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The Treasury during Covid

What lessons can be learned from the pandemic?

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About this report

The Covid pandemic was fundamentally a public health crisis, but its wide-ranging impacts meant that the Treasury played a crucial role in the response. This report examines two important aspects of that response: the role the Treasury played in designing and implementing labour market and business finance support schemes; and how the department contributed data and analysis to help inform decision making at the centre of government.

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Contents

Executive summary

The Covid pandemic was a huge shock to the UK and prompted an unprecedented government response, including shutting down vast swathes of normal life and the government paying the wages of around a third of the workforce. While the crisis was fundamentally one of public health, the wide-ranging impacts meant that HM Treasury – the UK's economics and finance ministry – played a crucial role in the response. This report examines two important aspects of that response: the role the Treasury played in designing and implementing labour market and business finance support schemes; and how the department contributed data and analysis to help inform decision making at the centre of government.

The aim of this report is to use the experience of the pandemic to draw lessons about what should be continued and what changed to strengthen the response to future crises, and to improve how the department operates in 'normal' times. These are questions that the Covid inquiry will examine. But it could take many years for that to conclude, by which time memories will have faded and many of the officials and ministers involved will have moved on. We, therefore, believe it is important to examine these questions now to ensure that lessons are learned.

Key findings

Crises often bring out the best and the worst in people and institutions, and this was certainly true for the Treasury during the pandemic. There were many successes and many individuals rose to the challenge of dealing with a crisis of previously unimaginable proportions. But the crisis also highlighted existing areas of weakness and fault lines in the Treasury's relationship with other parts of government.

Across both the design and implementation of economic support policies and the Treasury's input into central decision making on major social distancing policies, this report's main findings are as follows.

Initial response

- **Before March 2020, the Treasury had done little preparation for the types of response to the coronavirus pandemic that were needed from it, even though a pandemic (albeit a flu pandemic) was at the top of the government's National Risk Register.**

- **Despite this, the Treasury responded very quickly, rapidly rolling out major programmes of support for employees and the self-employed and introducing business loan guarantees.** This phase of the response played to the Treasury's strengths, with a young, bright, flexible and capable workforce.

- **Some of these programmes built on existing systems, developed for previous crises – particularly the financial crisis of 2007–08 and preparation for a potential no-deal Brexit.** But the data and systems that the government had available constrained the nature of the schemes that were rolled out.

- **Ministers having clear objectives in the very early stages of the pandemic helped the Treasury's initial response.** Once the decision had been taken to lock down, the Treasury's role was to work out how to cushion the blow to the economy and minimise immediate and long-term effects.

Engagement

- **The quality and extent of the Treasury's collaboration with other parts of government were very good, although there were some exceptions.** The Treasury worked extremely effectively with HMRC on the delivery of labour market support schemes, which helped to ensure delivery considerations were factored in from the start. But our interviewees suggested that engagement with other departments on business support schemes was slightly less effective, and that confused lines of accountability for the British Business Bank (BBB) hampered the roll-out and scrutiny of the loan schemes.

- **The Treasury's engagement with external stakeholders was very good – for example, with business groups (such as the Confederation of British Industry (CBI)) and trade unions (including the Trades Union Congress (TUC)).** This engagement was particularly intense at the start of the crisis but was sustained for much of the pandemic. It helped to identify and remedy gaps and problems with the support schemes as the pandemic progressed and ensured that stakeholders were able to act as effective 'policy intermediaries' between their members and the government.

- **In the early months of the pandemic, the Treasury also engaged quite well with economics academics and other external economic experts.** These interactions helped officials to think about and understand the economic impacts of the pandemic and how the health and economic effects interacted. But this interaction was largely one-way – with academics presenting their research but the Treasury not sharing theirs – and the interactions diminished over time. This limited the benefits the Treasury could get from external experts. Government used economic and social science expertise far less than epidemiological expertise during the crisis, even though there was a significant need for both.

Analysis and decision making

- **A fully effective government response to the pandemic depended on many things, including strong analysis from the Treasury – on the economic impacts of the pandemic and how economic behaviours and impacts interacted with the spread of Covid – being shared openly across government.** This was because there were complex two-way relationships between the spread of the disease and economic behaviour, and what was happening to the economy affected the demands facing many other departments.

- **The Cabinet Office had the main responsibility for synthesising evidence from across government to inform central decision making.** But the Treasury, as a powerful player at the centre of government, had an important role to play too and had the ability to advocate for and generate better information sharing.

- **There was a stark contrast in the transparency of economic evidence informing ministers' decisions compared with the scientific evidence.** Very little of the social and economic evidence that informed ministers' decisions was published, particularly before 2021, and the Treasury shared almost none of its analysis externally, even with trusted experts. This lack of transparency hampered effective synthesis of evidence (and thus decision making) and may have undermined the government's ability to convince the public of the merits of public health restrictions. It also means we have had to piece together evidence for this report from limited published sources and interviews.

- **The Treasury worked quickly to use new real-time data sources in innovative ways to understand which parts of the economy needed support.** Despite not having a particularly strong data science capability before the pandemic, the department acted quickly to import new sources of data that other parts of government and the private sector had developed to build a picture of what was happening in the UK economy. The department started building a stronger data science capability during the pandemic and has continued to strengthen this since, which is welcome. The Treasury also shared this analysis of real-time data with Number 10, the Cabinet Office and other departments, which helped inform ministers' decisions. Some of this work was published.

- **But when it came to more in-depth economic analysis – for example, predicting the potential economic impacts of different policy options or projecting how economic behaviour might respond to a renewed spread of the disease – the Treasury shared information much less effectively with the rest of government, particularly in 2020.** Senior Treasury officials also vetoed proposals from other departments to establish a cross-departmental group to discuss economic impacts and the proposal for a socio-economic version of the Scientific Advisory Group for Emergencies (SAGE), which could have fed external expertise into government in a more systematic way.

- **The Treasury produced its own projections for what might happen to the economy, under alternative assumptions about policy and the disease, which informed its thinking.** But it did not share these widely across government, instead pointing other departments to projections that the Office for Budget Responsibility (OBR) and external forecasters had produced. While those were of some use, at times they became outdated. Because the Treasury stepped back from providing thought leadership, other departments duplicated effort and resorted to establishing 'back channels' of communication between analysts to better understand what was happening.

- **The Treasury did develop models that brought together epidemiology and macro-economics (epi-macro) to examine the inter-relationships between health and the economy.** But the result of these models did not play a major part in advice to ministers.

- **Beyond this epi-macro modelling, it is very unclear how much work the Treasury did to unpick the causal impact of public health measures over and above the voluntary behaviour responses that would have occurred anyway.** This ought to have been an important focus for Treasury analysts but there are no published outputs of this sort of work from the Treasury and interviewees had seen little evidence of it.

- **The sharing of information and the synthesis of analysis at the centre of government were weak from the late spring until the late autumn of 2020.** The Cabinet Office did not have effective structures for drawing together evidence from different departments and presenting ministers with a common understanding of the analysis. Instead, departments – including the Treasury – shared analysis strategically to support their particular point of view, with the chancellor feeling he needed to 'make the economic case' as a counter to 'the health case' that the health minister was making. This contributed to decision making becoming a tug-of-war in autumn 2020, which led to sub-optimal decision making.

- **During the summer and autumn of 2020, the Treasury appears to have suffered from an optimism bias that the government's public health advisers did not share.** It is not possible to know from the outside whether ministers or officials drove this optimism, or both. This led the Treasury to: not implement some relatively easy improvements to support schemes; implement the Eat Out to Help Out policy in summer 2020, which was inconsistent with scientific advisers' assessment of the risk of a second wave; and announce very late the extension of furlough in autumn 2020.

- **Towards the end of 2020, a new Cabinet Office team was established to synthesise analysis from across government, which the Treasury worked closely with.** This had a major positive impact on decision making. From this point onwards, analysis from different departments was drawn together, the interactions between different factors were more clearly drawn out and ministers were presented with a common evidence base on which to decide policy. The greater clarity that this provided was reflected in, for example, the February 2021 road map for easing lockdown restrictions.

In this report, we have focused on the Treasury because of the central role it played in the government's response. Inevitably, we have had to limit our focus to enable us to examine the issues in enough detail. We have not examined all aspects of the Treasury's role during the pandemic – for example, we have not looked at spending control processes. Of course, other departments also played important roles – and similar analysis of the strengths and weaknesses of their contribution to the government response would be worthwhile.

Recommendations in brief

The Treasury excelled in many aspects of its response to the pandemic, particularly in the design and implementation of policies that cushioned the economic impact of Covid and government-imposed lockdowns. These actions undoubtedly averted mass unemployment and widespread business failure. The institutional strengths that contributed to this should be maintained.

But there were also important shortcomings in the Treasury's actions during the pandemic, particularly in how it used and shared its economic analysis and worked with other departments on cross-cutting pandemic policy. Many of these problems stemmed from long-standing features of how the Treasury operates. Rectifying these shortcomings would help improve policy making in normal times and ensure the department is better prepared for future crises, whatever they may be.

Our key recommendations to achieve this are as follows:

- **The Treasury should strengthen its capacity to generate and use high-quality evidence.** It should appoint a distinguished external economist to serve as its chief scientific adviser to ensure that evidence used is robust, relevant and high quality, who would derive their authority from knowledge and have the ability to convene external authoritative groups to contribute to the department's thinking. The Treasury's director of analysis should be given the time and responsibility to oversee good-quality analysis within the department, advocate for the importance of that at board level, and ensure analysts working in the department uphold the analysis function standards. The Treasury should establish a set of specialist roles across all experienced and senior grades for technical economists and policy experts, and officials should be given more opportunities and greater rewards for developing their technical skills. The Treasury should also publish the analysis it does more openly, to improve the quality by opening it up to external scrutiny.

- **Civil servants should be better incentivised to deliver high-quality, objective advice to ministers.** A new civil service statute should make clear that civil servants' role in 'serving the government of the day' includes a duty to provide rigorous, high-quality and impartial advice to the government on its policies and on the wider context in which those policies will be implemented. A duty to publish policy advice, or at least the evidence that underpins it, would likely need to accompany this.

- **The Cabinet Office needs to be strengthened to ensure it has the authority to help break down departmental silos, including through a stronger standing central analytical function.** This should include giving the Cabinet Office greater standing capacity to synthesise evidence on domestic policy issues to ensure that ministers are working from a common understanding of the evidence. It is important that Cabinet Office officials are supported in this role by the clear authority of the prime minister and cabinet secretary.

- **The Treasury and the rest of the centre of government should ensure that there is a more organised process to draw in socio-economic advice from outside government during crises.** One approach would be to have a parallel to the SAGE committee that would consider socio-economic advice. More generally, the Treasury should develop stronger, more formal networks with external experts to help ensure that the most relevant, up-to-date evidence informs policy making.

- **The Treasury should maintain the closer working relationships with HMRC and the Bank of England that developed during the pandemic, including ensuring where possible that delivery experts are in the room with ministers to make sure that suitably qualified people are able to triangulate properly between the policy intent and what is feasible.** Sustaining what was achieved during the pandemic will require effort from senior officials and ministers, particularly as staff move jobs. But this could be achieved, for example, by reinvigorating the interchange of staff between HMRC and the Treasury. The Treasury could also build stronger analytical links with other departments if it encouraged them also to establish the sort of senior specialist roles we describe above, which would facilitate the interchange of relevant experts between departments.

- **It is important for the Treasury to maintain its characteristic agility.** Having a bright, capable, hard-working and flexible workforce and institutional structures facilitated the Treasury's rapid response to the pandemic. This agility was invaluable in responding to the crisis, the precise details of which could not reasonably have been predicted.

- **The department should work closely with the Cabinet Office resilience directorate to ensure the Treasury is properly considering the range of consequences of risks that are fundamentally non-economic in nature, so that it is better prepared for future crises.** But the broad shape of the pandemic impacts, and the economic response needed, could have been predicted if the

Treasury had dedicated more attention to the risks identified on the National Risk Register. And the Treasury's ability to respond relied on preparations that had been made for previous crises – notably the financial crisis and the prospect of a no-deal Brexit. The department should also consider what data and systems would offer a wider range of options to respond to future crises and which of these could be developed at reasonable cost. To give the department's permanent secretary the scope and responsibility to do this, the government should enshrine in a new civil service statute the responsibility for civil servants to undertake reasonable contingency planning to deal with potential policy changes and emergencies and to identify long-term trends and potential future policy options.

Questions for the Covid inquiry

There are some important issues that we have not been able to get to the bottom of in our research. But the Covid inquiry will be able to compel officials and ministers to share information. We suggest that the inquiry should probe the following questions:

- **Exactly what analysis did the Treasury do on the economic impacts of various interventions to inform policy making?** As well as looking at what officials did, the inquiry should also ask what those officials then shared (or not) with their ministers in policy advice, and why.

- **What role did ministers and officials play in limiting the extent to which the Treasury shared analysis relevant to decision making at the centre of government or other departments?** Such limitations could have taken the form of direct instruction from ministers, or officials interpreting how they should interact with other departments based on (their perception of) ministers' preferences and objectives. It would also be a worthwhile exercise to investigate how the role of ministers in influencing these issues may have varied across departments.

- **Why was more analysis of the economic and social impacts of restrictions not shared with parliamentarians and the wider public (in the way that, for example, epidemiological analysis was)?**

- **How and how far did Treasury ministers and officials engage with epidemiologists and scientists inside and outside government to inform the department's view of the impact and likely progression of the pandemic?** When the Treasury did engage, what evidence is there that officials internalised the insights gained from these interactions and ultimately used them in internal analysis and policy advice to ministers?

1. Introduction

The coronavirus pandemic is one of the most significant shocks that the UK has faced in living memory, and the public and the government are still feeling its effects. It placed high demands on policy makers, requiring them to make decisions about spending money and restricting freedoms on a scale that would have been previously unimaginable, often with very little information.

This was, in the first instance, a health crisis. To protect the population from the exponential growth of a deadly disease, the UK government – in common with most other countries in Europe – imposed a lockdown on the public. But the lockdown, by preventing much social contact and activity, also shut down large swathes of the UK economy, plunging it into the deepest recession for 300 years.

HM Treasury – the UK's economics and finance ministry – responded rapidly, developing expansive support schemes for workers and businesses. These schemes were rolled out ahead of schedule with remarkably few immediate problems and are likely to have prevented a huge rise in unemployment and business failures.

In this first phase of the crisis, the focus was on how to implement the national lockdown to prevent a public health catastrophe, with other areas of policy (including economic and fiscal) being deployed to enable that public health response and deal with the negative consequences of restrictions on social activity. But as the crisis progressed and more evidence emerged on the transmission and health impacts of Covid and on the effectiveness and side effects of different policy measures, decisions became more about what the most effective ways were – among a variety of options – of achieving desired outcomes. At the same time, decisions were more and more presented (and, it seems, understood) as a trade-off between health and economics, or lives and livelihoods. The debate about how government should respond to the pandemic became dominated by trade-offs between apparently conflicting objectives that lay with different departments, rather than a whole-government effort to achieve common aims.

As the policy making context evolved and became more complicated, so too did the role of the Treasury. Calling it the 'economics and finance ministry' understates the extent of its influence over UK policy making. The UK chancellor has much more power than his – and so far it has always been a his – counterparts in other countries, wielding considerable influence over other departments' policies and playing a key role in the centre of government, along with the prime minister's team in Number 10 Downing Street and the Cabinet Office.

As the pandemic progressed, the Treasury became increasingly influential in debates within the centre of government about the appropriate response to the pandemic; for example, whether and when to lift or reimpose restrictions on social interactions.

This report, drawing on more than 50 interviews, and two private roundtables, with current and former government officials, academic experts and other external stakeholders, reviews the Treasury's performance in leading economic policy design and implementation and its contributions to central decision making in relation to the pandemic. The aim of this report is to examine what went well and what did not and to draw lessons about what should be continued or changed to help improve policy making in normal times, as well as to make the department better prepared to respond to future crises, whatever they may be. We start by examining the design, implementation and adaptation of the main labour market support policies (the Coronavirus Job Retention Scheme and the Self-Employment Income Support Scheme) and the business loan guarantee schemes. We then look at how the Treasury contributed to central decision making, including the types of analysis it undertook to understand the economic impact of the pandemic and public health measures, and how these were shared with others within and outside government.

We have had to limit our focus to enable us to examine the issues in enough detail. This inevitably means we have not examined all aspects of the Treasury's role during the pandemic. We have not, for example, looked at the financial support offered to the public sector or new major public spending programmes such as the Vaccine Taskforce and NHS Test and Trace, and the associated spending control processes. We have focused on the Treasury because we believe it played a very important role in the government's response, as it often does. But other departments did too. By shining a light on the Treasury, we do not wish to imply that similar praise and criticism could not also be levelled at other parts of government.

This report builds on previous Institute for Government research on the UK government's response to Covid, which has looked at issues including:

- decision making at the start of the pandemic[1]
- risk management[2]
- response to shocks[3]
- science advice[4]
- data sharing[5]
- the role of public bodies[6]
- contingency planning for schools.[7]

It also contributes to the Institute for Government's work on the centre of government as one of a planned series of deep-dives into departments across Whitehall.[8]

Unfortunately, the Treasury has not contributed in detail to this report, as it has interpreted guidance from the Cabinet Office as meaning it cannot take part in a study that risks interaction with the department's contributions to the official Covid inquiry. Officials in other departments did not feel similarly constrained from sharing their perspectives on the questions we examine here. We are grateful to the Treasury for reviewing an earlier draft of this report to correct factual errors. However, this document has not benefited from full and frank accounts from officials who still work in the department. This has necessarily limited some of the areas we have been able to examine and means some questions remain unresolved. But we are confident that the conclusions reached in this report are robust, based on interviews with former Treasury officials, current officials from other parts of government and public records.

