Office for National Statistics

Article

Coronavirus and the changing need for economic statistics and analysis

An overview of our response to the coronavirus pandemic, with a focus on economic statistics. Includes implications for our regular data collections, an explanation of the demand for new analysis, and the approach used. This is an economic review article.

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1 . Background

The coronavirus (COVID-19) pandemic has brought to the fore the public demand for statistics and analysis to monitor the evolving economic, health and social impacts; during the pandemic there has been a need for more in-depth analysis at a faster pace than ever before. The Office for National Statistics (ONS) has played a crucial role in this, recognising the importance of reliable economic statistics as a public good in helping inform policymakers and the public with a trustworthy and reliable evidence base.

Our analytical response has been underpinned by the developments that we have made in light of the recommendations in the Independent Review of UK Economic Statistics (PDF, 5.13MB) and in line with our corporate strategic plan. This reflects the challenges and opportunities in measuring the modern economy, which has led us to be more agile in the use of data, measurement techniques, and dissemination of statistics and analysis. Our response to the coronavirus pandemic is a prime example.

This article provides an overview of our response to the coronavirus pandemic, with a focus on economic statistics. It sets out the implications for our regular data collections, the methodological and conceptual challenges and the changes to our publications. It then explains the demands for new analysis and insights, and the approach to our response.

2 . Current challenges

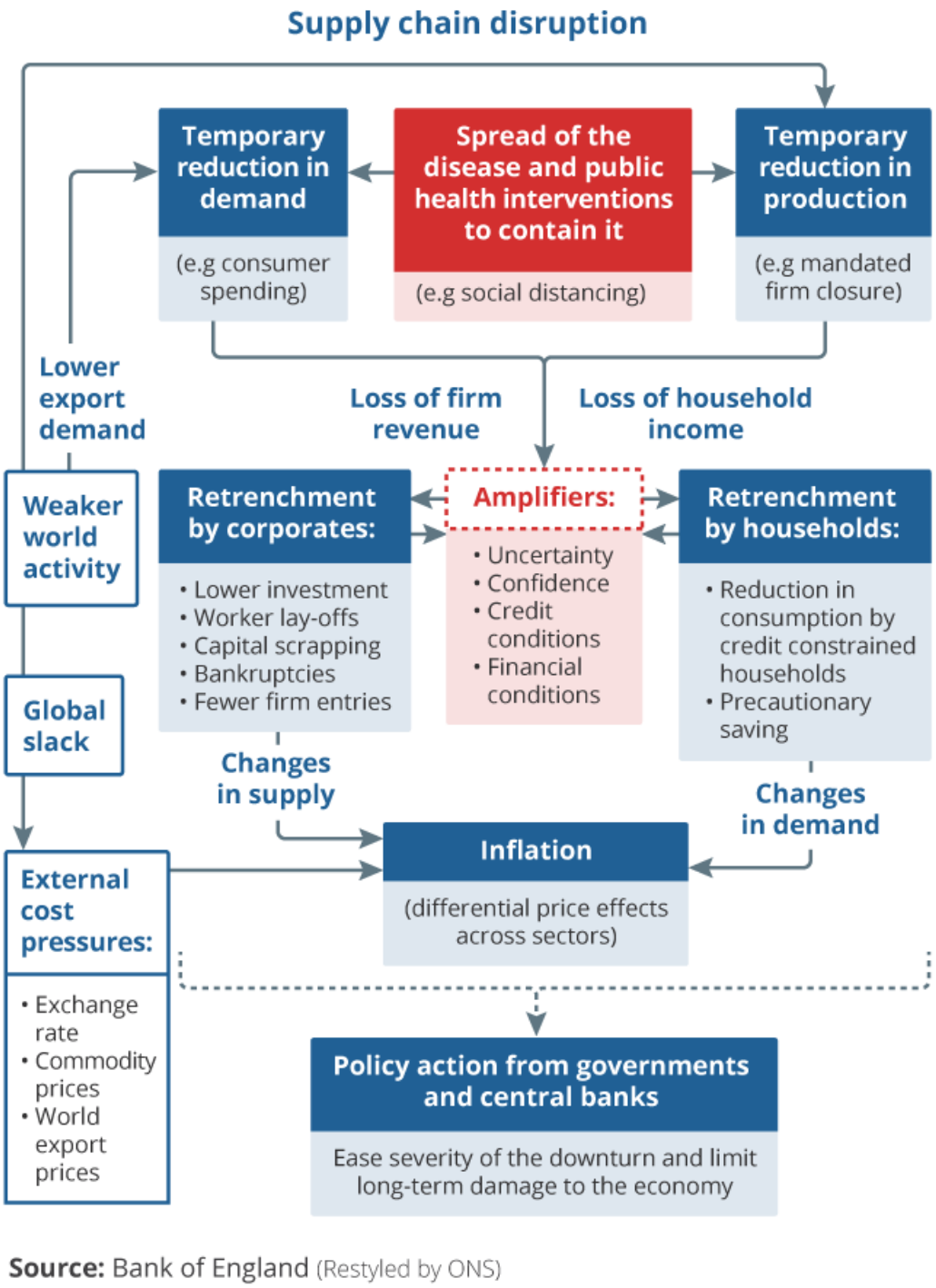
The coronavirus (COVID-19) pandemic has affected all parts of the economy and society. Figure 1 is replicated from the Bank of England Monetary Policy Report (PDF, 4.76MB), and shows the numerous channels through which the coronavirus pandemic will be felt in the UK economy. This demonstrates that there will be both lower levels of demand and supply. It also explains that there will likely be effects on:

- labour income
- corporate profitability
- consumer spending and saving
- capital investment
- business dynamism
- inflation and costs
- potential output and productivity

This framework helps underpin how we considered producing our analytical response at this time. There is a clear need for statistics and analysis on all parts of the economy, and our main outputs are the authoritative source of information on this. There will also likely be differential effects on different parts of the economy and groups of the population, necessitating distributional analyses.

Figure 1: The impact of the coronavirus pandemic upon demand and supply

A framework through which the coronavirus affects the UK economy



Source: Bank of England

The way in which we collect data and measure the economy has also been affected by the coronavirus pandemic.

Data and methods challenges

In early March, we suspended face-to-face interviewing for all of our household surveys, as well as in-store price collection, given the physical constraints on collectors being able to visit stores to record prices, and the unavailability of certain products. The inability to collect certain in-store prices has required the careful selection of the most robust methods in the production of our price statistics to ensure their continued accuracy.

This has clearly affected our ability to collect the data necessary to compile our statistics. For those surveys still going ahead, either by post, telephone or online, there have also been challenges. Temporary business closures and mass homeworking have meant that some businesses have been unable to respond to our postal business surveys. While we have been able to accelerate the transition of some surveys to online platforms, this has led to challenges in understanding the effect of any changes in mode, alongside the economic signals in the data.

Because of the uncertainty, some households and businesses have been understandably nervous about responding to our surveys, or unable to for other reasons. In some cases, this is likely to have reduced response rates, which has presented challenges for imputation. Typically, with late or lower responses, the ONS will take advantage of historical patterns to impute data. We have used innovative and sophisticated statistical techniques to mitigate the effects of lower response rates on our economic statistics. We are grateful to everyone who responds to Office for National Statistics (ONS) surveys, which provide crucial information to monitor the economy and society.

Other methodological challenges include in the initial estimation of gross domestic product (GDP), where we traditionally use single extrapolation, and assume that output and input move in line with one another. However, this is less likely to hold when the economy is being affected in so many ways, as illustrated in Figure 1.

