The United Kingdom experience: The Business Impact of Coronavirus Survey

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Abstract

In response to the coronavirus (COVID-19) pandemic, the United Kingdom's (UK) Office for National Statistics (ONS) rapidly implemented a voluntary fortnightly online Business Impact of Coronavirus (COVID-19) Survey (BICS), (first dispatched in March 2020). BICS collects information from businesses across key sectors of the economy on the impact of the pandemic on, for example, their turnover, workforce, prices and trade. Outputs are used by decision-makers to help inform the coronavirus (COVID-19) response. The use of a fortnightly business survey, with mainly qualitative questions, had not been used before in a UK context, but has now proved invaluable in providing insights into numerous areas of the economy. Questions are reviewed and updated each fortnightly wave, providing ONS the opportunity to respond rapidly to changing policy needs and the evolving economic landscape

This paper describes why BICS was introduced, the processes involved in its development and describe how the survey has evolved over time. We explain our approach to balancing user data needs with managing burden on businesses. We explain how we have compared data across waves to monitor the economy on key issues over time and the interpretation issues associated with that. We also discuss how we overcame challenges to our regular production of the short-term monthly outputs, by data-linking effectively to the fortnightly BICS so as to ensure the monthly and quarterly outputs remained relevant and comprehensive. We focus on specific analysis issues such as the innovative analysis of textual responses and wave-to-wave comparisons, and effective sample design while considering the need for weighted estimates.

ONS's rapid and novel approach to data collection and analysis has allowed us to complement the official monthly and quarterly economic estimates, while offering users with a closer-to-real-time picture of the UK economy. This is proving invaluable to understand the economic impacts, and to help inform decision-making, during this challenging time.

The Business Impact of Coronavirus Survey

Leading and coincident indicators have the potential to help policymakers and economists track the impacts in a timelier manner and help provide more insight into how the economy is evolving in response to the coronavirus (COVID-19) pandemic.

Regular monthly and quarterly Office for National Statistics (ONS) business surveys did not provide the relevant information and/or the timeliness in order to monitor and react to the pandemic, so an alternative approach was required.

The Business Impact of Coronavirus (COVID-19) Survey (BICS) was set up rapidly, within two weeks, to collect information about the financial and operational performance of businesses during the coronavirus (COVID-19) pandemic. During a time of great uncertainty, it was essential to provide quick and coherent data on the impact of the pandemic with data being used, in real-time by decision-makers to identify the strategies needed to respond to the impact of the coronavirus (COVID-19) pandemic on the United Kingdom's (UK) economy and society.

BICS is voluntary and responses are mainly qualitative. Final results of each wave of BICS are published in a detailed, fortnightly bulletin: "Coronavirus and the economic impacts on the UK", accompanied by the underlying dataset. Flash estimates are published every second week of the current wave in the "Coronavirus and the latest indicators for the UK economy and society". As of August 2020, the sample size is approximately 24,000 businesses, with a relatively stable response rate of around 25 percent (i.e. around 5,500 to 6,000 businesses). This response rate is good given that the survey is voluntary, there is no active response chasing and businesses are choosing to respond despite perhaps being under other pressures as a result of the pandemic. Detailed information about the outputs and response rates are available in a comprehensive spreadsheet¹. From wave 17, the sample size will increase to 38,000 businesses each fortnight.

At the time of writing, there have been 15 regular fortnightly waves of BICS, (Wave 1 being dispatched on 21 March 2020) and the survey is ongoing, outputs have been closely monitored to help shape key policymaking decisions. Wave to wave comparisons of the outputs have become crucial in seeing how the economy has changed over time.

¹ Detailed BICS dataset, updated fortnightly:

Capturing data from businesses to meet users diverse needs

When the coronavirus (COVID-19) pandemic reached the UK, many businesses had to temporarily close or make changes to their working practices, such as switching from office to homeworking. While this brought obvious disruption to businesses, there were also risks to ONS's methods used to produce robust statistics. With businesses closed, ONS business surveys may not be completed either for logistical reasons (some are paper surveys sent in the post to the office address), or due to the strain the pandemic was putting on businesses, where survey completion may, understandably, take lower priority.