2. Economic support policies

Overview of economic support programmes

Despite little preparation, the Treasury responded rapidly to the emerging Covid threat, quickly deploying substantial economic support measures. This response built on work undertaken to respond to earlier (or potential) economic shocks, such as the financial crisis of 2007–08 and the possibility of a no-deal Brexit in 2019.

This chapter considers the Treasury's role in leading on the design of economic support policies, and how it worked with the public and private sectors to deliver them. After providing a brief overview of how the economic support policy landscape evolved through the pandemic, we provide a partial summary of some quantitative evaluations of the effectiveness of some of the main economic support schemes, including drawing on how the scheme mechanisms and economic outcomes compared internationally. But it is too early to tell what the medium- or long-run effects of some of the schemes may be. Instead, the main focus of this report is on how ministers and officials behaved and what impact that had on the effectiveness of the policy making process. Specifically, we consider the following questions:

- How prepared was the Treasury for the type of pandemic that occurred?
- How did Treasury officials and ministers work to design and implement the economic support policies at the beginning of the pandemic?
- Did the quality of the Treasury's engagement with public and private organisations responsible for delivering the schemes influence the effectiveness of economic support policies?
- How did the Treasury leverage the expertise and experiences of external stakeholders, such as trade unions and business groups, to help design policies?
- What constraints were imposed on policy design by the limitations of the systems and data that was used to implement the policies?
- How were the policies adapted as the pandemic went on, in response to either initial design flaws or the changing nature of the pandemic and social restrictions?

A brief history of Covid economic support schemes

The UK government provided a huge amount of support to the private sector during the pandemic, in addition to huge increases in public spending to support public services during the crisis. The private sector support was devised and rolled out rapidly. On 11 March 2020, the very recently appointed chancellor, Rishi Sunak, presented a budget statement announcing £12 billion of support, including for the NHS and other public services, and expanded eligibility for statutory sick pay.[1] The government also announced schemes to support affected businesses, including

expanded business rates relief, a Coronavirus Business Interruption Loan Scheme (CBILS) providing lending of up to £1bn, and a £2.2bn grant scheme for small businesses.[2] At the time, commentators welcomed this as "substantial".[3]

The Treasury document published alongside the budget stated that "the OBR [Office for Budget Responsibility] notes that the spread and impact of a Covid outbreak clearly shows a downside risk to the forecast, but the scale is highly uncertain and the economic impact is likely to be temporary".[4] Over the coming days, though, the true scale of the impact on the UK became widely acknowledged.

Five days after the budget, the prime minister, Boris Johnson, said: "Now is the time for everyone to stop non-essential contact and travel."[5] A day later, on 17 March, Sunak announced a significant expansion of support for business. He offered up to £330bn in guarantees for businesses, delivered through an extension of CBILS he had announced at the budget, and a Covid-19 Corporate Financing Facility for large investment-grade firms, to be delivered by the Bank of England. In the speech announcing these measures, the chancellor said: "We will do whatever it takes."[6]

Before the end of March, Sunak had also announced unprecedented support for workers: for the first time the British state would be stepping in to help pay workers' wages through the Coronavirus Job Retention Scheme (CJRS), more commonly known as 'furlough'.[7] The government would end up paying the wages of more than a third of the UK's workforce, which cost the government £70bn.[8] A separate scheme for self-employed individuals – the Self-Employment Income Support Scheme (SEISS) – was also announced.

These schemes were adapted and new ones were added as the pandemic progressed – to respond to the evolving nature of Covid and to make them work more effectively – as detailed in Annex A and Annex B. But the approach of subsidising wages to limit the rise in unemployment and supporting businesses' cash flow through a variety of grants and government-backed loans was sustained throughout the pandemic.

Many of the schemes were initially expected to be in place for only a few months but – as the pandemic dragged on and the public health restrictions were extended – it became clear that more economic support was required and so the schemes were extended, repeated or topped up. Furlough, for example, was initially announced for three months (between March and May 2020), but was extended several times. Some of these extensions were announced at the last minute, particularly in autumn 2020. The scheme ultimately ended on 30 September 2021, meaning it was in place for 18 months (six times longer than originally intended).

The government also introduced a range of policies intended to stimulate the economy and encourage recovery as the country exited restrictions. There was an initial tranche of these when the country was exiting the first lockdown in summer 2020, under the heading of a 'Plan for Jobs', which included:

- a reduction in VAT for leisure and hospitality businesses

- the Eat Out to Help Out scheme, which subsidised restaurant meals to encourage people to return to the hospitality sector

- changes to the furlough scheme to enhance incentives to return to work

- the Kick Start programme to help get young people into work.

Most schemes were then withdrawn in 2021/22 as the economy began to normalise. The larger schemes such as furlough and business loans were gradually reduced through a tapering of their generosity.

The economic support schemes were broadly successful

The objective of this report is not to quantitatively assess the performance of the key economic support schemes, but rather to look at how the Treasury approached designing them. Indeed, it is too early to come to firm conclusions on their impacts given that we do not have the data to assess what their longer-term effects are. We have published an explainer on our website that sets out what we already know about the effectiveness of the schemes, drawing on evaluations published by the government and external analysis,[9] which will be updated as the government's final evaluations and other relevant work emerge in the future.

But it is worth briefly emphasising here that the evidence so far suggests that the economic support policies were very successful at achieving the broad objectives set out above. Perhaps one of the greatest success stories of the pandemic, in the UK and other countries that deployed similar 'furlough' schemes, was the extent to which unemployment remained low. From a low of 3.8% in 2019, the unemployment rate rose to an average of only 4.6% in 2020 (the three-monthly peak was 5.2% in October–December 2020).[10] This small rise in unemployment is remarkable given the 11% fall in economic output between 2019 and 2020 – the largest recession for more than 300 years.[11,12] The extent to which the CJRS was able to keep unemployment relatively low was a surprise to many major forecasters:

- In April 2020, the Office for Budget Responsibility's (OBR) initial illustrative Covid reference scenario estimated that real GDP would fall by 35% in 2020 Q2, accompanied by a sharp rise in the unemployment rate to 10% (an increase in unemployment of 2.1 million, to a total of 3.4 million).[13]

- In the OBR's July 2020 Fiscal Sustainability Report, the expected unemployment rate rose to 12% (to a total of 4 million) by the fourth quarter of 2020.[14]

- In June 2020, the Organisation for Economic Co-operation and Development (OECD) estimated that unemployment would hit 11.7% in 2020,[15] without a second wave of Covid, and could peak at 14.8% with a second wave.[16]

The government's interim evaluations of its employment support schemes suggest that they played a major role in this success story. The internal evaluation of the CJRS (conducted jointly by the Treasury and HMRC), for example, found that around

3.4 million more individuals were in employment in May 2020 than would have been the case without the CJRS (which is more than 10% of the total number of people in employment). The evaluation also found that it prevented 16% of employers from closing permanently between the start of the pandemic and October 2020. There are also likely to have been indirect economic benefits not captured within the evaluation.[17]

The evaluation of the loan guarantee schemes, carried out by London Economics and Ipsos and commissioned by the British Business Bank (BBB), also found a sizeable positive impact of those policies. They estimated that anywhere between 150,000 and 500,000 businesses would have permanently ceased trading in 2020 without the Bounce Back Loan Scheme (BBLS), while an additional 5,000–21,000 borrowers under CBILS or the Coronavirus Large Business Interruption Loan Scheme (CLBILS) would have gone under without that scheme. Taken together, anywhere between 0.5 and 2.9 million jobs could have been lost if the schemes were not in place.[18]

The evaluations are subject to a high degree of uncertainty and cannot take account of the long-run effects of the schemes on, for example, labour force participation and productivity. Assessing these impacts will be a crucial ingredient of any full impact evaluation. It is welcome that the government has committed to carry this out in due course. However, the evidence so far shows that these schemes provided crucial financial support and a sense of safety to the private sector during what was a deeply distressing time.

Designing and implementing economic support programmes

The Treasury led on designing the economic support schemes, from the furlough scheme and support for the self-employed, to loans for struggling businesses. And it worked closely with other parts of government, in particular HMRC and the BBB, and with the private and third sectors, to design and deliver the schemes. (It is beyond the scope of this report but interviewees also told us that the Treasury worked well with the Department for Work and Pensions (DWP) to understand the capacity for the Universal Credit system to cope with more claimants and to quickly expand the support offered to them.)

The Treasury was not prepared for the pandemic

The UK government's understanding of the coronavirus pandemic, informed by the advice that ministers were receiving from the government's scientific advisers, changed rapidly during the early months of 2020. In a matter of weeks, decision makers at the centre of government shifted from believing that Covid was a disease largely affecting other countries, with limited impact on the UK, to believing that it was necessary to shut down most of the country to stop catastrophically high death rates.

Before March 2020, the Treasury – like many other departments outside health[19] – had done little preparation for the types of response to the pandemic that were needed from it.[20] But even though a pandemic (albeit a flu pandemic) was identified in the National Risk Register as one of the top risks facing the country[21] – and even though all departments were supposed to have plans in place for responding to the risks

identified – Clare Lombardelli, chief economic adviser to the Treasury, argued that there would have been little benefit to the Treasury preparing for the pandemic identified in the risk register. She told an audience at King's College London in June 2022:

> **If we had prepared for a pandemic, we would no doubt have had to make a series of assumptions about what that pandemic would be and we would have got most of them wrong... had we have done loads of work to prepare for a pandemic, I suspect probably the parameters we would have picked would have proved to be inaccurate and then you quite quickly move to reacting to what's in front of you.**[22]

Focusing on flu rather than a coronavirus outbreak did have a negative impact on preparedness in some areas of government – such as failing to stockpile gowns and visors and downplaying the importance of testing.[23] However, when it came to the economic impacts, the mechanisms through which the coronavirus pandemic affected the economy were similar to those that the US Congressional Budget Office (CBO) had outlined in its 2005 attempt to simulate the impact of an avian flu pandemic. It concluded that "the most important [economic] effects would be a sharp decline in demand as people avoided shopping malls, restaurants, and other public spaces, and a shrinking of labor supply as workers became ill or stayed home out of fear or to take care of others who were sick" and that "many businesses (such as restaurants and movie theaters) would probably suffer a falloff in demand because people would be afraid to patronize them or because the authorities would close them".[24]

The size of the output loss experienced during the Covid pandemic was also similar in size to that experienced during previous major pandemics (such as Spanish flu and Ebola).[25] It was also similar in size to the worst-case scenarios that the Oxford professor of economics, Simon Wren-Lewis, and co-authors set out in 2009: they estimated that a severe flu pandemic could reduce UK economic output by nearly 30%, factoring in workplace absenteeism caused by school closures and reduced demand as people avoid social contact.[26]

It would not have been possible to develop a specific plan that would have stood up to the uncertainties of how this specific pandemic was likely to develop. The Treasury did respond extremely quickly to the outbreak of coronavirus, with new economic support programmes for households and businesses. The speed and agility it showed is an important aspect of successful crisis response that should be sustained. But the options the department had open to it, and the ease with which they could be deployed, would likely have been improved had it taken the requirement to plan for risks identified in the National Risk Register more seriously before 2020.

As we explore further below, the economic support policies that the government was able to roll out were heavily influenced by the systems already in place and the data that was available. One of the lessons that the BBB has already drawn for future crises is that better pre-planning of delivery could have meant that the schemes were better designed; for example, avoiding some adverse effects on competition and giving greater opportunity to implement fraud prevention mechanisms from the outset.[27]

The Treasury has a relatively strong internal capacity to identify and manage fiscal and economic risks. The department established a fiscal risks group in the mid-2000s[28] and an economic risk group was formed in 2010, following the financial crisis. These groups identify and track risk indicators, horizon scan and assess the likelihood, probable impact and potential mitigation of relevant risks. The economic risk group meets every eight weeks and the fiscal risks group meets at least every quarter and as needed (having previously met monthly[29]).[30] The groups report to the department's executive management board on a quarterly basis. To increase capacity for risk monitoring within the Treasury's Economics Group, an economic risks team was established in late 2018 with responsibility for understanding and responding to key acute economic risks that the department identifies; these responsibilities had previously sat with the macro-economic strategy and co-ordination team.

One of the more recent mechanisms adopted to quantify important risks and encourage the Treasury to prepare for them was the OBR's biennial *Fiscal Risks Report* (FRR). This report was intended to analyse risks to the sustainability of the public finances.[31] The OBR first published an FRR in 2017, following an update to the Charter for Budget Responsibility in 2015 that included requirements for the OBR to produce fiscal risks reports, as well as long-term projections and reports on welfare trends. This has now been superseded by the annual *Fiscal Risks and Sustainability Report* (FRSR), which merges the FRR with the previously biennial *Fiscal Sustainability Report*.

The FRR – and now the FRSR – has served a useful function in setting out some of the key risks that could lead to the public finances evolving very differently from the OBR's central forecast. According to an OECD review, the OBR's FRR shows that it "has been at the forefront of this type of analysis. The FRR has had a positive reception by, and solicited much interest from, peer IFIs [independent fiscal institutions], governments in other countries, and international organisations."[32]

The requirement for the Treasury to formally respond is intended to ensure that the department thinks about and responds to these risks. The detail contained in the Treasury's response deteriorated substantially between 2018 and 2022.[*,33] This appears to have been a consequence of a change in the official and ministerial personnel involved. But it improved again in 2023, when the Treasury published a 20-page report setting out the department's response to the OBR's 2022 FRSR.[34] This is a positive development.

However, pre-pandemic editions of the FRR focused rather narrowly on traditional economic risks, such as low growth in potential output, recessions, financial crises and the fiscal impacts of digitalisation.[35] As a result, these reports did not encourage the Treasury to look at economic threats from non-economic sources. This has been addressed to some extent in the last two fiscal risks reports, which have examined – among other risks – risks to the public finances presented by climate change[36] and the risks from heightened geopolitical tensions.[37]

* The Treasury published a very detailed, 140-page response to the first FRR that the OBR produced in 2017. But the chancellor provided only a short written ministerial statement in response to the 2019 report, and a five-page letter in response to the 2021 report.

The early phase of the crisis played to the Treasury's strengths

The Treasury, including the chancellor, had little input into the decision to lock the country down. Sunak was not present at the COBR meeting on 20 March 2020 at which the decision was finally taken to shut pubs and restaurants; instead, the financial secretary, Jesse Norman, deputised for him. Rightly or wrongly – and many of our interviewees felt rightly given the time that such an analysis would have taken – no cost benefit analysis had been done by this point of the economic and health effects of lockdowns or alternative approaches. As George Parker and colleagues reported in the *Financial Times* in July 2020: "Only Jesse Norman, a Treasury minister, raised any doubts, asking whether there had been any cost-benefit analysis of the economic and health impacts of lockdown or consideration of less onerous alternatives. Around the room there were blank looks: the decision had been taken."[38]

Once the prime minister, Boris Johnson, had made the decision to lock the country down, the Treasury's task in those first weeks and months was to work out how to limit the negative effects on the economy and to do so in a way that supported public health objectives – that is, by encouraging people to stay at home and avoid transmitting coronavirus. The Treasury's response was successful partly because it was big. As one interviewee put it: "The answer to the question 'what is the right amount?' is 'what is it that settles expectations?'" In other words, ministers needed to do enough to reassure the private sector that the government would protect it. This was very different from the Treasury's usual approach of questioning the value of every pound spent, although not dissimilar from the way the department has approached other crises, including the rapid action taken to shore up the banking sector in 2008.

The main plank of the economic policy response was the furlough scheme. Although Treasury officials had previously examined similar types of short-time work schemes,[39] which have existed for many years in some other European countries, they had always decided it was not the best mechanism to use in the UK. Officials therefore effectively devised and worked out how to implement the scheme in a matter of days. In contrast, the various business loan schemes built more directly on previous models, such as those used during the financial crisis.

The need for quick, novel thinking played to the Treasury's strengths. It has a bright, capable, enthusiastic, flexible and generally young workforce that responded well to the need for new thinking and rapid action. As one interviewee put it: "The Treasury lives for big events." In designing the schemes, the department was also able to draw on officials' existing knowledge of the labour market, tax policy and previous crises. Staff were quickly redeployed across the department to bolster the teams working on the economic support programmes.[40,41]

The Treasury's rapid and expansive action allowed the government to impose a widespread shutdown of the economy and restrictions on social interactions to curb the spread of Covid while imposing relatively little damage on businesses and people's jobs and finances. This crucially bought the government time to gather more information about the disease and the health system's ability to cope with it.

Clear objectives helped speed up policy design and implementation and reassure the public

As a previous Institute for Government report highlighted, the process of designing the economic support schemes at the outset of the pandemic was helped by ministers being very clear about what their objectives were.[42] Once Johnson had decided that the economy should be locked down, the chancellor's objective was to prevent this temporary shutdown turning into permanent economic scars.

From the time of the budget, Sunak had made a clear statement that he would "do whatever it takes to support the economy".[43] That commitment reassured households and businesses in the face of great uncertainty, buying the government some time to design the precise response.[44] Clarity from the government also helped the Bank of England to tailor its monetary policy response appropriately, and similar commitments from the bank to "take all further necessary steps to support the UK economy and financial system"[45] helped reassure businesses, households and financial markets.

Beyond his broad commitment, the chancellor had some more specific objectives. The first and clearest objective was to prevent widespread unemployment, preserve employer–employee links and so enable businesses to get back up and running quickly when restrictions were eased. This objective gave rise to the furlough scheme, inspired by the German *Kurzarbeit* policy.

The second objective was to provide a similar type of income support for self-employed people, particularly those who were most reliant on their self-employment income.[46] In part this was motivated by a desire to limit the long-lasting economic damage that could have been caused by self-employed people being forced to close their operations. But it was also motivated by a desire to provide equity of treatment to employees and the self-employed. These objectives led to the Self-Employment Income Support Scheme (SEISS).

The final objective was to ensure businesses had adequate cash flow. This led to the creation of various loan and grant schemes, including the loan guarantee schemes, grants and regulatory changes described in greater detail above.

