How do you model a crisis like the coronavirus?

The pandemic has torn up the rule book for economists struggling to predict the GDP hit and the hoped-for recovery

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Rick Cressman had expected to spend yesterday attending to guests at a wedding reception at his Nailcote Hall hotel in Warwickshire. The government's "stay at home" message meant that he was instead racing to save a business he has spent three decades nurturing.

With all but seven of his 75 full and part-time staff furloughed through the government's 80% salary scheme, Cressman, 68, hopes the wedding trade will provide a bedrock upon which to rebuild the hotel once the shutdown is lifted.

"We were expecting our turnover to go up from £2.85m to £3m during this new financial year, but from the beginning of April it's been zero," said Cressman, who three years ago was thinking of retiring but has now banished any such thoughts.

The remaining staff are helping to rebook weddings for couples whose plans have been put on ice, and to look after the grounds of the stately home built near Coventry just before the English Civil War. "For so many businesses, mine included, this is all about how long will this go on," said Cressman.

It is a question that resonates widely, and no more so than among the analysts attempting to assess the impact on the economy of the shutdown imposed by Boris Johnson on March 23.

Economists are ripping up forecasts made only three weeks ago when the declaration was made that Covid-19, first traced to a market in the Chinese city of Wuhan, had become a global pandemic.

More than one million cases have been reported around the world, and about 61,000 deaths. The health crisis is now an economic one, sparking turmoil in financial markets and creating a conundrum for economists, whose rough forecasts for a drop in second-quarter British gross domestic product are in a wide range showing big falls, possibly of even 30%. For comparison, Capital Economics notes that the fall in the whole of the 2008 financial crisis was 6% — and during the Great Depression it was 8%.

Carsten Brzeski, an economist at ING, describes what we are seeing as “a virus-driven ice age” and acknowledges that “it is more difficult than ever to come up with adequate economic forecasts”.

He said: “The best we can do is to describe several possible outcomes, based on different scenarios regarding the length of the lockdown and the spread of the virus.”

Watching scientists modelling Covid-19 cases and the mortality rate, economists look for clues to how long lockdowns could last and then calculate how long the economy will take to grow again.

Rob Wood, chief UK economist at Bank of America, likens the situation to taking the keys out of a car’s ignition: “We’ve turned the engine off for weeks, and sometimes if you leave a car for weeks it might not start smoothly when you turn it on again, especially if it’s sprung a fuel leak.”

Previous pandemics and recessions offer pointers, but economists say they are more accustomed to fathoming out gradual recessions caused by a collapse in demand rather than a deliberate shutdown that affects supply and demand. “It’s torn up the rule book and forced economists to revisit some of the ways we think about things,” said Neil Shearing, group chief economist at Capital Economics.

Economists now reminisce about the pre-virus days (less than a month ago). George Buckley of Nomura said: “In normal times, if we were 0.2 percentage points out in our forecast for growth, that would be considered a big error.” Decimal points no longer seem to matter. Nomura has updated its forecast to a contraction of 13.5% in UK GDP in the second quarter.

Buckley said the debate was moving on to the scale of the rebound. “We don’t think we’ll get back to a normal — in other words pre-virus — level of output for at least two to three years.”

David Owen of Jefferies has made reference GDP numbers monthly rather than quarterly, to give more precision, and studied many recessions to produce his forecasts. He already had a worst-case scenario of a 15% dive in GDP in the second quarter, but last week decided deeper cuts were needed to his “back-of-an-envelope calculations”. He now thinks GDP could fall by almost 25%.

Owen referenced ana–lysis by Simon Wren- Lewis, who was involved in work in 2009 that looked at the impact of an imaginary flu pandemic on the UK economy. Writing on a blog last month, the professor at Merton College, Oxford, attempted to answer the question about whether that work matched the current situation. One of his scenarios was a pandemic lasting three months, where schools were closed and consumers stayed away from shops by choice. He said his 30% hit to GDP during the three months of his pandemic “does not look obviously wrong and may well be an underestimate”, adding that the fall could “easily be 20% or 40%”.

However, his estimate of a 6% fall during the year in his study was “much too small”.

He said: “Where our study is less helpful is in thinking about what happens after the strict control period comes to an end because new cases come right down.” To predict the full-year impact, he said, “we need to know what controls are essential and what controls can be relaxed while maintaining an effective test/trace/isolate regime”.

Pushed, Wren-Lewis suggested that the economy could contract by 10%-15% in 2020, but much depends on how successful the government is in containing the virus — hence economists’ dilemma.

For instance, the Spanish flu at the end of the First World War came in three phases. Shearing said: “Economists tie themselves up in knots about this. Is the recovery going to be a V-shape, a U-shape, a W-shape or an L-shape? There is an alphabet soup of different shapes of recovery. But a key thing that we perhaps miss is that a lot will be dependent on how the virus itself evolves.”

The lack of traditional data is a headache. Analysts at Capital Economics — pencilling in a 15% second-quarter output fall but warning it could be bigger, with a range of 20%-25% — are using items such as cinema ticket sales (zero) and city-centre footfall.

“Nobody knows what’s going on, and I mean that literally. Economic data is likely to become increasingly unreliable as a result of the lockdown,” said Paul Donovan, chief economist at UBS Global Wealth Management, who has looked at what happened during the three-day week in the 1970s as well as in France in its traditional summer shutdown.

He pointed out that restaurants and bars make up 11% of the measure of inflation — but they are closed.

The Office for National Statistics, which uses surveys for some of its predictions, last week started to publish what will become a weekly release of data and experimental indicators, such as weekly online price indices for high-demand products, to gauge the impact of Covid-19.

Economists also “guesstimate” how successful the government will be in keeping unemployment down through schemes such furloughing and the £330bn of government-backed loans unveiled by Rishi Sunak, the chancellor. The 950,000 universal credit claims in a fortnight already worry them.

Wood at Bank of America said that without Sunak's fiscal boost, his forecast would be a fall bigger than 7%. "This is the size of the shock to compare against fiscal stimulus," he said. "That stimulus is closer to 6% of GDP. The stimulus is large, but the shock is much bigger." By the end of 2021 he expects GDP to still be 3% lower than he did before the virus.

How consumers behave after the crisis will influence forecasts for the extent and speed of the rebound. Here, economists will be looking to China for clues.

Some output will be permanently lost. Donovan said 15% of consumer spending will be delayed — "You don't buy a TV now, but you might when stores reopen" — but some 25% could be lost forever. "If I don't get a haircut now, I won't get two when the salon reopens."

For businesses, it all means uncertainty. In Warwickshire, Cressman is determined: "We are going to make sure we come back."