Given that many of ONS's economic outputs rely on business survey data, ONS needed solutions that would ensure economic outputs could still be produced on time and to sufficient quality. One such solution was BICS, initially conceived to meet ONS's needs to help support production of the standard suite of statistics, the driver rapidly changed as the evolving economic implications became clearer.

The earliest iterations of BICS focused on financial performance during the pandemic (such as the impact on turnover, prices and trade) compared to 'normal' circumstances, and operational performance relating to the workforce (for example, whether workforce size had increased or decreased, and what percentage of staff were working remotely off sick with coronavirus, or self-isolating). Questions covered actual performance (last two weeks) and expected performance (next two weeks).

New questions were added and refined over time, with the flexibility of the approach enabling dynamic changes to be introduced each iteration of the survey. When the UK government announced the introduction of various schemes and initiatives designed to support businesses and the workforce, questions were developed to capture uptake and issues at the UK level, as well as uptake for each country within the UK. As the pandemic continued, questions were added to help understand business's financial resilience such as how long their cash reserves would last and what their risk of insolvency was. Other topics covered included the impact to online sales, UK logistical and export and import challenges, footfall, regional impacts and safety measures to name a few. Some question sets are in every wave, others rotate in and out or alternatively, are 'one-off snapshots', asked just once. Taking this approach helps manage the burden placed on businesses. The question bank of all the BICS questions for each wave is publicly available².

With only a two-week window each wave to agree content, design questions and build and test the survey before it goes live, we have adapted our standard questionnaire design process. We cannot follow the typical best design practices, such as feasibility research and cognitive/usability testing, not only due to time constraints but also because it would cause additional load on businesses to contact them for research purposes during the pandemic. Instead, questions go through a rapid iterative draft and review process by questionnaire design experts and content writers, working in collaboration with the user to ensure the questions meet requirements. Part of this review process involves ensuring the question is not too complicated for businesses to complete. The success of BICS lies, in part, to keeping

² Question bank of BICS questions over the different waves: https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/articles/busin essimpactofcovid19surveyquestions/previousReleases

questions simple. Rather than asking for detailed financial data we use categorical response options, sometimes in the form of data ranges, so that businesses can select the most appropriate answer from a list. An example of this approach is the turnover question below, where businesses could select one of the possible options listed that most reflected their turnover in the two week period.

In the last two weeks, how has the coronavirus (COVID-19) pandemic affected your business's turnover, compared to what is normally expected for this time of year?

- Turnover has increased by more than 50%
- Turnover has increased between 20% and 50%
- Turnover has increased by up to 20%
- Turnover has decreased by up to 20%
- Turnover has decreased between 20% and 50%
- Turnover has decreased by more than 50%
- Not sure, and

Keeping questions simple is key to minimising respondent burden. Other steps we take to reduce burden include the use of a 'not sure' option. Standard questionnaire design practices would avoid overuse of a 'not sure' (or similar) option where possible. However for BICS, it is important that businesses can complete the questionnaire with relative ease. Having this response option gives the responder the opportunity to, in essence, skip a question that they do not know the answer to. This prevents getting 'stuck' and means the responder can continue through to the end of the questionnaire. Routing is used so that businesses only see questions that are relevant. For example, if a business has paused or permanently ceased trading, they do not get asked information about their turnover.

BICS does include some free text boxes, such as: "Let us know anything else that you think may help us understand your business's current situation". While this makes analysis difficult it does give businesses the opportunity to tell their own story without being constrained by fixed answers. Given this unprecedented situation, gathering individual narratives is beneficial, should businesses wish to provide it. Yorke et. al (2020) describes how the BICS textual questions have changed overtime to capture diverse user needs³, where a summary of the conclusions of this analysis can be found in Detailed outputs to support policy section of this paper.