Ministers' objectives were clear to officials, in part because ministers worked unusually closely with the delivery officials as the schemes were being designed. Ministers spent significant time and effort revising the schemes with policy and delivery officials to ensure they reached a feasible solution that met their objectives. That had several benefits: it helped ministers and officials make decisions about how to trade off speed against risk; it made it easier to explain policy design choices to the public; and it helped officials to sequence and prioritise the schemes. It also helped avoid the need for major revisions or U-turns after the schemes were announced.

In the early phase of the pandemic, it was clear that officials needed to prioritise speed over precise targeting of the measures, particularly in support for employees and the self-employed, while minimising as far as possible the opportunities for fraud. Making the schemes more targeted would have made them more complicated, slowed down their introduction, created greater opportunities for fraud and may have undermined

confidence that the government would do "whatever it takes". For example, to avoid fraud and allow the self-employment scheme to be established quickly, SEISS was initially not available to the newly self-employed, since those people had not filed a tax return covering their self-employed earnings and so HMRC had no information with which to assess their past self-employment income. The Treasury and HMRC interim evaluation of SEISS states that "the lack of up-to-date and verifiable data was therefore a constraint [on policy design]".[47]

In some instances, where it was possible to target the schemes without compromising speed, this was done. For example, the furlough scheme was designed such that employers could only claim the subsidy for employees who were not working, the aim being to ensure employers only claimed if they really needed to. This contrasted with similar wage-subsidy schemes offered in some other countries, like Australia, which provided employers with a subsidy regardless of whether the employee was working.[48] In other cases, the Treasury told us that proposals to change the design of policies – for example, expanding the scope of eligible individuals – were rejected by ministers on the basis of data and/or delivery limitations, including increasing fraud risk . An example discussed further below was the hard thresholds for eligibility for SEISS (those who earned £1 more than £50,000 in trading profits could not claim anything). Officials told us that introducing a taper was considered but rejected as too complicated for both claimants and HMRC to administer, and would have led to a delay in payments.

The evolving portfolio of business loans on offer reflected changing ministerial priorities. Ministers and officials were initially concerned about the risk of default on business loans and so offered only an 80% government guarantee of CBILS loans because they wanted to ensure banks continued to have an incentive to do due diligence checks on borrowers. However, the chancellor came under pressure to do more as evidence began to emerge of the difficulties many businesses were facing in accessing loans.[49] This eventually led to the government introducing the BBLS, despite the acknowledged risk of high default rates.

As time went on – and more information was gathered on the nature of coronavirus, how effective different measures were at restricting the spread, and the potential side-effects of prolonged public health restrictions – the government's response through public health and other measures needed to become more nuanced. It is too simplistic to say that there was a straight trade-off between health and economics. But there were trade-offs to be made and some options that potentially offered more or less attractive trade-offs; for example, the banning of different types of face-to-face activities offered different benefits in terms of limiting the spread of the disease and different costs in terms of the economic activity and other positives foregone.

But after the early acute phase of the pandemic, the government was much less clear – both in public and in private – about what the objectives were.[50,51,52] This lack of clarity hampered the ability of the rest of government to direct its efforts most effectively. In the next chapter we describe some of the shortcomings of the Treasury's approach to working with other departments and the centre of government to synthesise knowledge. One of the factors that contributed to this was a lack of clarity from the prime minister about what his overarching objectives were.

Factoring in delivery from the start helped identify the best available solutions and ensure they could be implemented quickly and well...

Officials responsible for the delivery of the furlough scheme, SEISS and some of the loan schemes were involved in the design of the policies right from the start, which helped ensure they could be implemented quickly.

Treasury ministers were more interested than usual in hearing directly from those who would have to implement the schemes, rather than just from Treasury policy officials.[53] The need for a rapid response also led to much closer working between policy officials in the Treasury and delivery officials, particularly in HMRC. Having delivery officials in the room allowed ministers to hear from and quiz them directly about deliverability and risks. And officials responsible for delivery were better able to understand what ministers wanted, having heard from them directly. Far from slowing down the roll-out of the schemes, involving delivery experts from the start helped anticipate and avoid problems.

The ability to get the furlough scheme up and running so quickly depended crucially on the early involvement of officials from HMRC, who understood what was feasible given the information and systems they had. It was also essential that the team responsible for managing HMRC's IT systems was able and willing to act quickly to repurpose the systems to allow furlough payments to be made.

The Treasury also worked well with the Bank of England to quickly provide a lending facility for the largest companies (the Covid-19 Corporate Financing Facility, or CCFF), which the bank delivered. This was helped by there being good existing working relationships between officials at the bank and the Treasury. It also built on a previous scheme (the commercial paper scheme) that had been used early in the financial crisis.[54]

... but there were problems when this did not happen

There were some areas, however, in which other parts of government that were crucial for the delivery and management of some of the schemes were not involved early enough or consulted extensively enough over the design of the schemes. This was particularly an issue for business support schemes. In theory, these schemes were the responsibility of the Department for Business, Energy and Industrial Strategy (BEIS), but in practice the Treasury designed the business loans and business grants programmes and then handed them to BEIS to deliver and monitor them. Poor communication between the Treasury and BEIS caused problems. Interviewees said that one of the reasons for more open working with HMRC than with BEIS was because HMRC is a non-ministerial department, whereas BEIS has its own minister.

The lack of communication between the Treasury and BEIS undermined effective public communication around new policies. BEIS officials were given little information about CBILS before it was announced. This hampered their ability to explain the scheme effectively to businesses, who inevitably looked to BEIS for further information as soon as the scheme was announced. External stakeholders reported their occasional frustration that the "vexed" relationship between BEIS and the Treasury meant insights from conversations they had had with one department were

not shared with the other. The consequence was that factors relevant to decisions about how to adapt economic support schemes were sometimes not shared across government in the way that external stakeholders would have expected.

Failure to involve BEIS officials in the design of business support schemes also risked worse-than-necessary value for money. For example, BEIS was responsible for managing the £22.6bn offered to businesses through a series of local authority run grants (including the Retail, Hospitality and Leisure Grant Fund).[55] But the Treasury did not involve BEIS in the design of the scheme. This led to an important oversight, with the Treasury failing to allocate any money for the administration of these schemes, even though the sums were equivalent to half of some local authorities' typical annual budgets.[56] Additional funding to cover administrative costs was allocated in BEIS's 'main estimates', which were published on 4 May 2020, but £6bn of grants had already been handed out by mid-April.[57] This delay in allocating funding to administer the schemes meant that there was no resource available in the early months to monitor or evaluate the effectiveness and value for money of the scheme, missing opportunities to iterate its design and improve its value for money. As the National Audit Office has noted, the Treasury also did not notify local authorities of the new schemes until they were announced publicly, "creating significant practical challenges as they struggled to respond", and the lack of local authority involvement also meant that grant schemes "were sometimes launched with practical issues that took time to resolve fully".[58]

There has been a lot of criticism of the level of fraud within the business loan schemes – particularly the BBLS – but most of our interviewees, both from within and outside government, felt this was misplaced. The potential for fraud was an inherent consequence of the 100% government guarantee and streamlined application process for bounce back loans, which allowed private lenders to drop many of the usual due diligence checks they would do on borrowers.* Ministers took this as an acknowledged and calculated risk in return for dramatically speeding up the approval of loan applications compared with CBILS. Officials at the BBB and BEIS raised the risk of fraud with ministers, highlighting the risk it posed to value for money, but acknowledged that ministers may want to take the risk anyway to increase the speed at which the loans could be issued.

Confused lines of accountability for the BBB hampered the roll-out and scrutiny of the loan schemes

For largely idiosyncratic reasons relating to the dynamics within the Conservative–Liberal Democrat coalition government, the BBB was established as, and has remained, an arm's-length body of BEIS, rather than reporting to the Treasury as some other publicly run financial institutions (such as the UK Infrastructure Bank) do. This somewhat hampered the design and roll-out of the business loan schemes because the ministerial impetus for the schemes came largely from the Treasury and the work to design them was done mainly through consultation between the Treasury and the

* A letter from the BEIS acting permanent secretary, Sam Beckett, to the business secretary in July 2020, asking for a ministerial direction on the introduction of the BBLS, noted that the risk of fraud and error in the scheme was "very high". Department for Business, Energy and Industrial Strategy, 'Coronavirus (COVID-19): ministerial direction for the coronavirus Bounce Back Loan Scheme', HM Government, 10 June 2020, retrieved 18 April 2023, www.gov.uk/government/publications/coronavirus-covid-19-ministerial-direction-for-the-coronavirus-bounce-back-loan-scheme

BBB. But formally BEIS was responsible for the schemes. That meant that it was the BEIS accounting officer who had to satisfy herself of the merits of the schemes and ultimately ask for ministerial directions on the schemes, even though neither her department nor her minister had had close involvement in their design.

These confused lines of accountability have also hampered parliamentary scrutiny of the schemes. Formally, accounting officer responsibilities (that is, the responsibility for ensuring that any spending plans are legal, meet parliamentary control procedures, offer value for money and are feasible) sit with the delivery department. However, for the business support schemes, officials in the delivery department (BEIS) had had little involvement in the design of the schemes, leaving them poorly placed to account to parliament and others for their success. This led to a confusing situation for parliamentary select committees, who often did not know who to call in when scrutinising the loan schemes: the chancellor made many of the major decisions on scheme design (given their importance to the macro economy), yet BEIS was ultimately responsible for monitoring the schemes' performance. This problem was not unique to the business support schemes – similar problems were noted in earlier Institute for Government work on the role of public health bodies during the pandemic[59] – but it did hamper proper scrutiny of the decisions that were made.

The Treasury engaged well with trades unions, business groups and large financial providers...

Previous Institute for Government research has highlighted how the Treasury engaged closely with trade unions and business representative organisations on core aspects of scheme design.[60] For example, the Treasury closely consulted major business representative organisations and the Trades Union Congress (TUC) about, for instance, the level of generosity of the schemes. While the Treasury had existing relationships with these groups, the close engagement required to develop the pandemic support policies largely relied on new forums – particularly as the policy development had to be done remotely.

Key external stakeholders invited to a roundtable held at the Institute for Government in January 2023 echoed these findings from earlier research. Representatives from trades unions, business groups and the financial sector said that the Treasury's engagement with them was unusually good, that they felt listened to. They felt their input into the process improved the design of the schemes and that, far from slowing down the policy development process (which is an argument that is often made for not consulting widely on policies that require rapid development), their input had helped to anticipate problems and build early support for the policies.

Participants pointed to several examples of beneficial changes that the Treasury made to the support schemes that they felt resulted, at least in part, from the engagement that they had with the Treasury and other parts of government:

- changes to the furlough scheme in June 2020 to allow employees on statutory parental leave who returned to work after a long period of absence to be furloughed[61]

- the introduction of flexible furlough from July 2020, which allowed businesses to bring back furloughed employees on a part-time basis, with the government continuing to subsidise wages for hours not worked[62]

- with many business groups being concerned by the slow pace of CBILS loans being approved in the early stages of the pandemic, the government responding by introducing the BBLS, which banks could approve much faster because it did not involve credit assessments (made possible by a 100% government guarantee), which was welcomed by these groups.

In designing the loan schemes, the Treasury and the BBB worked with a smaller group of financial sector organisations, including only large lending institutions, to develop a loan programme that could be rolled out quickly.[63] Involving only a small group of large lenders helped to ensure confidentiality and that a scheme that could deliver high volumes of loans was implemented quickly. But excluding smaller lenders did lead to some problems. The design of the scheme that was chosen severely compromised the business models of some niche lenders – design flaws that were hard to address once the scheme had been announced – which reduced competition in the market.[64]

At the beginning of the pandemic, the Treasury also drew on Bank of England analysis of corporate vulnerability to inform its understanding of how acute the need for cash-flow financing was.

Close engagement with key stakeholders also brought many benefits for the government. Officials agreed that the feedback they received helped them to understand problems with the schemes and led to meaningful improvements in design. It also meant that private sector stakeholders had a comprehensive understanding of how the schemes worked and were broadly supportive of them. This meant they could act effectively as 'policy intermediaries', communicating with their own stakeholders (employers and workers) about eligibility and how to make claims.

... and external experts during the early stages of the pandemic

As well as engaging with the users of economic support policies via unions and business groups, we were also told that the Treasury engaged with a range of external experts – including think tanks, academics and tax and finance practitioners – to understand issues with the schemes and come up with solutions. The quality of this engagement was mixed and took different forms.

For the design of the labour market schemes SEISS and CJRS, the Treasury and HMRC established external expert panels. These involved technical accounting experts (from organisations including the Chartered Institute of Taxation, the Association of Taxation Technicians and the Institute of Chartered Accountants in England and Wales) as well as employers and employer groups (such as the Federation of Small Businesses). According to the government's own interim evaluation of SEISS, these expert panels "supported the development of scheme legislation, guidance and customer communications, and constructively influenced the policy and process design".[65] Again, those from outside of government who attended our roundtable agreed that the engagement was particularly good.

The Treasury itself also engaged academics on some broader policy design issues. They engaged not only with established contacts, such as Lord Stern, but also others who they had not previously spoken to. The principal way in which this happened was via webinars organised jointly with the Royal Economic Society (RES, a professional association for economists). These webinars were private, but the RES replicated much of the content presented to the Treasury in public events. These can be found online[66] and covered topics such as:

- education and lockdown: skills, transitions and inequalities[67]
- European perspectives on economic policies during a pandemic, which provided insights about how other countries were approaching the economic policy response[68]
- the challenges involved in building a strong, inclusive, sustainable and resilient recovery from the Covid crisis (a mini-series of webinars hosted by Professor Nicholas Stern).[69]

There were also separate, more informal, discussions with some think tanks – in particular, the Resolution Foundation and the Institute for Fiscal Studies. These sessions helped the Treasury to think about the approach it was taking to economic policy and provided it with a wealth of evidence and analysis that it would likely not have had the capacity to produce internally. Running the sessions in conjunction with the RES also meant that the Treasury was able to access the most relevant academic research. A common problem when government engages academia on new issues is not knowing who the right people to involve are, and officials can instead resort to relying on the 'usual suspects'. But this time, the Treasury provided the RES with a list of issues that it was interested in and let the RES use its network to find the most relevant people.

This style of engagement was certainly an improvement on how the Treasury typically engages with external experts (discussed in more detail below). But we did hear some criticism of the approach taken. The first was that the webinar series was relatively short-lived, taking place mainly between May and August 2020, although there were a few one-off sessions separate from these RES webinars (including one on epi-macro modelling) at other points in time. External experts suggested that this sort of arrangement should have continued throughout the pandemic, so that the Treasury could continue to use insights from these sessions to improve its approach to economic policy. Indeed, the insights from research would have become more and more robust and useful as time went on.

A second concern was that communication in the sessions went in only one direction. The Treasury would pose some questions, listen to academics' presentations and quiz them further. At no point did the Treasury expose its own thinking and analysis to scrutiny from academic experts. This is not unusual from the Treasury – while the department has in the past published working papers setting out its analysis, this has not happened for more than a decade – but it does hinder the development and testing of good analysis. External experts suggested to us that a more open

dialogue, which is accepted best practice in academia, would have been a much better approach that would have been more likely to improve the Treasury's understanding and analysis. The Treasury's approach to (not) sharing its internal analysis or inviting external scrutiny is discussed in greater depth in Chapter 3.

Beyond the seminars that the Treasury held with the RES, external experts in universities and think tanks said that they did have some engagement with the Treasury on the approach to economic policy design. This happened on a very informal and ad hoc basis, typically relying on existing personal relationships. These interactions were no doubt helpful to the Treasury but ad hoc engagement is not the best way to make use of all of the expertise that sits in universities and research organisations across the country.

This approach contrasts starkly with the very formal structures (including SAGE – the Scientific Advisory Group for Emergencies – and its subgroups) that were established to channel the most up-to-date and relevant health-related research into the centre of government. The rationale for SAGE is that, in emergencies, it is important to access scientific expertise and capacity that are not needed and do not ordinarily exist in government in 'normal' times. The same logic applies to economic expertise: while some such expertise and capacity does exist in government, there will always be a deeper pool outside government that needs to be drawn on, especially in emergencies. The shortcomings in how the Treasury brought in and used external expertise are also discussed in greater detail later in Chapter 3.

New policies were built on existing infrastructure and lessons from previous crises, which constrained their reach and effectiveness

As we explained above, the Treasury had deliberately decided not to prepare for a pandemic. To construct its economic support package, it therefore had to rely on existing mechanisms and systems, or on solutions that could be deployed quickly.

Interviewees for this project highlighted that there had been little innovation in policy mechanisms since the financial crisis, so many of the tools used were ones that were developed then in response to a very different type of shock. Those interviewed for the BBB's evaluation of its loan schemes made a similar observation: "Policy stakeholders indicated that there had been limited planning within government around what economic policy levers to use when faced with a national emergency with macroeconomic impacts of far greater significance than typical recessions."[70]

As detailed in Box 1, the Covid loan guarantee schemes (CBILS, CLBILS, BBLS and CCFF) were all built on previous schemes, including the Enterprise Finance Guarantee. The quick development of these schemes during the pandemic was helped by work that had been done in preparation for the prospect of a no-deal Brexit in 2019, when the government had also anticipated the potential need to support businesses through a bumpy transition.[71] But these schemes were not designed for the type of fast and huge response that was required for the shock that Covid posed, and attendees at our roundtable on the economic policy response suggested that this partly explained the slow issuance of loans under CBILS in the first weeks of the pandemic.

