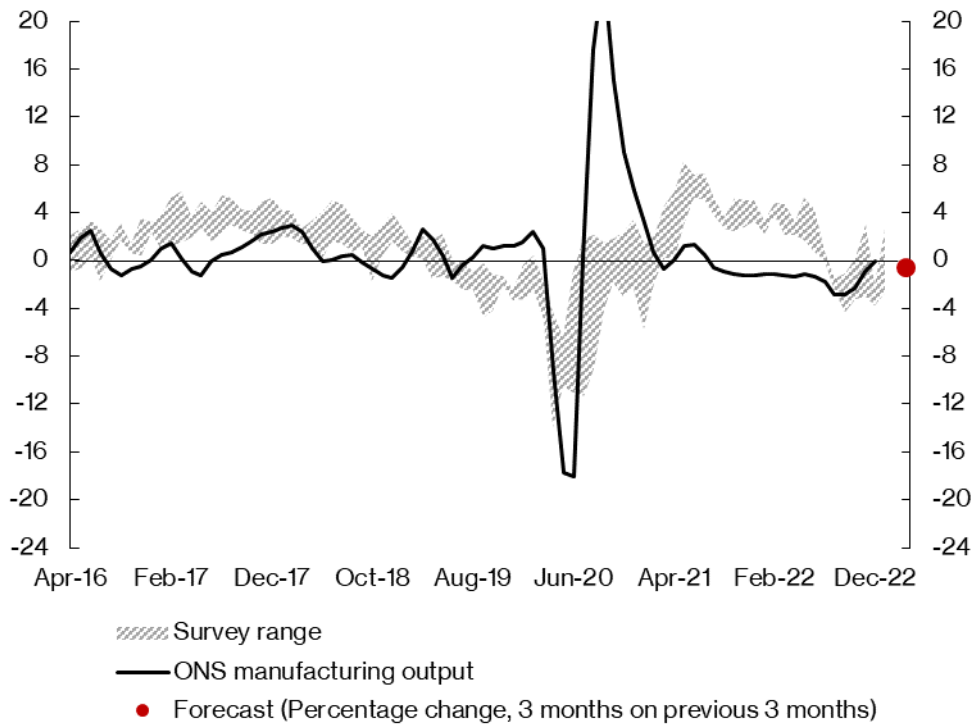
Mining and quarrying (extraction) is a small but erratic component of industrial production that can have an influence on overall GDP growth. We forecast a contraction of 1.3 per cent in this sector in the first quarter of 2023.

Construction (6 per cent of GDP)

The S&P Global/CIPS UK Construction PMI survey registered a decrease to 48.4 in January from 48.8 in December, driven by contractions in housebuilding that can be explained by rising borrowing costs and subdued confidence. However, improved business optimism in this sector can be explained by companies expecting confidence to stabilise once customers adjust to a permanently higher level of borrowing costs than those seen in the post-Financial Crisis era.

Our forecast for the first quarter of 2023 sees a contraction of 0.2 per cent in this sector.

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)