Conceptual challenges

The proliferation of government schemes and interventions in response to the pandemic have been carefully reviewed and allocated in the UK National Accounts and Public Sector Finances, in line with international national accounting guidance. For instance, the treatment of furloughed employees in our estimates of gross domestic product and in the labour market.

In some cases, the coronavirus (COVID-19) pandemic has led to changes in the delivery of services which require careful consideration for their consistency with national accounting concepts. For example, the closure of schools across the UK as part of the policy response to the coronavirus pandemic is a challenge for producing direct volume estimates of education output. This is normally based on student numbers and attendance records, and has been severely disrupted of late. There are also conceptual issues, such as whether remote learning should be included within the GDP production boundary.

Capacity constraints

To protect the delivery and quality of our core statistics, as well as to ensure we can respond to demands for additional analysis relating to the coronavirus pandemic, we have suspended some of our publications. We announced changes to our labour market statistics in early April, and have delayed publication of GDP and other statistics by one or two days each month to allow additional time for quality assurance.

The challenges in particular areas of economic statistics, including gross domestic product (GDP), consumer price inflation, the labour market and the public sector finances, have been communicated through a range of statements and articles. More recently, we have set out our views on the effects on the Institutional Sector Accounts and the Balance of Payments, covering some of the likely non-financial and financial transactions to be affected.

3 . The values that informed our response

As well as ensuring our core economic statistics remain high quality and conceptually accurate, we have also developed a wide range of additional data and analysis to meet user needs. In particular, official statistics are generally produced with a lag because of the time necessary to collect, process and analyse robust data. However, in the time of crisis, such delays limit the value of the official estimates in informing decision making in the face of a rapidly evolving situation. As such, we have had to consider how to respond to this challenge.

In order to best serve our users during the pandemic, and provide them with the data they need, we have responded in a way consistent with our organisational strategic plan. This is best characterised by the principles that underpin the Office for National Statistics' (ONS') Better Statistics, Better Decisions strategy, namely that we are helpful, professional, innovative, efficient and capable.

Our principles have been integral in our ability to deliver an evidence base to help policymakers, and to be on the front foot in responding to the evidence needs of the nation. We have redeployed our resources to position ourselves to be a more effective service provider at this time, which has in part been delivered through improved working and collaborative capabilities and embedding colleagues in the centre of government. This has also reflected an increased focus on forming relationships with research partners and commercial data partners. This has allowed us to help provide the necessary analysis, through building more expertise and capacity for modelling alongside our statistical and analytical outputs. It will also be integral to our ability to identify future opportunities.

We have also considered how we can improve the public understanding of the effects of the coronavirus (COVID-19) so far, reviewing not only what we produce but also how those findings are communicated. We recognise the role of improvements in the communication of statistics in enhancing trust, so we have implemented changes to the website to highlight work of most relevance. This has also been reflected in a greater and improved presence in the media, where we have looked to produce easy-to-understand outputs, which collate the relevant evidence produced.

We have worked closely with the international community in understanding the challenges of compiling statistics and taking forward our work programme accordingly. We have kept stakeholders informed throughout this process, publishing numerous papers that explain how we expect these effects to feed through the statistical framework that underpin the recording of the UK macroeconomy. We have also produced timely pieces on communicating GDP and real-time indicators to provide wider context to our work.

We intend to respond in this proactive manner as and when new challenges arise, while expediting some of our planned transformation. This will help improve how we are able to convey our best intelligence of how the UK economy is responding to the coronavirus pandemic, and how the path of the recovery will unfold.

4 . New analysis to meet new needs

The coronavirus (COVID-19) pandemic has brought certain topics and subgroups of the population to the fore, requiring additional analysis and more granular information. These may not have been in high demand previously and so not published on a routine basis, but we responded quickly by providing the data needed by policymakers and the wider public. For instance, to better understand the UK labour market, we published breakdowns of employment by:

- prevalence of homeworking
- working parents
- older workers
- self-employment
- proximity to others in the workplace
- definition of key workers

We have also included additional analysis and commentary in our regular statistical bulletins, drawing on comments from survey respondents to better understand the reasons behind the movements in the headline figures. For instance, in the latest Retail sales, we included additional commentary from survey respondents and additional analysis of online sales, which have increased markedly during lockdown.