To deliver the labour market support schemes, the government had to rely on the tax system. Unsurprisingly, the tax system was not designed with the objective of being able to deliver a huge amount of welfare support. This posed particular issues for the design of SEISS. As discussed earlier, the primary objective of SEISS was to provide broadly equivalent support to self-employed individuals as had been provided to employees through the CJRS. However, as the interim evaluation of SEISS stated:

> **Differences from the CJRS reflected the characteristics of the population, the nature of self-employment and the availability of data. Whereas data for employers and employees is relatively detailed, well populated and is updated in real time through the PAYE system; data held for self-employed individuals is not as up to date.**[72]

To minimise fraud risks, the amount of support offered under the scheme was determined using self-assessment tax returns: the tax returns provided the government with a reliable source of information on past earnings from self-employment. However, because of the lag between the end of the tax year and the date by which individuals must file their self-assessment tax return, officials determined that the eligibility must be based on returns for the 2018/19 tax year, therefore excluding all of those who had become self-employed since April 2019 from the first three SEISS grants. Had HMRC had more timely information on self-employed people's incomes, the government could have helped a wider group of people more quickly without additional fraud risks. Such information will be available once HMRC's Making Tax Digital programme is fully implemented. This project, which was originally due to be implemented by 2020, is now not due to be fully rolled out until April 2027.

Box 1: How Covid economic support policies built on existing infrastructure

Loan guarantee schemes

CBILS was built on the existing Enterprise Finance Guarantee (EFG) programme, which facilitates lending to smaller businesses that are viable but unable to obtain finance because they do not have enough collateral.[73] The government set up the programme in 2009 and the BBB took over the management of it when it was established in 2014. Lenders that were part of the EFG programme had to go through an accreditation process. This process was streamlined for the Covid loan schemes, but it still took some time to accredit new lenders. The use of lenders who had already been accredited under the EFG was crucial to the speedy delivery of CBILS – setting up a new scheme from scratch would have taken much longer. On average the accreditation process took 66 days to complete during the pandemic.[74] It was only possible to issue loans quickly in the initial phase because of the work that had been previously undertaken on the EFG.

The Covid-19 Corporate Financing Facility (CCFF) was based on a 'commercial paper' scheme, which had formed part of the Asset Purchase Facility (APF) that the Bank of England launched in February 2009 to support businesses in the

wake of the financial crisis. These schemes operated by purchasing commercial paper, which is an (unsecured) debt instrument that larger businesses commonly issue to manage their day-to-day cash needs, such as payroll and the payment of suppliers. The concern at the start of the pandemic, as during the financial crisis, was that market interest rates were too high for commercial paper, creating a risk to firms' financial stability, so the facility was essentially a Bank of England commitment to buy up commercial paper at below market rates. Officials told us that the CCFF was able to be set up so quickly because the Bank of England had already worked on the scheme design and had experience in deploying it during the financial crisis.

Employment support schemes

The chancellor's objective was to prevent widespread unemployment, preserve employer–employee links and so enable businesses to get back up and running quickly when restrictions were eased. It was not possible to achieve these objectives through the standard welfare system because that only covers a specific portion of the working population. So, to achieve its employment-related objectives, the government turned to the system that does hold information on the working population: the tax system. Differences in how the employment support schemes worked for distinct groups in the population therefore depended on how those groups get taxed.

Those in employment pay their income tax and National Insurance through the Pay as You Earn (PAYE) system. Under PAYE, information about an employee's tax and deductions and – crucially – their income is transmitted to HMRC every time they are paid. This system enabled the Treasury and HMRC to implement the Coronavirus Job Retention Scheme (CJRS), under which employers could apply for a grant to pay the wages of employees, as described above. The PAYE system enabled compliance checks to be built into the system and minimised information requirements for applications.

Delivering support to those outside the PAYE system, though, was more complicated. That is because the tax system is largely 12–18 months behind events. Someone could start a business in April of, say, 2019 and their first tax return would not be due until January 2021. It was therefore not possible to implement compliance checks for those who had become 'recently' self-employed (that is, since the start of April 2019), so the decision was taken to exclude this group from the Self-Employment Income Support Scheme (SEISS). HMRC also only collects the information that is necessary for processing a tax return. That meant that other information that would have been useful for designing SEISS – such as whether someone was receiving dividends (in lieu of labour income) from a closely held company – was not routinely collected, which ultimately contributed to some of the 'hard edges' in the schemes, which we describe below.

Departmental capacity, as well as the available data and systems, limited the reach and effectiveness of support policies

The issue of exclusions from government support schemes due to eligibility reasons was salient throughout the pandemic. Think tanks, MPs and campaigners all put pressure on the Treasury and other parts of government to amend the schemes in order to close gaps in support. While those excluded from the CJRS and SEISS were eligible for other aspects of government support – such as means-tested benefits and business loans – these were far less generous than the other schemes.

There are examples of where the Treasury and delivery departments responded to these concerns and amended the schemes. Some examples of this include the following:

- The second SEISS grant made provision for claims from new parents and reservists to claim (for the first grant as well as the second) if they had been deemed ineligible for the first grant, either because they were taking time out for childcare or because they received employed income from the Ministry of Defence (MoD) in the 2018/19 tax year.

- From the fourth SEISS grant onwards, new claimants could use their self-assessment tax return for the 2019/20 tax year, meaning newly self-employed people could receive SEISS.

- Changes were made to the furlough scheme – described in more detail above – that allowed businesses to bring back employees on a part-time basis and to furlough employees on long-term parental leave.

However, there are some examples of gaps that persisted throughout the pandemic and changes to the support schemes did not remedy them. From our research interviews and the government's interim evaluations of its own policies, this was due to judgments made about how much additional fraud risk ministers and officials were willing to take, given the constraints that data, system and deliverability concerns posed. The Treasury told us that it also reflected ministerial decisions about the acceptability or otherwise of the hard edges that would have been introduced by some of the options for tighter targeting: for example, it would have been possible in theory to use VAT returns data to target support to those businesses that had suffered larger falls in sales. However, not all businesses are required to submit a VAT return (specifically those with turnover of less than £85,000 per annum, which in February 2020 equated to 38% of employers). In addition, those that do submit their VAT returns do so at different times of the year (there are three separate reporting cycles). So for these reasons, using VAT returns would have introduced inequity between otherwise similar businesses.

Possibly one of the most salient of the 'excluded' groups was limited company directors who take income from their companies predominantly in the form of dividends rather than a salary. The Treasury Select Committee and a wide range of external organisations pushed the Treasury to extend support to this group.

A coalition of those organisations put together a proposal for a 'Directors' Income Support Scheme' (DISS) for the government's consideration.[75] It was possible for the government to put support in place for this group, as it would have been for the vast majority of those who ended up being excluded. Ultimately, however, the chancellor decided not to proceed with such a scheme because he judged that it represented too high a risk of fraud and error. In response to the select committee's report on gaps in economic support, the chancellor said:

> **The principles underlying the Government's approach to CJRS and the SEISS are to target support to those who need it most and protect taxpayers' money against error and fraud... [we] do not have data to verify what parts of a Director's income to support... [and] relying on self-certification to identify Directors or determine income sources could open any scheme up to unacceptable levels of fraud and error.**[76]

Ultimately, Sunak had concluded that, largely because data limitations meant that the checks present in SEISS and CJRS could not happen within a scheme like DISS, the risk was too high: "A draft error and fraud planning assumption, based on nearest proxies, suggests that the error and fraud range for the DISS is wide and could be as high as 20%."[77] It is not that it was not possible to close the gap – devolved administrations introduced schemes such as the Northern Ireland Directors' Support Scheme[78] – but ministers in the UK government decided that they did not want to take the additional fraud risk associated with it.

This shows how using delivery mechanisms based on systems and data constructed for other purposes (responding to a financial crisis or collecting tax) constrained the ability of economic support policy to deliver support to some of those who needed it. Had the Treasury considered and planned for a macro-economic crisis of the variety and scale of the pandemic, it might have been possible to design effective and implementable schemes to fill such gaps.

There are clear parallels here with the design of financial support policies in response to the energy crisis, which was triggered by Russia's invasion of Ukraine. The initial focus then was on providing financial support to those who might struggle to pay their energy bills. To deliver this quickly, the government opted to use the welfare and tax systems to direct money to people (through one-off payments to those in receipt of benefits and council tax rebates, respectively). But this is not the best way to target those at risk of entering fuel poverty, as it left large gaps in support for some groups. Universal support was also offered but this ran the risk of spreading money too thinly. Delivering a more sophisticated set of support would have taken more time: a social tariff,[79] for example, would require energy suppliers and HMRC to share data with each other and be able to match up individual records, which is a potentially lengthy and difficult process.

In the interviews and roundtables we conducted for this research, participants provided other examples of how existing systems and data limited the policy tools available to the government, given that there was, rightly, a limit to the amount of fraud risk that ministers were willing to accept. For example, the government's ability to

limit support to employees in particular parts of the country, when there were locally differentiated public health restrictions, was limited by the fact that government does not hold any information about where employees work. The government also did not have comprehensive, up-to-date information on which sector each business or self-employed person works in, which also limited the ability to target support on 'affected' sectors. The UK government also could not send payments to households in the way the US government did because the UK tax system, which is individual-based, generates almost no information on household structures – such information is only available for those who receive benefits, who are assessed on a household basis.[80]

There are good reasons why the government does not require individuals and businesses to provide information that is not needed for the normal operation of the tax and benefit systems – doing so would create costs for the public and private sectors. In response to a recent HMRC consultation on improving the data HMRC collects on taxpayers,[81] tax practitioners raised concerns about the burdens that would be imposed particularly on self-employed people if HMRC required additional information to be provided.

The experience of the pandemic showed that there are clear potential benefits to the government having more detailed information on businesses and households to enable it to target support more effectively when things go wrong. This could offer benefits to the public purse – by reducing fraud and making it easier to target just those in need, rather than offering universal support – and to businesses and households, by reducing the likelihood that they are left out of government support or get only limited support. But since it is impossible to predict what the next crisis will be and thus exactly what information would be most useful, these benefits would need to be weighed against the costs for the government and the private sector of collecting more information just in case.

Further improvements to economic support schemes would have been possible if the Treasury had not suffered from optimism bias

Another variable that will have influenced the government's decisions on any changes to economic support policies is how long it thought the policies would have to remain in place: that expectation will have affected whether or not ministers and officials judged that expending extra effort and resources on making changes to a particular scheme would have been worthwhile.

Public health measures largely dictated the timing of economic support policies, since the aim of these policies was mainly to cushion the impact of public health restrictions. However, the Treasury still needed (and had the freedom) to anticipate how those restrictions might evolve – drawing on information from the government's scientific advisers – and prepare for the possibility of extending or withdrawing the support as appropriate.

What was possible with existing data and systems – combined with ministers' risk appetite – did bind what the Treasury could do with its support schemes. But optimism bias is likely to have played a role too. It would have been possible to remedy some

of the problems with the schemes in a way that did not substantially increase the risk of fraud and error but may have required extra resources (as we outline below). The actions of the Treasury, at least through 2020, suggest that the department (or at least ministers, who were ultimately responsible for the decisions made) continually thought that the pandemic, and therefore the support schemes, were only going to persist for a few more months. Many members of the public and some in the economics profession shared this optimism but, as we argue in the next chapter, the government's scientific advisers did not share it. It was also not consistent with the downside scenarios that the OBR sketched out in July[82] and November 2020.[83]

Some of the 'hard edges' in some of the support schemes were never removed, even though some would have been relatively easy to address. Ministers also gave very little notice for the extensions to the support schemes in the autumn of 2020, creating uncertainty for businesses and workers.

Some easy-to-make marginal improvements to the support schemes were not implemented

As an example, one of the gaps in support that was commonly cited was for self-employed people with trading profits above £50,000. This group received nothing, whereas those just below that threshold were entitled to the full SEISS payment. This introduced a very 'hard edge' into the system, which many believed was unjust. The government's own evaluation of the SEISS scheme found that this did have an impact for those just on the wrong side of the threshold:

> **Some workers either side of the eligibility thresholds had contrasting outcomes due to constraints on the scheme's design. Some individuals assessed as ineligible were only marginally different to those who were potentially eligible for the grants (for example if they had just over £50,000 of trading profits) and saw worse outcomes than those who were able to claim the SEISS.**[84]

In recognition of this, the Treasury Select Committee endorsed a proposal from the Institute for Fiscal Studies[85] in January 2021 to provide a tapered form of support to those with profits between £50,000 and £100,000, which would still have avoided giving out lots of money to those on already high incomes (the intention of the initial threshold) without the 'hard edges' present in the initial design.

Ultimately, the chancellor rejected this suggestion because of the "complexity of introducing and administering such a taper",[86] and because it would only benefit a small number of individuals. Some expressed frustration at this. Paul Johnson, director of the Institute for Fiscal Studies, said: "That the combined efforts of HMRC and Treasury could not come up with anything that was one iota better than something that was clearly, to be kind to it, extremely rough justice back in the spring was, as I said, quite disappointing."[87] Interviewees told us that the Treasury engaged very little with the downside scenarios that, for example, the OBR set out in summer and autumn 2020. An unjustified confidence that these negative scenarios would not transpire would have led ministers to under-weight the potential benefits of filling some of the gaps in the support programmes.

Eat Out to Help Out relied on confidence that there would be no second wave

As we discuss in more detail below, the Eat Out to Help Out policy, announced in July 2020 and in place during August, encouraged people to go to eat in restaurants. This policy explicitly encouraged face-to-face interaction in public places, rather than just offering cash support to hospitality businesses or their employees. The design of the policy suggests the Treasury was confident that there was little risk of a second wave of infections and had little danger that the policy might contribute to that. This belief was out of line with understanding at that time among the government's health advisers and many others.[88]

In autumn 2020, schemes were extended with very little notice

In the initial stage of the pandemic, policies were designed quickly to be delivered as soon as possible, with the belief that they would only be needed for a matter of months. The initial CJRS, for example, was expected to be in place only from March to May 2020. It was then extended several times as public health restrictions were extended:[89]

- On 17 April 2020, around a month after the initial announcement, Sunak announced that the scheme would run for a further month until the end of June.

- Then, on 12 May, the chancellor announced that the scheme would instead remain open until the end of October. Over the summer the Treasury announced its plan for the CJRS to be replaced by a less generous Job Support Scheme (JSS) from 31 October, as it expected restrictions to ease.

- As it turned out, the UK was hit by a second wave and on 31 October, the day that the CJRS was due to expire, Prime Minister Johnson announced a second lockdown. That day the chancellor also announced – with only hours until it was set to expire – that the CJRS would be extended again, this time until the end of December.

- Then, on 5 November, the chancellor announced that the CJRS would remain in place until 31 March 2021.

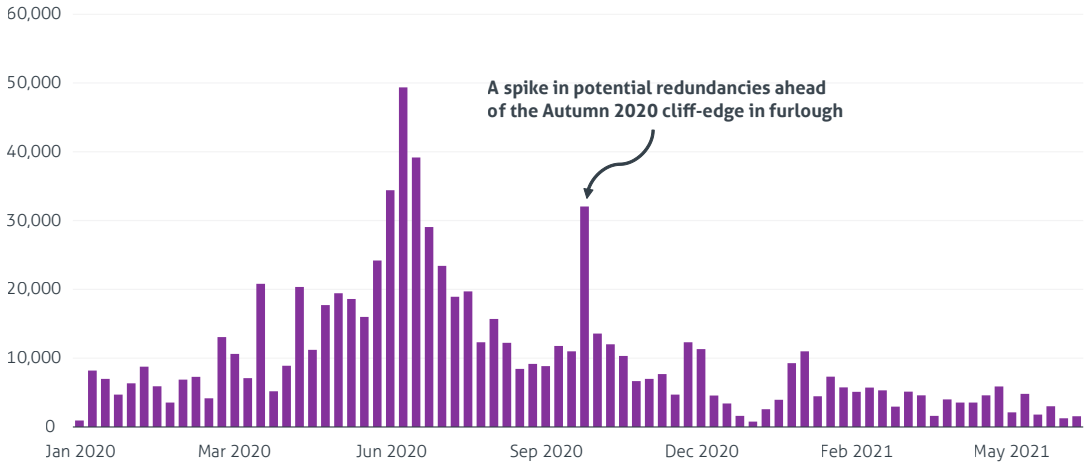
- And then, on 17 November, he announced that it would stay in place until 30 April 2021.

- Finally, at the spring budget on 3 March 2021, the chancellor announced that the CJRS would remain in place for a further five months, expiring on 30 September 2021, although the government's contribution to wages would reduce from 1 July 2021.

This timeline illustrates the uncertainty that many workers and businesses were facing about the support that they would be receiving as the government went through successive rounds of updates to public health restrictions. This stemmed from the uncertainty around the path of coronavirus and thus the necessary public health restrictions. However, there were actions that Treasury ministers could have taken that would have reduced uncertainty for the private sector. In particular, they could have been clearer that support would be extended in the event of further restrictions, rather than sticking rigidly to firm end dates, particularly during autumn 2020.

The uncertainty that was created that autumn is likely to have acted against the CJRS's objectives. Firms who want to make workers redundant must notify the business secretary (via the Insolvency Service) at least 30 days before the dismissal takes effect. In autumn 2020, firms were likely, therefore, to have been making significant decisions about their workforce 30 days before the CJRS was due to end – that is, towards the end of September. Indeed, there was a very large spike in HR1 (redundancy) notifications submitted to the Insolvency Service at around this time. This was long before the chancellor belatedly announced the extension of the CJRS on 31 October. Although that announcement coincided with the formal confirmation of a new lockdown, there had been public speculation for weeks before this about rising case numbers and the likelihood of further restrictions. Long before the lockdown (and the extension of the CJRS) was announced, businesses had been worried about the prospects for their businesses and for their ability to retain staff.

Figure 1 **HR1 Redundancy notifications and CJRS extensions**



Source: Institute for Government analysis of Office for National Statistics, 'Advanced notification of potential redundancies', 14 April2023.