Health warning

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
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	103.7	95.8	87.7	101.5	107.4	107.6	112.1	89.4	116.3	101.5	104.7
Feb-22	99.9	98.5	104.0	94.6	88.4	102.5	107.0	107.0	112.2	89.2	116.2	101.3	105.4
Mar-22	100.0	98.5	104.2	95.2	87.5	102.2	106.9	107.0	110.4	89.8	116.4	103.1	105.7
Apr-22	100.0	98.6	104.4	93.8	88.5	102.5	106.3	106.2	111.8	87.3	117.8	103.0	105.9
May-22	100.7	99.4	105.5	95.2	88.3	103.4	106.3	106.4	112.1	88.1	114.7	104.7	106.1
Jun-22	99.8	98.7	104.6	94.4	88.5	102.6	104.9	104.6	111.4	85.9	116.2	102.6	106.1
Jul-22	100.2	99.2	105.0	94.9	88.7	103.7	104.2	103.6	110.7	90.6	113.1	103.7	106.3
Aug-22	100.2	99.5	105.1	95.0	88.0	105.1	102.6	102.3	110.0	83.0	113.6	103.9	106.1
Sep-22	99.6	98.7	104.7	95.0	86.7	102.6	102.5	102.1	109.6	84.3	114.1	103.7	105.5
Oct-22	100.1	99.3	105.1	95.6	87.9	102.7	102.7	103.0	106.4	84.0	112.6	104.4	105.5
Nov-22	100.3	99.5	105.3	95.5	87.9	103.2	102.8	102.4	107.1	86.9	114.9	103.9	105.4
Dec-22	99.7	98.7	105.7	93.3	88.0	102.5	103.1	102.4	112.7	82.9	115.7	103.9	105.3
Jan-23	99.8	98.9	106.0	93.4	87.7	103.0	102.6	102.1	110.3	82.9	115.4	103.9	105.3
Feb-23	99.8	99.0	106.3	93.2	87.5	103.4	102.6	101.8	110.4	84.1	115.6	103.9	105.4
Mar-23	99.9	99.0	106.7	92.7	87.4	103.5	102.8	102.2	110.5	83.7	115.9	103.9	105.6

Percentage change, 3 months on previous 3 months

Dec-21	1.5	2.1	1.7	4.4	-1.9	3.6	-1.3	-1.2	-3.5	-3.4	2.0	1.4	0.2
Jan-22	1.4	1.8	1.6	3.5	-3.0	4.2	-0.8	-1.2	-2.9	-6.4	2.2	2.8	-0.2
Feb-22	0.9	1.0	0.8	1.4	-2.5	4.3	-0.3	-1.2	4.3	-2.7	2.0	2.8	0.2
Mar-22	0.5	0.5	0.5	-0.8	-0.2	3.8	-0.3	-1.3	4.1	1.9	0.9	3.0	0.6
Apr-22	0.1	0.1	0.3	-2.0	0.8	2.7	-0.7	-1.4	1.1	1.4	1.0	2.1	1.0
May-22	0.3	0.3	0.7	-1.3	0.9	1.6	-0.7	-1.1	0.1	0.4	0.2	2.6	0.9
Jun-22	0.2	0.4	0.8	-0.8	0.6	0.8	-1.2	-1.4	0.2	-2.6	-0.1	1.5	0.7
Jul-22	0.3	0.6	0.8	0.3	0.4	0.8	-1.5	-1.7	-0.1	-0.6	-1.8	1.2	0.5
Aug-22	-0.1	0.3	0.2	0.0	0.3	1.1	-2.4	-2.8	-0.7	-2.1	-1.7	-0.2	0.3
Sep-22	-0.2	0.2	0.1	0.5	-0.7	0.9	-2.6	-2.9	-1.5	-1.3	-2.3	0.3	0.0
Oct-22	-0.3	0.1	-0.1	0.4	-1.1	0.2	-2.4	-2.3	-2.5	-5.0	-1.1	0.3	-0.4
Nov-22	-0.1	0.0	0.1	0.6	-1.0	-0.9	-1.2	-1.0	-2.7	-1.7	-0.4	0.5	-0.6
Dec-22	0.0	0.0	0.4	-0.2	0.2	-1.0	-0.2	-0.1	-1.2	-1.6	0.7	0.3	-0.6
Jan-23	-0.1	-0.1	0.7	-1.2	0.4	-0.5	0.2	-0.2	1.2	0.5	1.7	-0.1	-0.4
Feb-23	-0.2	-0.3	0.9	-2.2	0.3	0.1	0.1	-0.4	3.2	-2.1	1.5	-0.1	-0.1
Mar-23	-0.2	-0.2	0.9	-1.8	-0.5	0.5	-0.2	-0.5	1.5	-1.3	1.1	-0.2	0.1