We have also produced a range of new indicators and analysis to complement our official estimates in providing more timely and relevant insight into the impacts of the coronavirus pandemic.

Developing real-time indicators

The demand for indicators that are closer to real time has been rising in recent years, as highlighted in the Independent Review of UK Economic Statistics (PDF, 5.13MB). This explains how the volume of public and private information that is now available to record movements in the economy, as well as the technological capacity for handling it, has significantly increased in recent years.

We have been producing a Faster Indicators publication since March 2019, with the aim of rapidly identifying shocks to the UK economy ahead of EU Exit. In light of the coronavirus pandemic, this was adapted at exceptionally short notice from a monthly to weekly publication, bringing together multiple data sources from across the Office for National Statistics (ONS), the wider Government Statistical Service, and external companies to disseminate a rapid but coherent message about the coronavirus' impact on the UK economy and society.

The following high-frequency indicators have been published during the pandemic, as well as others not listed:

- Pay As You Earn (PAYE): In conjunction with Her Majesty's Revenue and Customs (HMRC), we have jointly produced flash estimates of earnings and the number of employees from PAYE records. The PAYE data are relatively timely as they are available within three weeks of the end of the reference month. These experimental estimates capture the number of employees that are paid through company payrolls. These estimates provide a timelier insight into the impact of the pandemic on the UK labour market.

- Job vacancies: We now publish weekly estimates of online job adverts provided by Adzuna, which provide an indication of demand for labour in the UK labour market. The impacts on the labour market capture how the effects vary by industry, in line with how the exposure of industries to the effects of public health restrictions and social distancing are not uniform.

- Online prices: At the start of the pandemic, we quickly established an index of online prices of high-demand products, such as long-life food, medicinal products, and household essentials. These data are compiled using web scraping to provide a weekly indicator of the prices of certain important products.

- Universal Credit: In collaboration with the Department for Work and Pensions (DWP), we have published data visualisations of management information of the number of Universal Credit claims and advances, as published weekly by DWP. This provides a potential leading indicator of unemployment.

Undertaking business surveys

Research findings by the Economics Statistics Centre of Excellence identifies real-time turning point indicators that are published by international organisations, finding that "surveys asking business managers about their order books and production plans have proved very useful leading indicators". In the UK, we have not traditionally conducted such surveys. However, we have looked to become more agile in how we collect such real-time information.

The Business Impacts of Coronavirus (COVID-19) Survey (BICS) collects timely, relevant and high-frequency information to understand better the impact of the COVID-19 pandemic on the business community. It gauges information on a range of business and economic activities including the extent to which turnover, employment and prices have been affected by the coronavirus pandemic.

The survey is voluntary, is undertaken fortnightly and is flexible so that it can be adapted for new requests for information. This has allowed us to collect further information on topics of interest, such as the extent of furloughing in the UK labour market and the level of cash reserves, as well as forward-looking indicators such as the expectations of businesses to return to higher levels of capacity.

Producing higher-frequency labour market estimates

The Labour Force Survey (LFS) underpins our official UK labour market estimates, including any impacts on those who are classified as in employment, unemployment or in economic inactivity. It would also capture changes in the number of hours worked, reflecting any shifts in labour demand and supply. Previous analysis has highlighted how we would record the effects of furloughing in the labour market, specifically how furloughed workers will not reduce the number of people in employment but that it will lead to an increase in the number of employees working no hours and an overall reduction in the number of hours worked.