In practice, the period of time for which the CJRS and SEISS ran was tied to the period during which the government imposed substantive restrictions on economic activity. This connection was sufficiently implicit in the Treasury's actions that, in November 2020, when constructing forecasts for future economic activity and public borrowing under scenarios that allowed for further waves of infections, the OBR chose to assume that the availability of labour market and business support schemes would "var[y] with the severity of the virus and stringency of public health restrictions".[90] This was done to generate more plausible forecasts of what it actually expected would happen in those scenarios. But for months, Treasury ministers stuck to announcing firm dates on which policy would change, rather than being clearer that the duration of the policies was, in effect, conditional on the state of lockdown measures.

The later 'roadmaps' that the Cabinet Office produced – such as the February 2021 'roadmap out of lockdown' – provided a clearer indication of this conditionality, stating that: "The Government is committed to do whatever it takes to support the country through the COVID-19 pandemic and support will continue... as restrictions ease and the economy is gradually and safely reopened, the Government will carefully tailor the

level of support to individuals and businesses to reflect the changing circumstances."[91] Budget 2021 then, if anything, over-compensated: deliberately "going long", as Sunak put it, "to accommodate even the most cautious view about the time it might take to exit the restrictions".[92] In interviews and roundtables for this project, stakeholders pointed to the issues, largely during the first nine months of the pandemic – high uncertainty over the length of the schemes and failure to make some of the more marginal changes – as their main frustration with the Treasury during the pandemic, despite being impressed with the overall scale and shape of the policy response.

3. The Treasury's contribution to the government's overarching pandemic response

Aside from its role in designing and implementing economic support policies, the Treasury also performed a crucial role during the pandemic – as the centre of economic and fiscal expertise in government – in understanding how it had and was likely to affect the economy, what the impact of potential policy interventions was likely to be, and how economic activities interacted with the spread of Covid.

Ultimately, ministers make policy decisions and their personal beliefs, political considerations, and evidence and advice they gather from a variety of sources may influence those decisions. But one crucial input into those decisions is the advice and evidence they receive from civil servants.

A fully effective government response to Covid depended on strong analysis from the Treasury being shared openly across government

In addition to briefing its own ministers to help them understand and respond to the pandemic, the Treasury had two important cross-government roles to play, and strong analysis needed to underpin them.

Having bilateral relationships with other departments

The first of these was to liaise bilaterally with other departments. One of the purposes of this would have been to provide them with insight on what was going on with the economy and what might happen in future. On the latter, of course, the OBR produces the government's official forecasts a minimum of twice per fiscal year.[1] But events evolved rapidly during the pandemic and so the OBR's forecasts were quickly out of date, meaning there was a need for an updated assessment more quickly.

These questions mattered to a huge range of departments, since what was happening in the economy crucially affected the issues many of them faced. For example, the Department for Digital, Culture, Media and Sport (DCMS) had to support arts and sports businesses and voluntary organisations to weather the pandemic, which depended on whether those organisations would be able to open their doors to paying customers – and whether there was any appetite from potential customers to turn up. The Department for Transport, meanwhile, had to devise programmes of support for train companies, which also depended on how much economic activity was going on and whether people were moving around the country to make this happen.

The other analytical support that departments needed from the Treasury was in helping to think through the potential economic impacts of policies they were considering. The pandemic had complex effects on people's behaviour and economic activities. Furthermore, some of the interventions being considered were things that

had never been done before: for example, imposing rules on how close people could be to one another in public places. There were, therefore, lots of tricky issues that had to be engaged with to properly understand the likely economic impacts of policies. The Treasury, as the centre of economic and fiscal expertise in government, would have been best placed to help departments grapple with these questions – sharing insights on common issues and promoting a consistent understanding of the interactions between different parts of the economy.

Contributing to a central synthesis of analysis that the Cabinet Office carried out

The second role that the Treasury had to play in sharing analysis across government was in feeding into the synthesis of analysis that the Cabinet Office carried out.

The prime minister makes major policy decisions, usually in consultation with cabinet ministers. To support these decisions, Cabinet Office officials collate and synthesise evidence from across government, which is used to brief ministers. Exactly how this was done varied through the course of the pandemic.

Synthesis of a wide variety of relevant knowledge (such as scientific, legal, economic, operational and so on) is essential to good decision making. Yet it is incredibly difficult: there is no obvious hierarchy to show that one type of evidence is more important than another, and in many cases there will be an incredible amount of information that would be very difficult for any individual – no matter how knowledgeable – to bring together. Further, it is a case of not just looking separately at all the evidence from different experts and advisers and weighing it up, but also being able to see how all these factors would interact. Regardless of how good the inputs are, there is no guarantee that those inputs will be brought together in a way that produces the best advice and outcomes.[2]

The Cabinet Office always plays an important role in synthesising evidence from across government. But this task was especially important and difficult during the pandemic because: (a) there was a great deal of new knowledge being generated from the beginning of the pandemic; and (b) there were very complex interdependencies between economic, health, social and other aspects of the pandemic. Synthesising evidence effectively was, therefore, not simply a matter of taking analysis that different departments had done independently and merging it together to present to ministers, but instead required working with the experts from different departments to integrate their different insights and produce a joint piece of analysis.

This process appears to have become more effective over time. In part this was because it took time to establish new team structures and ways of working to support the process during the pandemic. But other factors are also likely to have been important. For example, the uncertainties being faced diminished significantly once it was clear in late 2020 that an effective vaccine could be developed and distributed.

The early crisis response

At the start of the pandemic, the government made use of existing crisis response structures. The main forum for responding to the crisis and making decisions was COBR (Cabinet Office Briefing Room) meetings, which were intended to bring together all ministers, officials and agency staff relevant to the subject. COBR was designed to keep ministers appraised of the developing situation, to ensure that the wider response of the government was co-ordinated, to record and disseminate key decisions and updates, and to provide up-to-date information for the decisions ministers needed to make.

The civil contingencies secretariat within the Cabinet Office supported this COBR committee and was responsible for co-ordinating different departments and agencies in response to the emergency, including synthesising evidence.

In the very early stages of the pandemic, there was arguably less need for Treasury analysis to be fully integrated with that of other departments because of the nature of the decisions that were being taken. By mid-March 2020, the prime minister had decided to impose a lockdown. Once that decision had been made, the Treasury's task was to design policies that would minimise the economic harm while the lockdown was in place. As a result, the analysis the Treasury needed to do at that time – and which the Cabinet Office needed to convey to other ministers – was to examine the economic effect of alternative economic policy options *conditional on the nationwide lockdown being in place.* There was also very little evidence available in these very early stages. Decisions understandably had to be taken with a relative absence of information and analysis: there was little understanding of the nature and scale of the pandemic, and waiting for it to materialise before acting would likely have meant waiting too long.

Late spring to autumn 2020

As it became clear that the pandemic was going to last for some time, the government recognised that these emergency decision making structures were not adequate for brokering a coherent, cross-government response over a sustained period of time. The structures at the centre of government, therefore, evolved over time.

Decision making initially shifted away from COBR to a daily Covid meeting, led by the prime minister (or by Dominic Raab, the deputy prime minister, when Boris Johnson was ill with coronavirus). Four implementation committees (for health, public services, economic response and international) sat below this, which the relevant secretaries of state chaired.

Finally, in early June, the government settled on a structure with two cabinet committees: one for the Covid strategic response (chaired by Johnson) and one for Covid operational issues (chaired by Michael Gove), with relevant sub-committees formed on various issues as they arose. A so-called 'quad' of ministers – the prime minister (Johnson), deputy prime minister (Raab), chancellor (Sunak) and health secretary (Matt Hancock) – also made some decisions.[3]

A Covid taskforce supported these decision making forums. This taskforce was headed initially by Simon Case, who was appointed permanent secretary to the Cabinet Office on 22 May 2020. James Bowler then took over this role in October 2020. As Bowler said, the taskforce's role was "to bring together all analysis, information and policy for collective decision making in Government. As such, the Cabinet Committees [Covid strategy and Covid operations] take decisions on that, and ultimately the Prime Minister."[4] Three directors general – for analysis, strategy and delivery – supported Bowler in his role.

A common theme from our interviews was how, from March through to the winter of 2020, central co-ordination was messy and there was no proper synthesis of evidence in the centre of government. The initial structure – where SAGE reported to COBR and COBR brought together evidence from other sources that went to the prime minister – broke down from late March. Some interviewees suggested that this happened because COBR was not set up to deal with crises that have the breadth and length of the pandemic; it is much better suited for focusing on short-term crises that crystallise within a particular policy area.

It seems to have taken many months for the Covid taskforce to operate effectively in synthesising evidence. Part of the reason for this was that there was no existing analytical capability for domestic policy issues within the Cabinet Office, so this had to be built up 'mid-flight'. This, combined with significant churn in decision making structures, meant that it took time to build up enough capability.

The constraints on capability for decision making in the pandemic contrast with capability in relation to intelligence issues, where the Cabinet Office has a standing function to synthesise evidence. The Joint Intelligence Committee has played a long-standing role in co-ordinating insights that the various intelligence services have provided to agree the best understanding of the available evidence on intelligence issues. The consensus that is reached on the evidence is then shared with ministers to help inform their decisions. But there is no similar standing function to synthesise evidence on domestic policy matters. This was sorely needed during the pandemic: it was legitimate for ministers to reach different conclusions about the appropriate policy actions, but imperative they based their decisions on the same information.

However, it took many months for this type of evidence synthesis to be done effectively. This is evident in the apparent confusion over who was responsible for some of the most significant decisions early on in the pandemic, and in particular the advice that underpinned them, according to a report of the House of Commons Public Administration and Constitutional Affairs Committee published in March 2021.[5]

During this phase, the way in which evidence from different departments fed into central decision making depended quite heavily on the approach that individual ministers and officials in different departments took, including how open they were to sharing and discussing their data and analysis.

Late 2020 onwards

From late 2020 onwards, there was an analytical team, led by the director general, Rob Harrison, responsible for synthesising analysis from across government. This brought together analysts from different departments and got them to work together in a way that had not happened up to that point, helping to ensure that a more comprehensive, balanced and consistent set of, and interpretation of, evidence was feeding into ministerial deliberations.

There were important differences in how scientific evidence and other types of evidence were synthesised

From the very start of the pandemic, the civil contingencies architecture was complemented by a separate architecture for scientific advice. The Scientific Advisory Group for Emergencies (SAGE), which has been a core part of the UK's emergency response architecture since 2009, brings together independent scientific research and analysis from across government, academia and industry. In emergencies it provides a single source of co-ordinated scientific and technical advice. SAGE was co-chaired during the pandemic, as in other public health crises, by the chief medical officer for England (Chris Whitty) and the then government chief scientific adviser (Patrick Vallance).

There was no similar architecture for social or economic advice. As a result, departments had to provide that type of advice – either feeding it to the Cabinet Office to draw together and share with all ministers or through direct briefing of individual ministers. It was, therefore, much less transparent what evidence was used or how it was shared within government. Similarly, any understanding of how scientific advice interacted with other types of evidence also relied on these less transparent mechanisms. There were no formal mechanisms in place for drawing on social and economic research and analysis from outside government unless departments had – or set up – their own systems for this.

Civil servants have a duty to provide impartial, objective analysis

The civil service code states that civil servants must assist the government of the day with "integrity, honesty, impartiality and objectivity".[6] Analysts within government are also governed by the government analysis functional standard, which requires, among other things, that analysis uses the most appropriate inputs and methods, and that results are presented impartially.[7]

This means that civil servants have a duty to assess rigorously all relevant analysis and use it in advice to ministers, even if it is inconvenient or does not align with ministers' preconceptions. In the context of the pandemic, this meant that Treasury civil servants should have been doing their utmost (within resource constraints) to gather or produce all analysis that could have helped inform government decisions, including the short-term and long-term impacts and the potential spill-over effects of policies that the department was considering.

While this is how effective government should work in principle, it is worth highlighting the issues that officials will face in practice. On issues that are highly political or ideological – which certainly includes Covid lockdowns as well as most of

the other issues that the Treasury deals with, such as public spending – ministers are more likely to have relatively rigid prior beliefs about the correct approach. The reality is that ministers will welcome material that accords with their prior beliefs and often reject analysis that does not. It is difficult to get civil servants to offer dispassionate analysis if their ministers do not welcome it. A recent worsening in the relationship between ministers and officials is likely to have exacerbated this issue, which we discuss in greater length below.

Ministers constrain officials' ability to share analysis

Public policy issues often span departmental responsibilities. It is, therefore, common for officials across different departments to discuss ideas and share analysis with one another. But, in principle, their ministers' preferences constrain their ability to do this. While civil servants have a duty to advise ministers in their department objectively and impartially, it is ultimately for ministers to decide whether they are happy for any of that advice and underlying analysis to be shared outside the department, including with officials and ministers elsewhere in government.

In practice, ministers rarely have the time or inclination to review and sign off or block every piece of information that their officials might want to share outside the department. However, ministers' preferences – and senior civil servants' interpretations of those – can set the tone within a department, affecting how openly officials engage externally.

Effective decision making required complex economic analysis that went beyond describing what was happening in the economy

In the context of the pandemic, and the role that the Treasury played in the wider government response as described above, there are three broad types of economic analysis that would have been useful for the Treasury to produce to inform the government's response:

1. **Monitoring what was happening in the economy.** It was important to know the scale and nature of the shock that Covid imposed. This would have helped the government to identify the sectors, places and demographics most affected, which in turn could have informed the development of economic support – and other – policies.

2. **Providing analysis of how the economy would evolve.** This would have helped departments to adjust policy and communications against a rapidly evolving economic backdrop.

3. **Unpicking the distinct effects of restrictions and behavioural responses.** This more advanced analysis was important for contributing to debates in the centre of government on overall pandemic policy and helped to ascertain the true costs of lockdown policies. Taken further, this work could have addressed questions around the potential impact of a range of different approaches to managing the pandemic, something that simply monitoring the economy would not allow.

This section describes each type of analysis in turn and sets out why it would have been useful for informing decision making during the pandemic. The Treasury was unable to engage with the research process for this project in a comprehensive way, so we cannot claim to have complete knowledge of what the Treasury was producing internally. Instead, what is described below is based partly on testimony from some former officials, our assessment of analysis that is in the public domain as well as evidence from interviewees about what the Treasury shared with other government departments.

This evidence base allows us to assess how the Treasury performed the roles set out above in terms of its bilateral relationships with other departments and feeding into the central synthesis function that the Cabinet Office runs. It also throws up several interesting questions around the amount of work done within the Treasury, and the role that ministers may or may not have played in limiting the extent to which that work could be shared with others in government, MPs and the wider public. The Covid inquiry should examine these questions.

Using new techniques, the Treasury was able to quickly get a grip on what was happening in the economy to inform the development of support policies

As we describe at the start of Chapter 2, (the nature and scale of) the pandemic came as a surprise to the Treasury and much of the rest of government.[8] Ministers took the decision to shut down much of the economy using social restrictions. In this context, the government needed to know the extent of the macro-economic impact of this decision, as well as its distribution across sectors and places, to understand what was going on and where support would be required. Although the initial schemes were – necessarily – designed without knowing the precise scale of the economic shock and therefore exactly how much support was required, this sort of information was crucial for understanding where schemes required modification and when it might be safe to reduce the level of support and ultimately withdraw it.

Traditional economic statistics that the Office for National Statistics (ONS) produces arrive with a substantial delay because of the detailed survey and methodological work that underpins them. Data on GDP is available on a monthly basis at a broad 'by industry' level but is released around six weeks after the period the data covers. Analysts must wait potentially several months more and rely on quarterly rather than monthly estimates if they want breakdowns of GDP by expenditure component (for example, private consumption, investment and government consumption) or region. Given this, many of those both inside and outside government seeking to understand the economic impact of the pandemic began to use real-time indicators (RTIs) – data that is updated much more quickly and frequently but is typically not underpinned by the same detailed methodological work required to produce official national statistics.

The Treasury rapidly adapted to use new data sources to understand what was happening to the economy in real time

The Treasury did not produce RTIs itself, but it used them quickly and effectively. In a speech to the Strand Group on 'Covid and the UK Economy' in June 2022, Clare Lombardelli – the department's then chief economic adviser – outlined how the

Treasury used a combination of real-time data sources, including publicly available ones such as OpenTable restaurant bookings and private sources such as Revolut card payments data, to understand what was going on in the economy. She noted how this was a transformation, with "fast and big data used in a way we never had before".[9]

It is natural for the Treasury not to have devoted resources to the production of RTIs, instead relying primarily on the ONS, whose efforts were guided by extensive consultation with the Treasury and other departments to identify government's data needs. As described in Box 2, the ONS had developed the expertise – and shown that it was willing to accept the additional uncertainty[10] – necessary to produce this type of faster indicator. The ONS performed well as a centre of expertise during the pandemic, consulting departments on what data they required to address various policy challenges, and then seeking new data sources to address as many requirements as possible. Examples included the following:

- A Business Impact of Covid-19 Survey (BICS) was conducted, which surveyed a sample of businesses every two weeks on key issues such as whether they were open, how Covid had affected outcomes such as sales and prices, and cash flow.[*,11] The questions were frequently changed in line with requests from departments about what would be most useful.

- An experimental index to measure the number of vacancies in the economy using data on job advertisements that Adzuna provided.[12]

- To track spending in real time, indicators for monitoring spending on UK debit and credit cards using CHAPS (Clearing House Automated Payment System) data that the Bank of England provided.[13]

Our research has shown that the Treasury's pre-pandemic data science capabilities were almost non-existent, in terms of both skills and infrastructure. The Treasury had very few people employed as data scientists before the pandemic. BEIS had lent the department its first such individual only in 2019. The department also did not have the necessary infrastructure for analysis, such as the type of secure cloud-based analytical platform of the type that BEIS had developed.

While the Treasury may not have required the capability to produce new data sources itself, the department's lack of skills and infrastructure did nonetheless have costs: it meant that the department was using somewhat inefficient methods to share data. The data was packaged into charts within a PowerPoint slide pack before being shared with officials and ministers, rather than being shared using, for example, an interactive tool that would have allowed the user to explore the data (and understand its implications) in greater depth. Other departments, including BEIS, developed these sorts of tools.