Questionnaire and question quality (which contributes to the overall output quality) is ensured through various means including the iterative review process, the monitoring of analytics and by reacting to any themes from comments boxes, telephone calls or emails from businesses. Questions are changed promptly should an issue arise.

The BICS questionnaire has shown itself to be sustainable over time. This survey will therefore continue at least for the short to medium term, continually adapting to the ever-changing economic picture. Table 1 captures how some of the key variable questions have evolved overtime for the different waves.

³ Coronavirus and the experiences of UK businesses, textual analysis: March 2020 to June 2020: https://www.ons.gov.uk/businessindustryandtrade/business/businessservices/articles/coronavirusandtheexperiences ofukbusinessestextualanalysis/march2020tojuly2020

Table 1. A sample of BICS questions, from Waves 1 to 15, to show how questions were adapted through the pandemic to meet emerging policy needs

SECTION	INTRODUCED IN WAVE	ORIGINAL QUESTION(S)	UPDATED QUESTION	UPDATED IN WAVE
FINANCIAL PERFORMANCE OF YOUR BUSINESSES	Wave 1	Was the business's financial performance outside of normal expectations in the last two weeks? Was the business's turnover within its normal range in the last two weeks? In what way was your business's turnover outside its normal range in the last two weeks?	In the last two weeks, how has the coronavirus (COVID-19) pandemic affected your business's turnover, compared to what is normally expected for this time of year	Wave 6
EXPORTS/IMPORTS	Wave 1	Has the business's exporting/importing of goods or services been affected by the coronavirus (COVID-19) outbreak in the last two weeks?	Routing updated to reflect those businesses only exporting or importing.	Wave 4
ACCESS TO GOODS AND MATERIALS	Wave 1	Was the business able to get the materials, goods or services it needed from within the UK in the last two weeks?	-	-
PRICES OF GOODS AND MATERIALS (BOUGHT OR SOLD)	Wave 1	How did the prices of materials, goods or services needed by the business change in the last two weeks, compared with normal price fluctuations? Did the business have to change the prices of your goods or services that were sold in the last two weeks?	How did the prices of goods or services sold by your business change in the last two weeks, compared with normal fluctuations?	Wave 2
GOVERNMENT SCHEMES	Wave 2	Which of the following initiatives is your business interested in using, if any?	Updates in Wave 3 included whether businesses applied and if they received funding for schemes or initiatives. Wave 5 updates included different devolved governments schemes.	Wave 3 & 5
WORKFORCE	Wave 2	In the last two weeks, roughly what proportion of your business's workforce was working in the following ways?	The options in the previous questions were combined to one. Additional questions were added to ask if staff had returned from furlough in the last two weeks or were planning to bring staff back	Wave 6

		the last two weeks, roughly what proportion of your business's workforce was furloughed, off sick due to coronavirus or made redundant?	after being furloughed, in the next two weeks.
OTHER	Wave 1	Let us know anything else that you think may help us understand your business's current situation	

Notes:

• This table only provides a sample of the questions over the waves. To see a full set of questions please use question bank of all the BICS questions from the different waves⁴.

Source: Office for National Statistics - Business Impact of Coronavirus (COVID-19) Survey

Detailed outputs to support policy

BICS was designed to give an indication of the impact of the coronavirus (COVID-19) on businesses and a timelier estimate than other ONS monthly or quarterly surveys. It has allowed for many different streams of analysis including: longitudinal data analysis following business responses over the weeks; linking to other data sources to provide additional insights into businesses during the pandemic such as the labour market; and to help validate other ONS business surveys and provide supplementary evidence.