We have recognised that there is a demand for more timely and relevant insights to inform a richer understanding of the impacts of the coronavirus pandemic on the UK labour market. Therefore, we added additional questions and options to the LFS to specifically ask about the impact of the coronavirus from households through the LFS, specifically looking at whether labour market outcomes were linked to the coronavirus, such as working more or fewer hours than normal. We have also looked to produce higher-frequency estimates for the first time, which cover experimental labour market indicators that are broken down by individual weeks to help gauge the impact of lockdown on labour supply.

Understanding the effects on consumer prices

The coronavirus pandemic has led to a reduction in the demand for certain goods and services, but also the ability of businesses to supply those products. The extent to which the fall in demand that has been experienced so far leads to an increase in spare capacity will determine the extent to which the coronavirus pandemic will lead to inflationary or disinflationary pressures in the UK economy this year. Our range of consumer price statistics will help policymakers to analyse these supply and demand effects.

Recent analysis has highlighted how we expect "social distancing policies and movements restrictions to have a large impact on consumer expenditure", but that the expenditure weights that underpin headline estimates of consumer price inflation are lagged by two years. As such, these are not likely to be reflective of current expenditure and so the headline estimates of consumer price inflation will not necessarily reflect changes in consumption patterns that have taken place in response to the coronavirus pandemic.

We have responded by producing experimental estimates of the Consumer Prices Index including owner occupiers' housing costs (CPIH) in which we re-weight the basket so that unavailable items had zero relative importance. That is, those goods and services that are no longer available to consumers because the market for these products has effectively shut down are reflected in these alternative expenditure weights.

We are currently undergoing transformation across many areas of our inflation statistics, including exploring the potential for scanner data and web-scraped data. The coronavirus pandemic has led to heightened concerns of supply chain disruptions reflecting the imposition of widespread restrictions. One of the early behavioural responses to the coronavirus pandemic was the stockpiling of specific products, such as long-life food, health, and household and hygiene products. This change in consumption patterns might have been expected to lead to an increase in prices.

Providing insight to the government

We have tapped into new data sources such as administrative data held by government and private sector information. These have included aggregated and unidentifiable financial transactions data and data from technology companies. We have been providing insights to the government on a regular basis to fulfil their needs for timely indicators of economic activity.

Communicating our statistics

Visits to the ONS website have increased substantially during the pandemic, driven largely by non-specialist users. For the first time, views on mobile devices made up more than half of all traffic to the website. As such, we have made changes to our website to make our most popular articles and data more easily findable, and introduced a Coronavirus round-up page, to summarise the latest statistics. We have also made use of regular blog posts and statements to bring together important findings, and communicate changes to our statistics and plans for the future.

We have also alongside this article, in the Economic Review July 2020 edition, published three articles demonstrating the use of our data and statistics to analyse the early impacts of the coronavirus pandemic. These include analysis of the impact on the UK labour market, international trade, and the impacts on UK businesses gauged by the Business Impact of Coronavirus (COVID-19) Survey (BICS).

5 . Conclusions

The coronavirus (COVID-19) pandemic has highlighted the importance to produce a trustworthy and reliable evidence base for understanding the impacts on the UK economy. In line with our corporate strategic plan, we have acted to enhance our role as a service provider in meeting the wide-ranging needs of our users. We are shifting towards providing greater, more timely and detailed analysis by utilising a wider range of data sources The experience so far has not only shown how our analytical outputs are a public good, but the importance of unlocking the potential of the increasing volume of information that is now available.

Going forward, we aim to continue reflecting these principles in how we work. We will enhance our working and collaborative capabilities and build more expertise and capacity for modelling alongside our statistical and analytical outputs.

There has been a renewed emphasis in understanding the role of the communication in enhancing trust and we will continue to promote easy-to-understand outputs for wider public consumption, including how we can implement new household and business surveys and acquire commercial data to provide analysis to answer critical questions. In recent months, we have formed new internal and external partnerships, which we will look to build on as we respond to the new challenges, and which can complement our official estimates.

6 . Authors

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