[*] The survey has been maintained – rebranded as the Business Insights and Conditions Survey – and the ONS now uses it to track how current issues, such as supply-chain constraints and the energy crisis, are affecting businesses.

Box 2: Data science capabilities and the development of real-time indicators in government during the pandemic

BEIS already had several data scientists working in the department at the start of the pandemic, and had built the necessary infrastructure for deploying data science techniques at scale (in particular the department's cloud-based analytical system, CBAS).*,[14] This meant that the department was able to quickly install a multidisciplinary data science team of around 20 staff – named 'advanced analytics' – to act as an internal consultancy providing data science services to key BEIS policy areas.[15] These officials quickly developed a range of real-time indicators that were shared across government – including with the Treasury – to inform policy development during the pandemic.[16]

Before the pandemic, the Bank of England had also been investing in greater use of data science techniques and alternative data sources. The division responsible for this was established in the early 2010s. It expanded after the Brexit vote to develop tools; for example, to track trucks near ports to measure trade frictions.[17] The Bank of England was able to scale up this capability for Covid, including using measures of traffic flow developed after the Brexit vote, as well as new indicators such as payments data to measure different types of consumption in real time.[18]

The ONS, spurred on by the recommendations in the 2016 Independent Review of UK Economic Statistics,[19] established its Data Science Campus in 2017, employing a cadre of data scientists and developing a training programme for those who wanted to develop these skills within the public sector.[20] The ONS was widely praised for the creation of a broad range of new real-time data sources during the pandemic, which included using VAT returns to estimate economic activity in real time and the development of new rapid surveys; for example, of the business sector. The existence of the campus before the pandemic was crucial in enabling this: some indicators such as the one using VAT returns already existed (having been developed to help produce more timely estimates of GDP), while experimenting with techniques and datasets subsequently fed into the development of new indicators.

* CBAS provides analysts with scalable data storage and a suite of analytical tools, including standard statistical software (SAS, SPSS and Stata) as well as open-source software such as R, and data science, programming, data visualisation and mapping tools.

The Treasury shared its assessments of economic data with other parts of government

Interviewees told us that the Treasury was effective at collaborating with other departments to compile and share economic data. As described above, the Treasury used products from the ONS, BEIS and elsewhere to quickly build a portfolio of real-time data sources to assess what was happening in the economy, at a high frequency. The Treasury reinforced this point, telling us that the department "provided advice to senior ministers and other departments on how the economy was being affected by the virus and the impact of measures taken in response to it in as close to in real time as possible. This included, jointly with the Cabinet Office, briefing the prime minister on a weekly basis and advising on the economic impacts of measures as a key input to the Cabinet Office Task Force's various reviews" (the Cabinet Office reviews are discussed in further detail below).

The Treasury also worked closely with the Bank of England and BEIS to share information on the financial health of the corporate sector. These relationships helped to combine the comparative advantages of each organisation (the Treasury's macro-economic surveillance and monitoring capability; BEIS's intimate knowledge of individual sectors, ability to process microdata and data science capability; and the Bank of England's knowledge of financial data) to deliver a product that was more informative than what each department could have produced individually.

In a few instances, some of this work was published

Some of the work that the Treasury did to assess the points of distress in the economy was published. For example, in November 2020, the Department of Health and Social Care (DHSC) published *Analysis of the Health, Economic and Social Effects of Covid-19 and the Approach to Tiering*.[21] This included input from the Treasury on the economic impacts of restrictions, which built on information that was included in the document for the 2020 spending review.[22] Specifically, the report set out:

- the performance of key macro-economic indicators, such as GDP and unemployment since the onset of the pandemic
- which sectors had been most affected by the pandemic (largely those dependent on social consumption, such as hospitality and leisure)
- information from new, faster indicators, such as the ONS BICS referenced above, on the number of businesses reporting falls in turnover in different sectors.

The Treasury were also keen to point us to the work it published in the *Budget 2021* document,[23] which went a step further than the analysis published in 2020. To analyse the impact of tiered restrictions in the autumn of 2020, the Treasury calculated what proportion of economic output was covered by each tier of restrictions (the tiers went from 1 to 4, with tier 4 representing the most severe level of restrictions), and observed the level of GDP, furlough usage and number of employees in each month.

The Treasury also maintained its own scenarios for the economy...

On the second type of analysis set out above – providing a view on how the economy would evolve in order to help departments plan and communicate under huge uncertainty – the picture is more complicated. The government has an official forecaster separate from the Treasury, the OBR, which was set up in 2010 to outsource forecasting for budgets and spring/autumn statements from the Treasury.[24] The OBR's remit requires that it produces at least two sets of medium-term (five-year) forecasts each fiscal year. Exceptionally, the OBR published four assessments of the economy during 2020:

1. In line with usual practice, the OBR published an economic and fiscal forecast to accompany the budget on 11 March 2020, only days before the first lockdown was announced.[25] This forecast, finalised weeks before the budget, did not include a significant impact on the UK economy from the coronavirus outbreak.

2. Next, the OBR produced a "coronavirus reference scenario" in April 2020[26] to explore the possible impact of the coronavirus outbreak, although it noted that this should not be viewed as a central forecast of what was likely to happen. The Treasury commissioned this forecast because it was clear that the situation had evolved rapidly and the economic impacts of the virus would be much more extreme than had been assumed for the March forecast. The scenario assumed a steep drop in GDP followed by a sharp 'V-shaped' recovery.

3. In July 2020, by which time it was clear that Covid would be a more persistent problem than many had previously imagined, the OBR (unusually) released a fresh set of three scenarios, published in its *Fiscal Sustainability Report*.[27] The central scenario assumed a slower recovery than the April version (described by some as a 'U-shaped' recovery), alongside 'upside' and 'downside' scenarios.

4. The OBR then updated these three scenarios a few weeks after the announcement of the second lockdown in November 2020, in a more typical *Economic and Fiscal Outlook*, to accompany the 2020 autumn statement.[28]

Although the OBR produced more forecasts and scenarios for the economy during 2020 than it usually would, there was still a role for the Treasury to play in providing a more frequently updated view on what was going to happen in the economy. While the economic outlook does not typically change drastically within the space of a few months, it did during the pandemic. Between April and July 2020, for example, there was significant change in the outlook for the economy, with the initial 'V-shaped' recovery implied by the OBR's April reference scenario looking increasingly out of date as time went on.

The work of other government departments was unusually dependent on what might happen in the economy, as described above. These departments did not necessarily need a fully fledged economic and fiscal forecast but did need some broad understanding of how the likely trajectory was shifting, perhaps a commentary describing how the outlook for the economy was similar to or different from whatever the latest OBR publication had said.

The Treasury did maintain its own scenarios for the economy, at least during 2020. We know that these were being used in advice to the chancellor even in early May 2020, as they were leaked to journalists at *The Telegraph*, who reported that the note that officials prepared for Sunak said that "a more realistic scenario" than the idea of a V-shaped recovery (as was implied by the initial April 2020 OBR reference scenario) was a "prolonged recovery and some permanent damage to the economy" – in other words, a U-shaped recovery.[29] The Treasury will have no doubt found these scenarios useful for internal policy development.

... but these were not shared openly with other parts of government

There is no evidence that the Treasury's scenarios were shared outside the department, except perhaps with a small group in the Cabinet Office. Several interviewees from other departments said that the Treasury did not provide the thought leadership on the economy that they would have expected on what was *going to happen* with the economy and analysis of the impact of different policies, beyond simply using data to look at what was *already happening.* They suggested that this was particularly problematic in mid-2020 in the gap between the initial reference scenario that the OBR published in April 2020[30] and the set of scenarios that the OBR subsequently published in its *Fiscal Sustainability Report* on 14 July 2020.[31] Officials from other departments complained that – at least in this interim period – the Treasury did not provide a view on where the economy was going. When pressed, Treasury officials would point to the early reference scenario from the OBR, but a lot had changed between April and July, and that initial scenario was necessarily made with "no basis for knowing how long the most stringent public health measures will remain in place".[32]

That other departments were still working off the outdated OBR reference scenario is shown by a report that the DHSC and ONS published on 15 July 2020, which estimated the indirect effects of the lockdown on public health using the OBR's April scenario.[33] This report was published one day after the new OBR scenarios – painting a very different picture for the economic outlook – had been published.

The Treasury's insistence that other departments rely on an OBR scenario that was looking increasingly out of date (or at least as though it did not capture the full range of possible outcomes) created serious problems for other departments. The OBR scenario implied no need for a continuation of support in the case that individuals would continue to socially distance (voluntarily) in the absence of legal restrictions. It also provided a misleading sense of how long businesses would need to keep infection control policies (including social distancing and the use of personal protective equipment (PPE)) in place.

Faced with this situation, non-Treasury departments turned to each other for views and analysis on where the economy was headed. We heard from multiple interviewees that analysts in other departments set up 'back channels' and regular meetings, excluding the Treasury, where senior analysts met to discuss views and share analysis on the economy. These informal structures inevitably relied on personal relationships and goodwill – interviewees pointed out that this was a very poor way of running the co-ordination of economic analysis.

Of course, Whitehall is not the only place in which economic forecasts are made. As part of its *Monetary Policy Report*, the Bank of England produces forecasts every quarter.[34] Research institutes and banks also produce regular forecasts for the UK economy, which the Treasury publishes a summary of every month in its 'Forecasts for the UK economy'.[35] The Treasury told us that it felt this meant that it did not need to share its own internal assessments with other departments: it said "that it would be inappropriate to produce rival forecasts to those produced by the OBR as the government's official forecaster". It pointed to forecasts produced by the OBR, Bank of England, OECD and IMF. It said that "all of this information was available, and being synthesised, questioned and analysed, as it became so. Assessment and synthesis of the available forecasts was shared with CO and other departments."

However, the argument made by many of our interviewees, with which we agree, is that the point of the Treasury playing a thought leadership role on the outlook for the economy during Covid would have been to make sure that departments were working from a common set of assumptions and were communicating with stakeholders, including businesses, in a consistent and coherent way.

Asking departments to form their own view is likely to lead to divergences, and inconsistency in policy making. It is also inefficient: every department then needs its own (strong) macro-economic capability, rather than being able to rely on one centre of expertise in government. In this regard, it is helpful to contrast the pandemic experience with what had happened during the financial crisis, when the Treasury would send around an 'economy narrative' to other government departments so that they were all operating from the same assumptions when designing policy and communicating with stakeholders. The Treasury also led on the co-ordination of a cross-departmental National Economic Council during the financial crisis.[36]

Treasury officials were doing the work for internal purposes, which was no doubt helpful for advising the chancellor and as an input into other policy advice. But it is unclear why the Treasury did not perform this role for wider government too.

Making decisions over the severity and composition of social restrictions required a more complex level of analysis

The third type of analysis set out above – separating out the impact of restrictions that the government imposed from pure behavioural responses to disease prevalence – would have been an important input into deliberations on the appropriate stance of pandemic policy beyond the surveillance of the economy described above. That is because simply observing how the economy fares under restrictions does not reveal the causal impact of restrictions. Even without legal restrictions, if Covid was believed to be virulent and dangerous enough, individuals would have avoided social interaction by reducing the hours they worked (particularly if they worked in a setting with other people and could not work from home) and their consumption (particularly 'social' consumption) to avoid the risk of catching the disease.

For this reason, just correlating economic outcomes with the level of restrictions is likely to lead one to significantly overestimate the economic cost of restrictions. To see why, consider the approach that takes the spread of the epidemic as a given fact and seeks to understand the consequences of it for economic behaviour and outcomes, designing policy on the back of that.

One of the most compelling statements of this argument was put forward by David Miles and co-authors in a paper in mid-2020.[37] The paper conducts a cost benefit analysis of the initial UK lockdown. In short, it provides a range of estimates for 'lives saved' by the lockdown in terms of quality-adjusted life years (QALYs), as well as using a range of estimates for the fall of GDP in 2020 (and beyond) as a measure of the costs of lockdown. Using figures for how much the NHS is usually prepared to spend to save one QALY (that is, to provide someone with an extra year of quality-adjusted life), the authors could express both the life-saving benefits of lockdowns and economic costs in a single (monetary) measure. They concluded that the costs of the initial lockdown were much greater than its benefits and called for it to be eased quickly.

This early attempt at a cost benefit analysis provided a useful benchmark calculation and served to stimulate debate on the pros and cons of what were very stringent restrictions on society. As the authors rightly say, "bringing together the costs and benefits is necessary if good policy is to be made". But as some pointed out following the paper's publication, that analysis and others like it failed to appreciate the interdependency between health and economics.

- **This type of approach likely underestimates the benefits of lockdowns.** Jagjit Chadha, director of the National Institute for Economic and Social Research, argued that it omitted, for example, "the possible impact on long-term health from the emergence of long Covid (rather than deaths per se), the loss of lives elsewhere that might have resulted from an overload of the health system, [and] the impact on the income distribution from a more rapid spread of the virus as opposed to the socio-economic impact from lockdowns".[38]

- **It also runs the risk of overestimating the costs.** The authors observed the deterioration of the economy that coincided with the imposition of restrictions and counted that fall in GDP as the 'cost' of choosing to lock down. However, this fails to address the counterfactual of what would have happened in the absence of lockdown. Even without any restrictions, in the face of the exponential growth of a potentially deadly virus, individuals would voluntarily reduce activities that may expose them to the disease ('voluntary social distancing'). As we outline later, more detailed analysis of the counterfactual and pandemic dynamics sometimes suggests that appropriately timed restrictions have a beneficial economic impact overall.

None of this is to say that social restrictions during a pandemic are unconditionally good. As this report does not seek to evaluate all pandemic policies, we cannot claim that any particular pandemic policy was the right or wrong choice. However, it is clear that assuming that all of the fall in economic output under lockdown was due solely to lockdown would not give the right answer to these questions.

The experts who spoke to us emphasised that the value of doing more sophisticated analysis was in being able to assist in the identification of a 'sweet spot' of policy that balanced economic, health and other social considerations. There were a range of measures available to government to control the spread of Covid – including social distancing in public places, mandated mask-wearing, the closure of schools, the closure of hospitality businesses and guidance to work from home – each of which could have been imposed everywhere or only in certain places and each of which had different implications for disease spread, economic output and other outcomes such as educational attainment or mental health.

Public health restrictions may have been too draconian at points during the pandemic and/or too wide-ranging when more targeted measures may have had just as much effect. An unnecessarily tight lockdown in place for too long would of course be unacceptable. But letting the virus rip through the population and allowing the 'fear factor' to suppress economic activity – on top of severe health outcomes – may have been equally counterproductive.

Academic economists rapidly developed new techniques to study the economic impacts of the pandemic

Prior to Covid, the study of the economics of pandemics was quite a niche topic with little economic research devoted to it. A few economists, such as Flavio Toxvaerd of Cambridge University, had been researching the economics of epidemics long before Covid.[39] There was a paper written in 2010 about the potential macro-economic impact on the UK of a flu pandemic[40] and the United States Congressional Budget Office had published a report outlining the potential macro-economic consequences of a pandemic under two different scenarios.[41] Economists were also using epidemiological models to study non-health phenomena, such as the spread of narratives or stories.[42] Economic historians have also previously investigated the impact of the outbreak of the Spanish flu[43] and – much further back – the Black Death in Europe.[44]

As the significance of the coronavirus crisis became evident, the academic economics community built rapidly on these earlier efforts to produce a great deal of research on the topic. Hundreds of papers were written in 2020, often as working papers or in rapid-response journals such as the Centre for Economic Policy Research's *Covid Economics.*[45]

Many of these, inspired particularly by an early contribution from Martin Eichenbaum and others,[46] combined conventional economic models* with epidemiological models that simulate the spread of infectious diseases, which at their most basic differentiate between those who are susceptible, those who are infected and those who have recovered from the illness (and are thus called 'SIR' models).

There were several lessons to be gleaned from this research, even in the early weeks and months of the pandemic, most notably that optimal policy (even if one placed a very high weight on economic outcomes relative to health ones) involved keeping

* These model the decisions that firms make on employment investment and production, and the choices that individuals make over how much to work and consume or save.

Covid in check, either using restrictions to buy time until a vaccine was widely available or – if the time until a vaccine was widely available was either far in the future or highly uncertain – using restrictions tactically to keep the pandemic under control as immunity built up.

One highly complex model would not have given perfect policy prescriptions

It was possible to develop incredibly complex combined epidemiological and macro-economic models to derive policy conclusions. But given the levels of uncertainty around key parameters for Covid and the economy, these would not necessarily have given a clear-cut answer to whether a certain policy should be pursued at any point in time. Deriving optimal policy is highly demanding within a non-linear dynamic setting where there is high uncertainty about the model parameters.

More helpful to policy makers would have been a simpler model that captured some of the key trade-offs. This would have allowed decision makers to put in their own assumptions and objectives and see the outcomes of different paths for policy. Policy makers would have been able to understand what they would need to believe about the key parameters to think that easing particular restrictions, or imposing them, was the best approach. It would certainly have taken them further than simply observing economic outcomes and correlating those with the level of restrictions.

Such models are useful for understanding non-linearities and threshold effects in the systems they study. An obvious example in the context of pandemics is the risk involved in letting the virus reproduction rate (the 'R' number) exceed one, at which point the spread of the virus becomes very aggressive, and (in an epi-macro model) the economy experiences a significant downturn due to the health system reaching capacity and individuals voluntarily reducing both their consumption and the number of hours they work, even in the absence of government intervention. A situation in which outcomes are linked to a large number of variables in complex ways – which does tend to lead to a high level of uncertainty in results – is precisely where modelling can be most helpful to analyse the approach to a problem (even if it cannot provide reliably accurate forecasts).

