

## Box B: How likely are we to see a major recession in 2022?

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### Introduction

Until relatively recently it seemed unlikely that the UK economy would fall into another recession – by which we mean in this case a year-on-year fall in GDP – as the country continued its post-Covid recovery.<sup>2</sup> Since our February 2022 forecast, however, a number of factors have conspired to cast clouds over the economic outlook. In addition to the inflation surge, resulting from rising energy costs and supply constraints in the wake of the pandemic, the economy now faces an additional uncertainty shock triggered by the Russian invasion of Ukraine.

A combination of war and energy price shocks is reminiscent of the problems which hit the UK economy in the 1970s and will clearly increase the strength of economic headwinds, particularly since the UK is already dealing with the risk to growth posed by Brexit. But whilst the risks to the outlook have risen, a recession is by no means inevitable. Here we look back at previous recessionary episodes to identify the factors which impacted on the economy and trace the linkages which brought about a contraction in output. We also look at the information content of the latest data releases to assess what they tell us about the prospect of recession in the context of qualitative choice models. For a more detailed and longer run perspective, NIESR's UK Business Cycle Dating Committee provides a fuller narrative and history of expansions and contractions. (see Chadha, Lennard and Thomas, 2022).

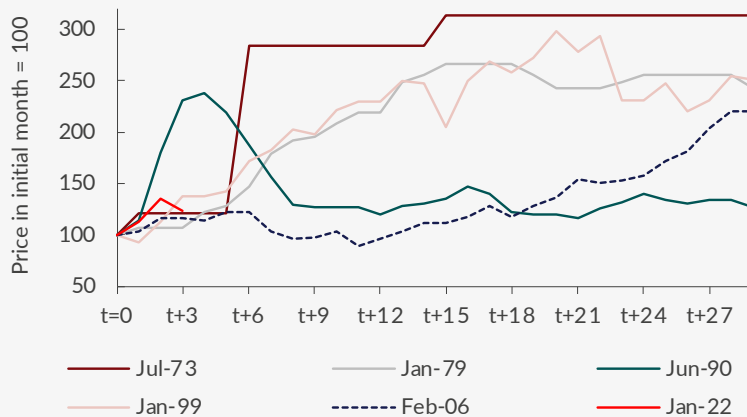
### Recessions past and present

It is particularly interesting to compare the current economic picture with that prevailing in 1973 when the UK experienced its first major post-World War II recession (apart from the one quarter of negative annual GDP growth experienced in the second quarter of 1958, see Blackaby, 1975). Then, as now, the economy was coming off a period of extremely rapid growth – compare the Barber boom with today's post-pandemic recovery. In both cases the economy was having to adjust to new institutional arrangements: in 1973 a breakdown in the Bretton Woods system and the transition to a new world of floating exchange rates, today the new post-Brexit environment with all the attendant consequences for trade flows. Both periods were also characterised by regional military conflict which had an impact on global energy prices. However, whereas the war in Ukraine produced a 20 per cent rise in crude oil prices in March 2022, the Yom Kippur conflict between Egypt and Israel in October 1973 generated a near-tripling, from \$3.56 in July 1973 to \$10.11 by early-1974 (Figure B1).