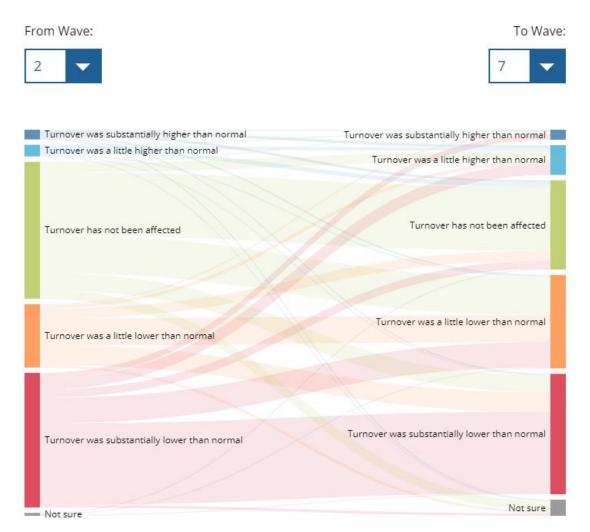
In May 2020, an article was published that looked closely at how a panel of businesses' responses had been affected in the two-week reference period for chosen variables: turnover, workforce and trade over the time periods from Waves 2 to 5⁵, this corresponded to dates 23 March to 5 April 2020 (Wave 2) through to 4 to 17 May 2020 (Wave 5). This analysis was updated further: Insights of the Business Impact of Coronavirus (COVID-19) Survey: 23 March to 5 April (Wave 2) to 1 to 14 June (Wave 7) 2020.

⁴ Question bank of BICS questions over the different waves:

https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/articles/busin essimpactofcovid19surveyquestions/previousReleases

⁵ Business impact of coronavirus, analysis over time, UK: Waves 2 to 5 panel: https://www.ons.gov.uk/businessindustryandtrade/business/businessservices/articles/businessimpactofcoronavirusa nalysisovertimeuk/waves2to5panel

Figure 2: A net 49 percentage points (ppt) of these businesses who were trading reported turnover was a little lower than normal in Wave 7, down from 51 ppt from Wave 2



Notes:

- 1. Final results of Waves 2 to 7 of the Office for National Statistics' (ONS) Business Impact of Coronavirus (COVID-19) Survey (BICS) panel. (n = 1,096).
- 2. The flows in the Sankey Diagram show the number of businesses who responded to each option for each Wave combination. A business could have responded with any of the other options when nonadjacent waves are selected.

Source: Office for National Statistics - Business Impact of Coronavirus (COVID-19) Survey

As well as looking at the same responding businesses over time, analysis has been undertaken to look into the textual responses of each questionnaire, which provided further insights on individual business experiences over the course of the pandemic so far. This analysis summarised the most commonly cited words that businesses responded with, in the context of popular phrases, and establishes how these have changed in frequency over time to gain insight into qualitative messages behind the BICS responses⁶. The conclusions

⁶ Coronavirus and the experiences of UK businesses, textual analysis: March 2020 to June 2020: https://www.ons.gov.uk/businessindustryandtrade/business/businessservices/articles/coronavirusandtheexperiences ofukbusinessestextualanalysis/march2020tojuly2020

drawn from this article included the continued reference to supply and customer demand across questions, and waves. This emphasises the impact that disruption to procurement supply chains has on consumption and demand and reiterates the impact that closure of businesses, reduced supply and businesses cashflow has had as a consequence of Coronavirus (COVID-19).

The workforce data, from Wave 2 onwards, have been used within the Labour Market area of ONS to produce the first estimates of the impact of Coronavirus (COVID-19) on the workforce, meeting an immediate need for up-to-date information. The results from BICS were apportioned by workforce size. To derive numbers and proportions of employees in those businesses, the employment recorded for each reporting unit on the Inter-Departmental Business Register (IDBR) was used. The apportionment of workforce methodology used for these data does not currently involve grossing to make a UK-wide estimation; therefore, the findings should not be treated as representative of the UK workforce⁷. The same apportionment method has since been used in all workforce results for all subsequent waves, to provide a timely and responsive best estimate of businesses workforce situations to feed into policy impact discussions.