Various experts told us how they used the epi-macro literature in different ways to draw out helpful insights about the economics of pandemics. For example, researchers at the Bank of England quickly developed an epi-macro model after the pandemic hit. They found this theoretical model most useful early in the pandemic when there was little data to analyse. The models helped the bank to understand the role of voluntary social distancing in suppressing economic activity, what optimal policy (for example, the extent and timing of lockdowns) might look like, and the impact of seasonality in infections and the introduction of a vaccine on optimal policy. This was used to help policy makers on the Monetary Policy Committee understand some of the basic dynamics of the economics of pandemics.

There was a clear set of lessons to be gleaned from the epi-macro literature, even relatively early in the pandemic, as set out in Box 3.

Box 3: Lessons from early work on 'epi-macro' (integrated epidemiological and macro-economic analysis)

The models, based on empirical research,[47,48,49,50] assumed that individuals would avoid coming into contact with others and therefore reduce their economic activity (hours worked and consumption) in the presence of a virus. Individual responses would vary according to the epidemiological parameters in the combined model (particularly whether the individual is susceptible and what proportion of the remainder of the population is infected), the risk posed to each individual from an infection (a function of their age, existing comorbidities and so on), as well as their own preference for risk (whether they are inherently more or less cautious than average).

These voluntary actions reduce both economic activity and the spread of the virus. Yet the models suggest that voluntary action is not enough to achieve the desired reduction in viral spread because of so-called 'externalities' – a general term in economics for when an individual's behaviour imposes a cost/benefit on others that is not factored into the individual's decision making process. A classic example of an externality is when individuals consume goods that pollute the environment but do not pay a price for the damage done.[51] In the context of epidemics, there are 'infection externalities' whereby individuals impose infection risks on others, not just themselves, when mixing with other people. People do not fully internalise these 'social costs' and act based solely on the perceived costs to themselves; one estimate suggests that the social cost of an additional infection is three times greater than the perceived private cost.[52] Voluntary changes in behaviour are still likely to contain a pandemic to a greater extent than epidemiological models alone suggest (which do not allow for any changes in human behaviour), but are likely to generate more infections than would be socially optimal.[53,54] As Silvana Tenreyro, a policy maker at the Bank of England, noted in June 2020, drawing on this research: "Optimal government policy institutes containment measures that would slow near term output."[55]

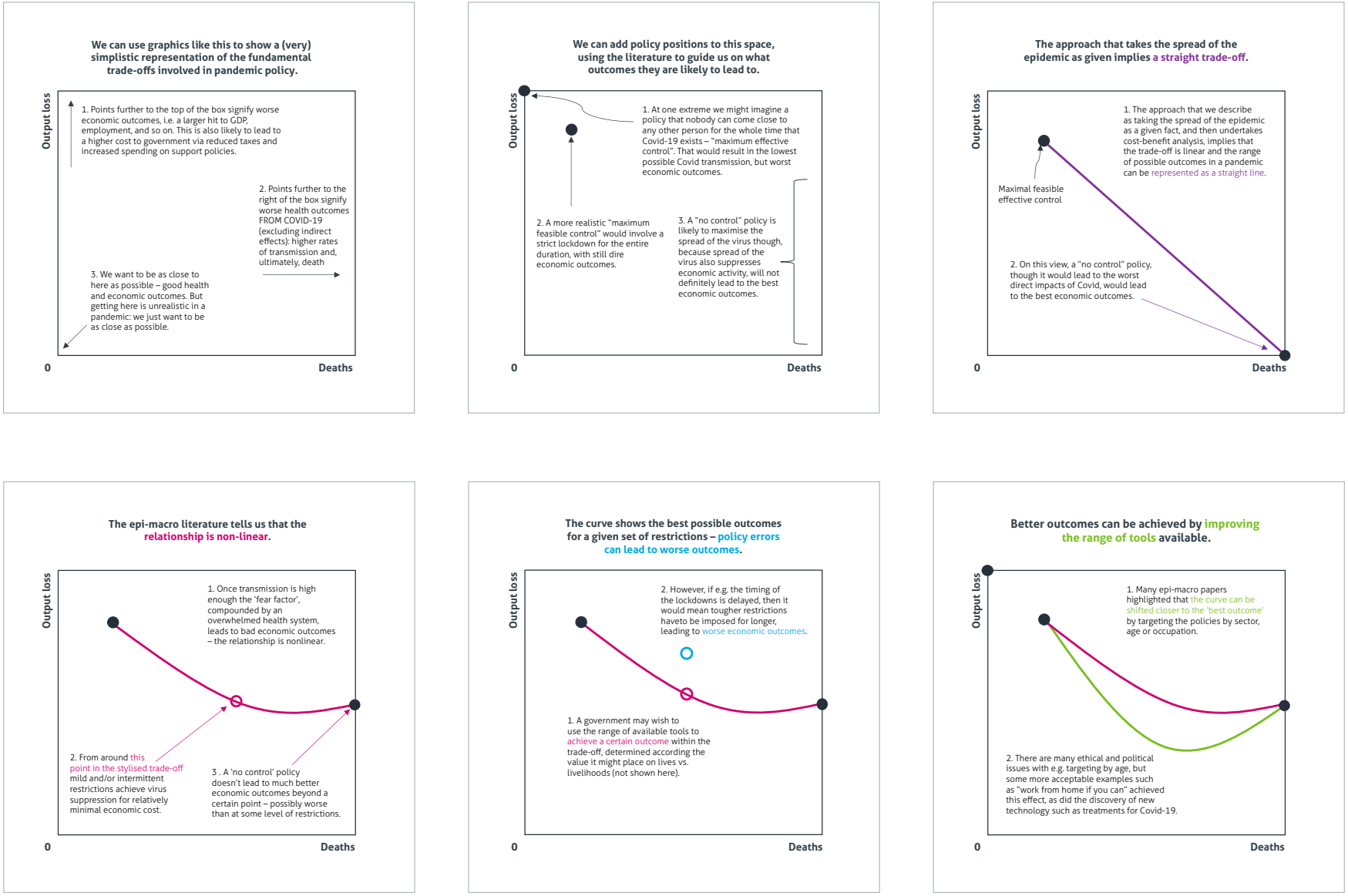
At least at some points during the pandemic, particularly when infections are rapidly growing, implementing restrictions with short-run economic costs achieves virus suppression, which ultimately helps both the economy and public health in the longer run.[56] This insight emerged in the 'epi-macro' literature from at least as early as May/June 2020. It directly contradicts the claim that delaying or opposing lockdowns would *always and everywhere* lead to lower up-front economic costs.[57] This is because of the strength of the voluntary response to high levels of the virus: if measures (which may have a dampening effect on the economy in the short run) are not introduced to suppress the virus, the voluntary response strengthens as transmission grows, resulting in a loss in economic output that in some scenarios is greater than the loss from suppression measures.

This is evident in the empirical literature, which shows that, once the prevalence of the virus is statistically controlled for, the imposition of restrictions reduces economic activity by very little or not at all.[58] This demonstrates that controlling the virus was important for economic outcomes as well as for achieving fewer direct deaths and illnesses from the spread of the disease. A detailed study comparing the approaches of Denmark and Sweden found that the relatively stricter restrictions in Denmark had relatively little additional economic impact beyond the behavioural response of consumers to disease prevalence, concluding that "governments should weigh the benefits of the public health interventions in terms of reduced mortality and serious illness... against the small differential cost in terms of economic activity".[59]

Perhaps the most important feature of restrictions in terms of their ability to control the virus is their timing (rather than severity). If government has a binding constraint (such as not overwhelming the NHS) then, regardless of the relative value it otherwise places on economic and health costs, it will have to impose restrictions once transmission reaches a certain point. Given this, it is much better to act early to suppress transmission. If restrictions are delayed until the point where the health service is almost overwhelmed, then they will likely have to be stricter, and in place for longer, than if a more risk-averse approach was taken. This would lead to higher economic costs as well as higher transmission.

Of course, the best outcomes can be achieved by improving the range of tools available so that they achieve the same impact on health outcomes for a lower economic cost. Several epi-macro papers emphasised that targeting restrictions by sector[60,61,62] would do this because different industries (such as hospitality and retail) were more likely to drive transmission and that is, of course, what many countries ended up doing. Others emphasised that targeting by age[63,64,65] may also, in theory, improve outcomes by (forcibly) protecting older age groups who were more vulnerable to the worst outcomes from exposure to Covid-19, while allowing younger groups to continue to engage in economic activity, though there are obvious significant political and ethical issues in implementing this. Another common theme in the literature was the suggestion to target by occupation,[66] which is what the "work from home if you can" guidance essentially did. What we describe more fully below as "smart NPIs (non pharmaceutical interventions)" also fall into this category.

Figure 2 **Lessons from early work on 'epi-macro'**



Source: Adapted from Acemoglu D, Chernozhukov V, Werning W and Whinston MD, 'Optimal Targeted Lockdowns in a Multi-Group SIR Model' (NBER Working Paper 27102), National Bureau for Economic and Social Research, 2020, retrieved 19 April 2023, www.nber.org/papers/w27102

Other types of analysis would also have helped to unpick the causal effect of legal restrictions

Even without constructing anything like an epi-macro model, it would have been possible to use statistical analysis to unpick the distinct roles of legal restrictions and behavioural responses to the presence of the virus in contributing to observed falls in economic activity. Although these relationships were changing through the course of the pandemic, that analysis would have provided some insight into the potential impact of future restrictions, and certainly have been better than assuming that all economic costs were associated with restrictions rather than the virus itself. As early as May 2020, Bank of England staff were producing estimates of how much 'voluntary' actions – as opposed to legal restrictions – suppressed economic activity,[67] while the OBR cited evidence from the International Monetary Fund that pointed to similar conclusions in its November 2020 *Economic and Fiscal Outlook*.[68]

The first-best option would have been for the Treasury to have some in-house capability to do this sort of work, so that policy makers could develop different policy options, assumptions and objectives in the policy making process. However, there was a burgeoning academic literature on the topic, as described above, and even without some in-house capacity, some effort to import that expertise into the Treasury and wider government decision making would also have helped to inform policy.

Beyond high-level discussions of the economic impact of lockdowns, the Treasury should also have been using this kind of analysis to provide – or at the very least help to compile with input from across government – analysis on the impacts of different combinations of interventions at a more micro level. The government developed a 'menu' of interventions to choose from (for example, mandating the use of masks, rules on the distance that must be maintained between individuals in public places, the closure of schools, hospitality venues or other establishments and international travel restrictions). Achieving a certain reduction in transmission in the least costly way required estimates of both:

- the impact of each of these interventions on transmission, which scientific advisers such as those on SAGE were attempting to estimate

- the costs – economic and otherwise – of those interventions.

Treasury analysts began working on epi-macro early on...

While we do not know a great deal about exactly what types of analysis the Treasury was producing and how (if at all) this was being used in policy advice to the Treasury's ministers, we do know that some analysts in the department started working on the type of integrated analysis described above. Specifically, Treasury economists had developed a basic epi-macro model.*

* An epidemiological 'bolt-on' was developed for one of the macro-economic modelling tools that the Treasury uses, namely NiGEM (National Institute General Equilibrium Model), developed by the National Institute for Economic and Social Research.

The department also engaged with experts in the field of integrated epi-macro modelling. For example, it heard from Professor Ben Moll at the London School of Economics and Political Science as part of the seminars that it organised with the Royal Economic Society (RES) (described above), and separately invited experts including Flavio Toxvaerd and Tony Yates to speak at an internal workshop devoted to exploring epi-macro models. However, this engagement was limited and did not run through the course of the pandemic (the RES seminars ran for a couple of months while the epi-macro workshop was a one-off). The flow of information was also one-way: the Treasury would absorb insights from experts without opening up its own analysis to scrutiny from them. An article by Moll, Toxvaerd and Yates written in November 2022 makes clear that they had no idea what modelling the Treasury did, despite their interactions with the department in 2020.[69]

Although they were doing the work to some extent within the department, the chief economist, Clare Lombardelli, said in a speech in 2022 that "epi-macro modelling proved to have limited practical applications. It is highly sensitive to underlying assumptions and small changes can cause large differences in the outputs of these models... we could have constructed and estimated economic models all day long, and they would have been wrong."[70] As a result, "they weren't a big part of... advice to ministers on what economic policy interventions they should be assuming".[71] It is not clear, however, whether this means that officials did not use any of the insights that the models generated in policy advice to ministers, or whether they simply did not use them to make concrete forecasts of the impacts of specific policies.

... but little is known about what other analysis the Treasury was doing to identify the causal effects of non-pharmaceutical interventions

It is unclear how much work – beyond this epi-macro modelling – the Treasury did during the pandemic to disentangle the causal impact of legal restrictions and guidance from voluntary behavioural changes. We can find no published outputs from this sort of work from the Treasury.

The best public explanation there is of what analysis the Treasury was doing comes from a letter from the former permanent secretary, Tom Scholar, to the Treasury Select Committee in January 2021. But that is also very vague on this point, stating that the Treasury "considered the non-pharmaceutical restrictions (NPIs) in force or under consideration" and "used a range of analytical tools... to assess the interaction between the different factors", which "generated advice to ministers on the possible range of impacts". Scholar states that this analysis "informed the Government's publication 'Analysis of the health, economic and social effects of COVID-19 and the approach to tiering'" in November 2020.

Department staff themselves told us that they "considered keenly in their economic analysis behavioural changes from the virus and NPIs, and the subsequent impact on economic activity". They pointed us again to the analysis of tiering set out in the November 2020 publication and in the Treasury's own spring budget 2021, which we discuss further above. But these publications contained nothing close to the sort of analysis we are suggesting was needed and possible: most of the quantitative

analysis within them was of the descriptive, monitoring type above. The publications did contain text referencing the fact that there would be behavioural responses and that these would matter for economic outcomes, but no attempt to quantify these was evident. An important question for the Covid inquiry will be to establish exactly what analysis the Treasury did do on economic impacts to inform ministers' choices over the range of interventions available to them.

It is unclear how this analysis was used internally...

How the department's analysis fed into advice to the chancellor and other ministers is a crucial question that, based on the evidence available to us on the outside, we are not able to answer. The Treasury itself told us that the department "produced a wide range of analysis (including technical modelling) throughout the pandemic that fed into decision making at the heart of government. It used its existing suite of models and analytical techniques, as well as developing novel approaches, informed by its engagement with academics and other bodies." As discussed above, there are certain expectations on officials to produce analysis that takes account of all relevant inputs in a balanced and objective way. Based on the limited information we have about the Treasury's development of epi-macro models and engagement with external experts, it seems that officials tried to do this internally but did not exploit as fully as they could have the expertise available outside government to help them with this. There are several critical questions that need to be answered about:

- how much resource was put into this sort of work (out of the several hundred economists that the department employs)
- exactly when it was taking place
- how it was used.

It was no secret that the then chancellor, Rishi Sunak, was a lockdown sceptic. Based on an interview with him, as well as accounts from his critics in government, Fraser Nelson wrote about a "money-obsessed Sunak [who] was on a one-man mission to torpedo lockdown".[72] Aware of the chancellor's sceptical position, Treasury officials may have interpreted a ministerial preference for the type of analysis that implies stark costs associated with restrictions (the 'observational' analysis that we describe above). It is only that type of analysis that the Treasury ever made public, and only that type of analysis that was shared with those who we spoke to in the centre of government or other government departments up to the end of 2020. It is important for the Covid inquiry to explore how senior officials responded to apparent ministerial preferences in the types of analysis and work that they commissioned. These questions speak to a broader issue in the relationship between ministers and officials: Jill Rutter describes a "trend for the civil service to simply do what ministers and advisers ask and see their advice and input downgraded or indeed self-censor continues".[73]

... and the Treasury worked on developing it with other departments in the 'third phase' of decision making

Where we can be much clearer, thanks to candid conversations with many officials from elsewhere in government who were working on the development of the pandemic response, is in regard to how the Treasury deployed analysis in conversations at the centre of government.

In what we have characterised as the 'third phase' of decision making from late 2020 onwards, where there was a more effective function in the Cabinet Office synthesising evidence from other departments, the Treasury took part in a cross-department modelling group that included the Cabinet Office, the Scientific Pandemic Infections group on Modelling (SPI-M) and the Joint Biosecurity Centre (JBC). This group used a 'simple' epidemiological model to assess the least costly way to keep hospital admissions under a certain threshold. Through the stronger analytical function in the Covid taskforce, Treasury analysts also came together with those from other parts of government to discuss and combine their analysis on this issue and a broader range of questions.

The work of the taskforce and cross-departmental modelling group brought together evidence relatively effectively from Christmas 2020 onwards. The benefits of this were shown in the February 2021 roadmap out of lockdown. This showed, relative to earlier attempts, a much more effective synthesis of evidence. That, in turn, enabled competing objectives to be more effectively balanced, which led to much better policy outcomes.

The series of reviews that accompanied the roadmap (for example, on social distancing) also showed a more effective coming together of different departments in analysing the impact of specific policies, including social distancing.[74] Agreeing on a common set of evidence to support decision making better enabled decision makers to identify where complementarities existed and to take a more considered approach to balancing trade-offs. As we describe below, decision making without this effective analytical function at the centre of government was much more polarised and was unlikely to identify the most effective policy response.

But synthesis of evidence had been much less effective in the second half of 2020

It is unfortunate that it took until the end of 2020 for this to start coming together. Interviewees were much more critical of how the process worked in the second half of 2020, and the Treasury's role in that.

Without something at the centre of government to perform the crucial synthesis function between May and December 2020, two distinct 'lobbies' formed within government: a 'public health' one that tended to be more pro-restrictions, to bring down infections and minimise deaths from Covid; and a 'Treasury view', which was characterised as being consistently more anti-restriction than the public health one. This is not to say that all public health officials wanted to pursue a 'zero Covid' policy, or that the Treasury wanted no restrictions at all (although some individuals may have

been at these extremes).* Yet they were far enough apart for the two groups to be in conflict most of the time. Without officials first coming to a consensus on what the evidence said, ministers with opposing views were incentivised to cherry-pick from the evidence available in order to support their particular position. This made it much harder to balance the trade-offs: the choice was presented as a binary one between health and economic outcomes when, at least in some cases, that did not reflect reality.