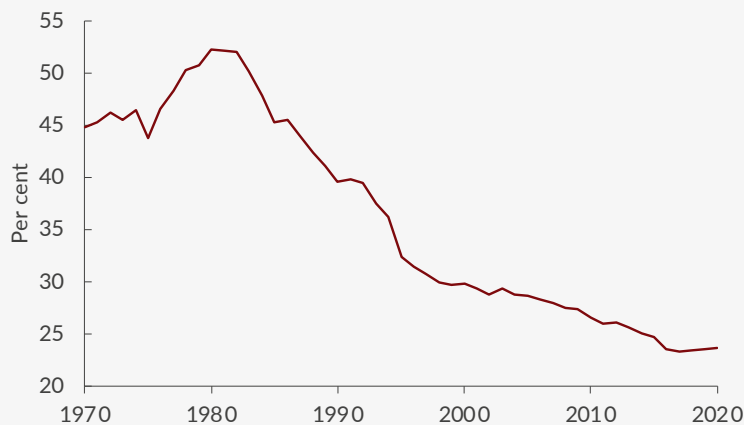
Tempting as it is to draw parallels between 1973 and today, there are also significant differences. First, the economy uses oil far more intensively today which will reduce the impact of any given oil price hike: each pound of GDP (measured in constant prices) today consumes only a quarter as much oil as in 1973. Recent empirical evidence (Kirby and Meaning, 2015 and Millard and Shakir, 2013) suggests that a sustained 10 per cent rise in oil prices will only shave between 0.1 per cent and 0.2 per cent from GDP. The starting point for inflation was also higher in 1973, with retail price index inflation already at 9 per cent before the oil price hike kicked in. The resultant inflation surge was amplified by a very different wage bargaining process in which unions played a key role. In the two years prior to the 1973 oil shock, real average earnings increased by 7.5 per cent whereas they have risen by only 2.7 per cent over the past two years. Whilst unions were instrumental in pushing nominal wage inflation into double digits by end-1974, their power has since been much diminished. In 1973 trade union density stood at 46 per cent; latest data suggest that by 2020 that figure had roughly halved to 23.7 per cent (Figure B2). The prospect of a 1970s-style wage-price spiral reinforced by rising costs and union power thus seem remote. Further, we now have an independent central bank setting monetary policy to achieve an inflation target. This has helped anchor inflation expectations, again making a wage-price spiral much less likely.

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<sup>2</sup> Note that the commonly ascribed definition of a recession, viz. two consecutive quarters of negative quarterly GDP growth is not necessarily helpful, and here we focus on a more serious downturn in the economy. Generally speaking a recession is a sustained fall or contraction in economic activity.

**Figure B1** Selected oil price shocks

Source: Federal Reserve Bank of St. Louis, Energy Information Administration

**Figure B2** The power of unions continues to decline

Source: OECD, ONS

### Spotting the turning point

Looking back over history is an interesting exercise but whilst it provides context it is often not useful in determining how economic patterns are likely to evolve in future. Forecasting turning points in the economic cycle is as much art as science and a considerable amount of research has been devoted to finding optimal indicators. Lenoël and Young (2020) conducted a survey to identify real-time turning point indicators published by international statistical and economic institutions. They found a considerable range of techniques in use across different organisations due in part to variations in the range of available data. Increasingly, the use of high frequency real time data gives an insight into how the economy is evolving and is a useful addition to the data armoury, although there is insufficient data to assess how well it might have performed ahead of past recession cycles. That said, as Chadha and Nolan (2002) show, the business cycle is a medium frequency innovation and thus we might expect that high frequency data may not have strong information content for business cycles.

Our analysis here focuses on the five major recessions since the 1970s. Evidence suggests that the UK's recent recessions were not foreseen a year in advance. Using data from HM Treasury's compendium of forecasters' expectations, which extends back to 1987, the median forecast made in September 1990, 2008 and 2019 failed to anticipate the declines in GDP that occurred in 1991, 2009 and 2020. There are sometimes good

reasons for that: the collapse of Lehman Brothers in 2008 and its attendant consequences for the global financial system was a random shock to which forecasters quickly adjusted. The same is true of the economic reaction to the pandemic when activity collapsed in spring 2020 due to Covid-19 and measures put in place to limit its spread. On other occasions, however, the failure to anticipate recession appears to be a more egregious forecast error – notably the recession of 1990-91.

Lenoël and Young assess some of the various indicators used to measure cyclical turning points, pointing out that until 1997 the ONS published a leading indicator for the UK which was assessed by Artis et al. (1995) as containing “important predictive information.” However, the statistical authorities ceased publishing them due to a number of methodological concerns, not the least of which was “an indicator that gave an early signal ahead of one recession may not work so well ahead of another recession if the nature of the recession is different”.