The BICS outputs have been compared to alternative data-sources, such as administrative records from the UK's tax office; HM Revenue and Customs (HMRC). With the BICS proportion of the UK workforce furloughed being widely used by stakeholders and users, the data was compared to the separately derived figures published by HMRC. An article comparing the BICS furlough estimates to HMRC figures at both an industry and regional level was published⁸ which discussed the similarities and differences between the two sets of figures. In general, the HMRC administrative data source are cumulative in nature, whereas BICS figures provide a snapshot of the number furloughed at any one time.

Value to users and policy makers

The UK's Office for Statistics Regulation (OSR) endorsed the BICS approach at an early state⁹, noting that it would prove invaluable to decision-makers. Additionally, further public good is likely to be delivered through the use of the data by a wide range of organisations and the general public in measuring some of the economic and societal impacts of the pandemic in close-to real-time. ONS utilises a micro-data approach through a Secure Research Service¹⁰ where academics and accredited institutions can work on the confidentialised BICS data from all the waves. This has allowed detailed policy questions, specific to user needs, to be addressed in a secure research environment.

⁷ Furloughing of workers across UK businesses: 23 March 2020 to 5 April 2020: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/furloughing

https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/furloughingofworkersacrossukbusinesses/23march2020to5april2020

⁸ Comparison of furloughed jobs data: May to July 2020: https://www.ons.gov.uk/businessindustryandtrade/business/businessservices/articles/comparisonoffurloughedjobsd ata/latest

⁹ "This is ground-breaking and remarkable work" April 2020, https://osr.statisticsauthority.gov.uk/correspondence/rapid-review-of-coronavirus-the-uk-economy-and-society-faster-indicators/

¹⁰ https://www.ons.gov.uk/aboutus/whatwedo/statistics/requestingstatistics/approvedresearcherscheme

The BICS results and outputs have received wide coverage, from organisations such as the Bank of England (BoE), Office for Budget Responsibility (OBR) and National Institute of Economic and Social Research (NEISR). Coverage also extends to the news and media, where BICS is quoted on a regular basis. The Times quoted: "The ONS survey of almost 24,000 businesses revealed that 12 per cent of employees remain on furlough, underlining the extent to which the job retention scheme continues to prop up the economy." 11

While extensive user consultation about the questionnaire topics was not initially possible due to early time constraints, over the course of the different waves of BICS, ONS worked closely with policy and analytical leads in government departments to help identify priority topics for new waves of the BICS. These have included conversations and user requirements from:

- Treasury Department (HMT)
- Department for Business, Energy and Industry Strategy (BEIS)
- Department for International Trade (DIT)
- Tax Department (HMRC)
- Devolved Administrations (Northern Ireland, Scotland, Wales)
- Competition and Markets Authority
- Bank of England (BoE)

Within ONS, the production areas have worked closely across the organisation to align the development, production and analysis needs. To ensure relevance and consistency of outputs, new corporate groups were created to help coordinate COVID-19 related outputs, this included a dedicated: Outputs Group, Analysis Group, which had strong links through to a central COVID-19 Rapid Response team. This helped user needs to be coordinated and responsive.

BICS has been used by a variety of monthly and quarterly outputs produced by ONS, particularly in the quality assurance stage and assessing impacts between the fortnightly datasets and the monthly outputs. The published fortnightly results of BICS are broken down by industry, workforce size and region to incorporate all user's needs. For example, the Index of Production and Index of Services output teams have used BICS turnover results to support their results in a detailed monthly GDP related release "Coronavirus and the impact on output in the UK economy" bulletin¹².

The Construction focused output team have used the BICS workforce proportions to illustrate the evidence of increasing activity in the construction industry in their monthly bulletins¹³. They showed how the construction sector had one of the largest proportions of the workforce working remotely or at their normal place of work, at 75.5%, and returning from furlough at 20.5%, when apportioned by employment size in Wave 8.