Percentage change, month on same month in previous year

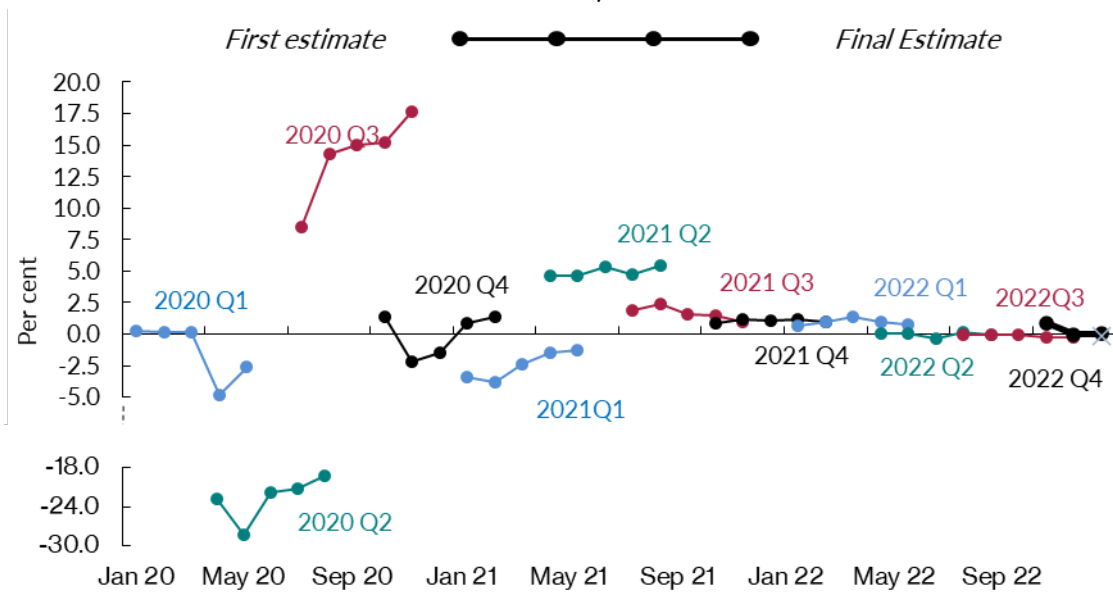
Dec-21	8.2	10.4	4.4	19.0	14.7	10.9	-2.4	-2.3	-3.4	-11.6	4.5	6.9	7.7
Jan-22	11.6	14.5	5.1	26.1	29.2	12.9	-1.0	-0.8	-4.5	-4.9	5.4	10.1	7.6
Feb-22	10.8	13.9	4.6	25.0	25.9	15.2	-1.7	-2.2	-5.5	2.3	4.0	5.8	7.1
Mar-22	8.4	11.0	3.1	19.3	21.0	13.4	-2.6	-3.3	-5.2	1.2	3.7	4.5	6.1
Apr-22	5.1	6.7	3.9	8.8	8.3	10.0	-2.3	-4.2	-6.8	18.6	6.0	3.0	6.7
May-22	4.5	6.1	4.9	7.2	2.3	11.8	-3.7	-4.5	-12.3	14.7	3.2	5.6	5.5
Jun-22	2.6	3.6	3.1	4.1	-0.2	9.7	-3.4	-5.5	-7.5	24.9	2.2	4.3	3.6
Jul-22	3.1	4.3	3.9	5.0	0.3	9.5	-4.2	-6.0	-3.5	10.6	-1.1	6.1	2.6
Aug-22	2.3	3.5	3.6	3.4	-2.5	10.3	-6.2	-7.1	-0.3	-14.5	0.4	6.8	1.1
Sep-22	1.0	1.9	1.8	1.6	-4.1	8.3	-5.4	-6.8	1.2	-10.0	2.5	6.0	0.8
Oct-22	1.4	2.1	2.4	1.4	-1.9	5.7	-4.2	-5.3	3.4	-6.7	-2.1	7.0	0.7
Nov-22	0.6	1.1	1.4	-0.7	-0.9	4.7	-4.4	-5.6	-1.7	-0.9	-0.1	4.6	0.8
Dec-22	-0.1	0.3	1.5	-4.3	2.6	3.4	-4.1	-5.6	2.7	-3.2	0.0	3.7	0.6
Jan-23	-0.2	0.3	2.2	-2.5	0.0	1.5	-4.5	-5.1	-1.6	-7.3	-0.8	2.3	0.5
Feb-23	-0.1	0.5	2.2	-1.5	-1.0	0.9	-4.1	-4.8	-1.6	-5.7	-0.5	2.6	0.1
Mar-23	-0.1	0.5	2.4	-2.6	-0.2	1.3	-3.8	-4.5	0.1	-6.8	-0.5	0.8	-0.1