One of the methods that received less attention in the Lenoël and Young paper was the use of qualitative choice models in assessing cyclical turning points. This has found considerable traction in the literature which uses financial indicators to predict the cycle (Estrella and Mishkin, 1998). Such techniques are used to model outcomes where the dependent variable takes a binary value depending on the contingent state. In our case the dependent variable is the annual rate of real GDP growth which takes the value 1 when it falls into negative territory and 0 otherwise: in other words when quarterly GDP is less than it was in the quarter a year earlier.<sup>3</sup> In applying the analysis to the UK, the object of the exercise is to find indicators which have decent predictive power six months ahead. We chose as regressors the CBI’s business optimism index and the OECD leading indicator for the UK, which is in turn comprised of six variables (RPI, passenger car registrations, consumer confidence, 3-month LIBOR rate, manufacturing production expectations and an index of equity prices). To add an additional financial market indicator, we also include the slope of the gilt curve (specifically, two-year minus ten-year yields).<sup>4</sup>

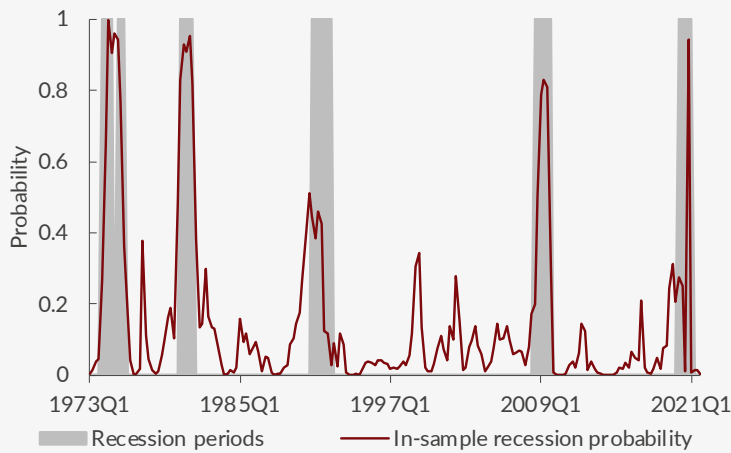
Based on data from 1972 we have 198 quarters of data and in 30 quarters annual GDP growth was negative. A simple probit model<sup>5</sup> was used to assess the predictive power of the three explanatory variables to give an assessment of recession probabilities six months ahead. The model diagnostics suggest that it fits the data very well, demonstrated by Figure B3, which indicates that it captures the likelihood that GDP growth is negative with a probability of at least 80 per cent (the one exception was the recession of 1990-91 when most forecasters also missed it). Plugging in the latest observations suggests that the probability that annual GDP growth will turn negative this year is negligibly small. This is not surprising given the momentum behind activity in recent months. Given the nowcast for quarterly GDP growth of 1.0 per cent in the first quarter of 2022 suggested by our April 2022 GDP tracker, output would have to decline by 2.3 per cent over the next two quarters for the annual growth rate to turn negative.

In contrast to conventional forecasting techniques, we do not attempt to quantify the rate of GDP growth. But the probabilistic approach outlined here gives a sense of the risks surrounding the outlook and how much the economy would have to slow in order to produce a year-on-year fall in GDP. Since the analysis is based on the information content in current data, it will be subject to change in future. However at the time of writing – and these may prove to be famous last words – the likelihood of a sustained fall or contraction in GDP (ie, a year-on-year fall) in 2022 appears remote. That said, there may well be a small contraction of GDP (and two consecutive quarters of negative quarterly growth) in the second half of 2022.

3 Again, we could define a recession as two consecutive quarters of negative quarter-on-quarter growth. In that case, our dependent variable would need to reflect the quarterly growth profile. However, the explanatory power of the indicators is very limited in this regard.

4 We consider this to be a first pass and so the results should be viewed as preliminary. In future work, we plan to add the Bank rate and oil prices (and possibly other variables) to the regression to see if these variables make a difference to the predictive power of the regression.

5 A probit model is a type of statistical model in which the dependent variable can only take two values; the probability of it taking one of those two values is regressed on the independent variables.

**Figure B3** Model estimate of UK recession probabilities

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