¹¹ The Times: One in eight still on furlough as Rishi Sunak's jobs scheme draws to end: https://www.thetimes.co.uk/article/one-in-eight-still-on-furlough-as-rishi-sunaks-jobs-scheme-draws-to-end-mncjnsb6p

¹² https://www.ons.gov.uk/releases/coronavirusandtheimpactonoutputintheukeconomyjune2020

Other monthly publications that quote BICS results, have included monthly Retail Sales¹⁴ (RSI). An extract from a recent statistical publication illustrates how a subset of BICS data can be used to highlight the impact on sections of the economy.

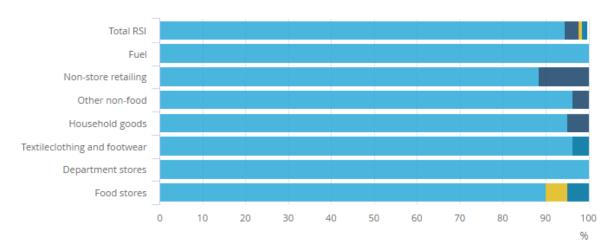
Figure 3: Example of using fortnightly BICS data (Wave 10) with a monthly output (Retail Sales)

Feedback from the Business Impact of Coronavirus Survey suggested that many retail businesses were trading in the period that the survey was live – 27 July to 9 August 2020

Wave 10 of the Business Impact of Coronavirus (COVID-19) Survey, UK, survey was live for data collection from 27 July to 9 August 2020



- Started trading within the last two weeks after a pause in trading
- Currently trading and has been for more than the last two weeks



Source: Office for National Statistics – Monthly Business Survey – Retail Sales Inquiry

Results have also been used in quarterly outputs. The Stocks and Capital Expenditure team have requested the inclusion of questions on Stock and Capital Expenditure to support their analysis on the impact of COIVD-19 on their outputs.

The development of the trade questions has been requested by the Department for Transport (DfT) and the Trade division within the ONS. Addition of new questions for trade have meant they can include results from these questions in their upcoming quarterly outputs.

¹⁴ https://www.ons.gov.uk/businessindustryandtrade/retailindustry/bulletins/retailsales/july2020

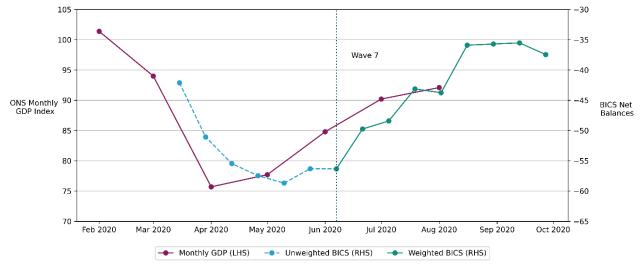
With several internal and external stakeholders using BICS results, comparing the trends seen in the BICS results with other usual measures/estimates published by ONS, provides insight into the reliability of the impacts reported by businesses.

Figure 4 shows how the trends from the responding businesses in BICS are also seen to be broadly reflect the published UK monthly GDP estimates, where BICS is published much earlier than the official monthly GDP estimate. The BICS calculation is based on a net balance approach, using the published BICS data for the turnover variable. Early indications show that this indicator from BICS provides a timely indictor of the impact of COVID-19 is having on businesses, and broad direction of the underlying published monthly GDP indicator.

BICS also corroborates the official picture of which industries have been most adversely impacted by the effects of voluntary and involuntary social distancing, providing a timelier insight into how the economy is evolving.