Percentage change, month on previous month

Dec-21	0.1	0.0	0.3	1.4	-3.3	0.5	0.0	0.0	0.7	-2.4	0.6	0.9	0.1
Jan-22	0.2	0.2	-0.4	-1.7	2.2	2.4	-0.1	-0.8	2.2	4.4	0.5	1.3	0.1
Feb-22	-0.1	-0.1	0.3	-1.3	0.8	1.0	-0.4	-0.6	0.1	-0.2	-0.1	-0.2	0.6
Mar-22	0.0	0.0	0.2	0.6	-1.0	-0.3	-0.1	0.0	-1.6	0.7	0.2	1.8	0.3
Apr-22	0.0	0.1	0.2	-1.5	1.1	0.3	-0.6	-0.7	1.3	-2.8	1.2	-0.1	0.2
May-22	0.7	0.8	1.1	1.5	-0.2	0.9	0.0	0.2	0.3	0.9	-2.6	1.7	0.2
Jun-22	-0.8	-0.7	-0.9	-0.8	0.2	-0.8	-1.3	-1.7	-0.6	-2.5	1.3	-2.0	0.0
Jul-22	0.4	0.5	0.4	0.5	0.2	1.1	-0.7	-1.0	-0.6	5.5	-2.7	1.0	0.3
Aug-22	0.0	0.3	0.1	0.1	-0.8	1.4	-1.5	-1.3	-0.6	-8.4	0.4	0.3	-0.3
Sep-22	-0.7	-0.8	-0.4	0.0	-1.5	-2.4	-0.1	-0.2	-0.4	1.6	0.4	-0.3	-0.5
Oct-22	0.5	0.6	0.4	0.6	1.4	0.1	0.2	0.9	-2.9	-0.4	-1.3	0.7	0.0
Nov-22	0.1	0.2	0.2	-0.1	0.0	0.5	0.1	-0.6	0.7	3.5	2.0	-0.5	-0.2
Dec-22	-0.5	-0.8	0.4	-2.3	0.1	-0.7	0.3	0.0	5.2	-4.6	0.7	0.0	-0.1
Jan-23	0.1	0.2	0.3	0.1	-0.3	0.5	-0.5	-0.3	-2.2	0.0	-0.3	0.0	0.0
Feb-23	0.1	0.1	0.3	-0.3	-0.2	0.3	0.0	-0.3	0.2	1.5	0.2	0.0	0.1
Mar-23	0.0	0.0	0.3	-0.5	-0.2	0.2	0.3	0.4	0.0	-0.5	0.2	0.0	0.2

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 November, compared with the previous three months, against the forecast for each in our December GDP Tracker.

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

	GDP	Index of Services	Index of Production	Manufacturing	Mining and Quarrying	Index of Construction
Forecast	0.1	0.2	-0.7	-0.3	-0.8	0.2
Outturn	0.0	0.0	-0.2	-0.1	-1.6	0.3

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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