Figure 4. Fortnightly turnover estimates from BICS broadly reflect the published UK monthly GDP estimates

Net turnover balances of businesses currently trading against gross domestic product (GDP) monthly estimates, UK, 1 February to 4 October 2020



Notes:

- 1. Final unweighted results, Wave 1 to Wave 6, and final weighted results, Wave 7 to Wave 15, of the Office for National Statistics (ONS) Business Impact of Coronavirus (COVID-19) Survey (BICS).
- 2. Weighted net balances have been calculated from Wave 7 onwards only. The sample redesign in Wave 7 improves our coverage for the small sized businesses, allowing for weighted results to be truly reflective of all businesses.
- 3. Monthly GDP publications can be found here.
- 4. Net balances have been calculated by subtracting the weighted by turnover number of businesses who have reported a decrease in turnover from the weighted by turnover number of businesses with an increase in turnover, all divided by the total weighted number of businesses currently trading for that wave.

Emerging data needs

Timely business surveys are crucial to measuring the economy in times of rapid change. We explore the potential for further development in this area and consider what future requirements may need to be met for a similar business opinion survey.

So far, all published results have been based on responding businesses only, and due to the voluntary nature of the survey, comparison across waves must be treated with caution. The need for weighted results has been more critical to provide an estimate of how all businesses have been impacted from the start of the pandemic to date. With weighted results, comparison across waves is now feasible, showing how different times during the pandemic have affected different industries and different sized businesses. ONS published an article into the insight of weighted BICS results on September 14, 2020 ¹⁵. Initial published results showed weighting by turnover or employment has minimal difference, whilst weighting by count of business has the most significant difference, to the previous unweighted published results.

From Wave 13 onwards, publications have now included weighted results (with imputation), with a back series from Wave 7 to the current wave for the top three variables:

- Trading status
- Financial performance
- Workforce arrangements (furlough)

Up until September 2020, BICS had not published any results on businesses responses to the expectations questions. After reviewing the results to the turnover expectation questions to actual business responses in the following Wave in a recent article¹⁶, BICS will investigate publishing a regular update of comparing business expectations to actual responses. This will help understand how businesses are expecting to recover as the wider economic conditions continue to change.

A recent ONS user consultation in August 2020 sought detailed user feedback to understand future requirements. With responses from over 20 separate users, including UK government departments, Devolved Administrations, and local government, the strong messages for emerging data needs that came through were:

- maintain the survey at 2-weekly intervals at least in the short to medium term. This
 would help inform policy needs as the economic conditions continue to change.
- continue with publication of a detailed bulletin and accompanying dataset which captures all the breakdowns for the different variables by size-band of business and regional data.
- use the BICS approach to help measure the impact of other events, such as the UK exiting the European Union.

¹⁵ Business Impact of Coronavirus (COVID-19) Survey: preliminary weighted results: https://www.ons.gov.uk/businessindustryandtrade/business/businessservices/articles/businessimpactofcoronaviruscovid19survey/preliminaryweightedresults

¹⁶ Business Impact of Coronavirus (COVID-19) Survey, expectation responses over time, UK: 1 June to 23 August 2020 (Waves 6 to 11):

 $[\]frac{https://www.ons.gov.uk/businessindustryandtrade/business/businessservices/articles/businessimpactofcoronavirusc}{ovid19 survey expectation responses overtime uk/1 june to 23 august 2020 waves 6 to 11}{}$

- understanding the viability of businesses moving forward, such as redundancies and adjustments to operating model
- produce further regional analysis to help monitor local lockdowns

Conclusion

The use of rapid business surveys clearly helps meet user needs, and policy demands, particularly in a time of unprecedented change to the economy. Having a flexible approach to questionnaire development and development has enabled changing requirements to be met in a way that is responsive and timely.

The UK's Business Impact of Coronavirus survey has provided business led evidence to support both the regular on-going traditional monthly and quarterly statistical outputs in a quality assurance capacity, but also enabled more timely estimates of economic activity so as to form part of the evidence base for high pressure policy decisions.

The future approach is that BICS will continue but likely to be an opinions based business survey, so policy needs can continue to be met in a rapid and flexible way for a wide range of topics.

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