Interviewees involved in discussions over social restrictions variously described central decision making for much of 2020 as "a bit of a Punch and Judy", "enormously chaotic", "a tug of war" and simply "[not] a proper bringing together of science, public health and economic considerations".

Talking about the Treasury specifically during this period, interviewees said that they saw little from the department in the way of analytical modelling of the pandemic and approach to lockdown policy. In particular, Treasury officials did not have a worked-through assessment of what the optimal level of restrictions might look like for different scenarios or an analysis of the counterfactual; instead appearing to maintain an instinctive dislike of lockdowns that was not obviously based on analysis. One interviewee said that they "didn't see the analysis that you would expect of an institution dealing with the biggest economic shock for a generation", while another said that Treasury officials "came along with not much more than hand waving [saying] 'we don't like this because it's expensive'". In a few instances where the Treasury was interacting with other departments during this phase, it denied having done epi-macro analysis, although we now know that it was doing it at that time. This was typical of a broader trend of Treasury evasiveness and opaqueness with other departments – or 'tactical' sharing of information (that is, sharing only information that supported a certain policy position).

The Treasury rejected this interpretation of its behaviour, although this view was put forward by the vast majority of those we spoke to in other parts of government. Specifically on the influence on ministers on sharing of information, they said that officials would on occasion "be called upon to represent the views of ministers in meetings with officials from other departments (and would use relevant data to support those arguments)" but denied that ministers influenced what analysis was undertaken or whether it was shared appropriately.

Some interviewees did, however, point to instances in which the Treasury helpfully contributed to cross-Whitehall reviews of specific non-pharmaceutical interventions (NPIs) in the early summer of 2020. One was the review of two-metre social distancing, published in June 2020, although the published version of that review contains references to only a very limited range of economic data and no deeper analysis.[75] Another was a review of 'smart NPIs' (that is, how to adjust interventions to minimise their effect on the economy while maintaining a strong impact on transmission), although this was never published, and interviewees said that it did not have a great deal of impact because it was difficult to quantify the relevant effects.

* Rather, one interviewee suggested that the Treasury position was wanting to have the reproduction rate (the 'R' number) close to one, with the main objective being to not overwhelm the NHS, while the 'public health' lobby would desire a lower level of R (say, around 0.7), which would bring more public health benefits.

It was, of course, incredibly analytically challenging to answer questions about the economic impacts of specific interventions, particularly early on in the pandemic when many of them had not been tested. Participants at a roundtable held for this project, many of whom were involved in policy making at the centre of government during the pandemic, agreed that this was difficult. However, they expressed frustration that more effort was not put into exploiting natural experiments, or even initiating trials, to ascertain the impacts. This is not the sort of thing that Treasury officials would have been able to do easily themselves, but the department could have drawn on external expertise to help do this.

Commissioning more economic research from the outside, or developing stronger links with academia, possibly via formal emergency committees equivalent to SAGE or standing ones such as SPI-M, would have allowed the Treasury to bring more causal empirical evidence to bear on these important questions. Instead, it relied on what it could produce internally, which tended to involve the sort of macro-level observational analysis that we describe above.

Officials involved in decision making on restrictions expressed to us their frustration about this. One said that the Treasury "tried to rely on high-level macro-graphs and basic theoretical analysis rather than trying to combine proper empirical evidence to help decide between possible options", providing the review of the two-metre social distancing rule as a representative example.[76] In that case, the "Treasury's view was that it was damaging but did not provide any evidence that [changing it] was better or any evidence on the potential impact of other interventions like masks".

Others complained that the Treasury would reject some interventions that had a large impact on transmission but relatively low economic cost, and provide no evidence to support its objection; for example, on self-isolation support payments and working from home.

As we describe above, with the exception of the reviews on two-metre social distancing and 'smarter NPIs', during this phase officials in different departments provided their respective ministers with separate sets of policy advice and analysis, with ministers then coming together to make decisions. With scientific and economic advice being produced separately and – in the words of the then health secretary – only coming together at the prime minister's desk,[77] it appears that each side felt as though it had to take a more extreme position than it would have if there was more of a process to bring different considerations together to reach a compromise.

Overall, when the Treasury (and in many cases other departments on the 'other side' of the argument) did provide analysis during this period, it often appeared to do so in a tactical way. (Although the Treasury denies this, as above, this view of the department's behaviour was shared almost unanimously among interviewees for this research.) This was particularly the case in the late summer and early autumn of 2020, as it became clear that transmission was rising again. Officials may well have just been acting under ministerial instruction – or in accordance with how they thought the minister would want them to act (even if that involved being opaque with colleagues in other parts

of government) – in these interactions, which is why it is so important for the Covid inquiry to focus on how the ministerial–official relationship affected policy making in this period.

In this 'second phase', Treasury actions exacerbated weak central systems for synthesising evidence

It is not primarily a failure of the Treasury that decisions were made in an adversarial way without information flowing freely between different parts of government, and it was not the only department to have acted in a 'tactical' way when coming together with other departments. As argued above and in previous Institute for Government research,[78] the Cabinet Office should bear more responsibility for fulfilling an evidence synthesis function than any other government department. Without a standing analytical function at the time of the pandemic, and huge churn in decision making structures, it took time to build up the necessary analytical synthesis function in the Covid taskforce.

The Treasury was not the only party that detracted from a fully effective UK government response to the pandemic. A lack of clarity about the prime minister's objectives crucially hampered that response, which left individual cabinet ministers to advance their own perspectives. This exacerbated the Treasury's natural instincts by making it difficult to draw together different perspectives from different departments in a constructive way because ministers instead tried strategically to push their perspective at the expense of others'.

An adversarial style of decision making – that is, departments with different priorities trying to win arguments against each other – is not necessarily bad. Constructive challenge with mechanisms to achieve a compromise should lead to better outcomes, helping to avoid groupthink. Treasury ministers themselves were operating in an adversarial environment and may have felt that they had to take a certain position and act as a counterweight to the public health experts, so that 'both sides' were represented in any advice that went to the prime minister and/or cabinet. But there is a difference between disagreeing on the *evidence* and disagreeing on *how to act on the evidence*.

Many of our interviewees suggested that some of the Treasury's actions (many of which may have been due to ministerial decisions) actively undermined attempts early in the pandemic to build a stronger synthesis function at the centre of government. Most significantly, the Treasury shut down attempts to have some sort of structure that would have pulled together non-scientific (including economic) evidence – in a similar but not necessarily identical way to how SAGE operated. Such a structure would likely have helped to bring together evidence in a more open and collaborative way and helped to reach a common understanding. The Treasury did not need to lead this necessarily – although it likely would have enhanced its influence by doing so – but it should have let it happen.

The Treasury's approach to engaging with other departments – putting forward a strong view while providing little evidence or only doing so in a 'tactical' way – will also have undermined efforts to properly synthesise evidence. Evidence could not be synthesised if it was not made available.

Rishi Sunak's retrospective critique of the government response to Covid – put forward in an interview with *The Spectator* in 2022 was surprising given the behaviour of his department during the pandemic.[79] The former chancellor complained about the absence of a socio-economic equivalent of SAGE, argued that "we shouldn't have empowered the scientists" and agreed with Gus O'Donnell's suggestion of having SAGE report to a higher committee, which would also have considered the social and economic aspects of locking down. This analysis appears inconsistent with the approach taken by the department he led – of shutting down a socio-economic equivalent to SAGE and being evasive for much of 2020 with its economic analysis. As John Edmunds said in response to the *Spectator* interview:

> **Was there an army of economists in universities and research institutes across the country working night and day to collect, sift, analyse and project the possible impact of different policies? And if not, why not? As the Chancellor of the Exchequer Mr Sunak could have set up such a system, but did not.**[80]

In past crises, the Treasury has taken part in, and indeed led, efforts to bring together analysis from across Whitehall; for example, through the National Economic Council formed in response to the global financial crisis. On these occasions it has been somewhat effective. But during the pandemic, many key Treasury officials resisted efforts from those elsewhere in the centre of government to establish closer collaboration.

One notable difference between the global financial crisis period, when the Treasury worked actively with the rest of the centre of government to understand the problems and co-ordinate a response, and the pandemic, when it was more defensive and disengaged, is that during the financial crisis, former Treasury officials held many senior posts in the Cabinet Office and Number 10. For example, Gus O'Donnell (a former Treasury permanent secretary) was cabinet secretary and Jeremy Heywood (another former Treasury official) was principal private secretary to the prime minister. This means that the department may have felt more confident in its ability to influence these structures at the centre of government.

There was no transparency around the economic advice that was informing ministers, in stark contrast to the structures around scientific advice

On the question of how transparent the Treasury was with the public – which is primarily a ministerial decision – about economic advice, interviewees tended to draw comparisons with scientific advice, and particularly that from SAGE. While SAGE has not historically published the minutes of its meetings and research papers during emergencies, it decided to do so for the Covid pandemic from May 2020,[81] in recognition of the high level of public interest in the scientific advice provided to

the government. The government's publication scheme stated that it would publish all minutes and papers within a month of the meeting, and earlier where possible (although it did not always meet this timetable in practice).[82]

The level of transparency around scientific advice was in stark contrast to the Treasury's approach to providing economic advice: as discussed above, very little economic analysis was put out into the public domain. A House of Commons Science and Technology Committee report noted:

> **Measures taken to contain the pandemic had wider and indirect effects, such as on people's livelihoods, educational progress and mental and emotional wellbeing. The assessment of these wider impacts was – and remains – much less transparent than the epidemiological analysis; the people conducting the analysis and giving advice are less visible than epidemiological modelling advisers; and its role in decision making opaque.[83]**

As the government's recently departed chief scientific adviser, Patrick Vallance, told a recent Institute for Government event:

> **It's really important that these things are transparent... I think it's beneficial to have that advice [from SAGE] public and I think it would be beneficial to have other advice public because advice is advice and the decision is a complicated thing... the inputs should be visible and then the decisions and what the output is will be visible and you can see how the two things link.[84]**

Previous Institute for Government and Sense about Science research has highlighted that transparency of evidence is important for good policy making because "without clarity about what the government has looked at, it is very difficult for citizens to understand the motivations for policy, decide whether they agree with it, participate, or consider whether it is working".[85] It is also important because it means that external experts can see where they could add useful information to the policy process.[86] It is for these reasons, among others, that the most successful policy interventions have been those that have incorporated relatively more external scrutiny and input.[87]

While transparency is important for day-to-day government effectiveness, it was particularly important during the pandemic, for two reasons. The first is that the effectiveness of many of the interventions to prevent the spread of Covid – whether they were laws or simply guidance – required individuals to comply with them. As multiple studies have found, the level of trust that the public had in institutions and policy makers strongly influenced compliance with Covid restrictions.[88,89]

The second is that the degree of openness and transparency of government will have a large impact on the degree to which the public trusts policy makers and institutions. This is an intuitive and well-established relationship in general – one that the OECD has long maintained as the basis for one of its 'pillars' for democracy, trust and progress[90] and one that the UK government itself recognises (at least in the

context of data).[91] In the context of Covid, the OECD[92] and academics emphasised that transparent, clear and well-evidenced communication would increase trust among the public, and therefore public compliance with and the effectiveness of restrictions.

At a more basic level, society is made up of 'policy intermediaries' such as headteachers, health visitors, store managers and so on. These agents needed detailed evidence and reasoning to implement some guidance, and to navigate the trade-offs they might face in their own settings about how to implement different strands of irreconcilable policy direction from central government.[93]

A specific case of where a lack of transparency harmed the policy process is when, in November 2020, the Treasury did not provide economic analysis on the impact of restrictions to national policy makers voting on restrictions. The government asked parliamentarians to vote on a new lockdown in the face of rising cases, after it had rejected a 'circuit breaker' lockdown weeks before. It would have been possible for the Treasury to have produced some useful analysis to inform this decision – even if not precise forecasts – but it would have been up to ministers to decide whether anything was shared. No other government organisation, including the OBR and Bank of England, could have provided the sort of analysis that would have supported parliamentary deliberations (because they can only model the impact of stated government policy). But no such analysis was shared with parliament, despite a request from the Treasury Select Committee. Its report captures the adverse consequences of this lack of transparency well:

> **We are disappointed by the lack of analysis provided by the Treasury... Without it, the impression is that the government is making important decisions without proper regard to all their impacts, both on health and the economy. The lack of such analysis also prevents the public from understanding in full the basis for, and impact of, the restrictions imposed upon them... The House should not be asked to take a view on proposals which have far-reaching consequences for the general population, such as those involving restrictions on social interaction, education, movement and work, without the support of appropriate and comprehensive economic analysis.**[94]

As we describe above, making more use of economic researchers outside of government would also have allowed the Treasury to bring more evidence to bear on the crucial decisions being made during 2020. SAGE and its sub-committees were channelling a huge amount of scientific evidence on the estimated impact of various types of intervention into the centre of government during the pandemic, most of which external researchers were doing. Doing the same for socio-economic evidence would have improved the quality and quantity of evidence available to decision makers during the pandemic, but steps to set up formal committees to draw in and commission evidence were deliberately not taken.

Ineffective synthesis contributed to sub-optimal decision making in 2020

Several episodes during the pandemic suggest that the Treasury's approach contributed to problematic policy decisions.

Inconsistency of policy across departments

There were some notable occasions during the pandemic when policies that different departments were running were inconsistent with one another – pulling in different directions. The clearest one involving the Treasury was the Eat Out to Help Out policy in August 2020, which encouraged greater social mixing at the same time as public health officials and others working at the centre of government, according to those we interviewed, were worrying about rising infections. Interviewees working at the centre of government expressed frustration: the Treasury had not told public health colleagues that it was implementing this policy until days ahead of its announcement, which they regarded as a risky move at the time, given the context. Many at that point were worrying about a second wave: the OECD had incorporated such a scenario into its economic forecasts as early as June 2020.[95]

The policy, announced on 15 July 2020, offered the public a 50% discount when eating in restaurants (registered with the Eat Out to Help Out scheme) between 3 and 31 August. The scheme – particularly its stipulation that the discount only applied to meals eaten in restaurants rather than takeaways – provided a clear and deliberate incentive for individuals to get out of the house and increase their contacts with others, thereby increasing the spread of Covid. A study found that this was exactly what happened as "areas with a higher take-up saw both a notable increase in new Covid infection clusters within a week of the scheme starting and a deceleration in infections within two weeks of the program ending".[96] The Treasury tried to refute this analysis via *The Sun,*[97] but did not publish its analysis, or even the data it used, so its claims could not be verified or scrutinised.[98] Its defence relied on correlations between levels of the virus and scheme uptake, rather than attempting to use econometric methods to identify the *causal i*mpact of the policy, as the study cited above had done.

Most of the experts and officials interviewed for this research pointed to Eat Out to Help Out as a significant policy error during the pandemic. As previous Institute for Government research has highlighted, one of the likely reasons that this policy went ahead was that the Treasury did not consult epidemiologists on whether it was a good idea,[99] although Lombardelli has said that she spoke "almost daily" to Chris Whitty and Patrick Vallance.[100] Interviewees also suggested that the idea to pursue the policy was a result of the Treasury not thinking about the pandemic in a holistic way, including the interactions between economic and health outcomes, and instead taking the progression of the virus as given and then designing economic policy without considering how it would affect health. How well the Treasury internalised insights from its engagement with epidemiologists and whether it had a different view on the evolution of the pandemic from government scientists are important questions for the Covid inquiry to consider.

There is no doubt that Treasury officials and ministers had good intentions when designing the policy. In the course of this research, former Treasury officials told us somewhat conflicting stories about what the main objectives of the policy were: some emphasised the desire to support a distressed hospitality sector, which provides lots of jobs, particularly to young people; some mentioned the spill-over benefits to the rest of the high street from encouraging people to eat out; while others still suggested that it was motivated by a desire to incentivise people to lose 'the fear' of the virus. However, all of these aims could have been achieved through other policies (such as further direct subsidies to the hospitality industry) that would not have encouraged people to go out and socialise with those outside their bubble, or perhaps extending the offer to takeaways.

Timing and severity of restrictions

Another example of where ineffective synthesis may have contributed to sub-optimal decision making, which frequently came up in the research for this project, was the timing and severity of restrictions on social activity. With central decision making like a 'tug of war', government behaved as if there were essentially two positions to choose from – the Treasury view or the public health one – whereas there may have been a better option available that compromised on the extremes.

It appears that Treasury ministers' interventions were often successful in preventing the imposition of restrictions. The clearest example of this is when scientific advisers recommended a 'circuit breaker' lockdown in September 2020, which the government ultimately rejected. The minutes of the SAGE meeting on 21 September 2020 show that SAGE recommended that "a package of interventions will need to be adopted to reverse [an] exponential rise in cases", with a shortlist of interventions that included a circuit breaker.[101] As the caseload continued to grow, ministers realised that a lockdown would be necessary, and on 31 October the prime minister announced the second lockdown in England to prevent a "medical and moral disaster" for the NHS.[102]

Although we do not know whether it was the sole factor that determined the decision, we do know that the Treasury strongly opposed the circuit breaker. Those close to decision making told us that this was the view that Treasury officials put forward to them, and Sunak told ITV in March 2021 that "he opposed the circuit breaker Covid-19 lockdown scientific experts recommended in September as coronavirus cases began to climb, but said ultimately the decision lay with the prime minister".[103] Some interviewees also said that the Treasury's position may have led the third lockdown (in January 2021) to be implemented later than it should have been.

As discussed above, those working with the Treasury in central government were often frustrated that these policy positions were not supported by strong analysis on the correct course of action for pandemic policy, taking account of the interactions

between the economy and public health. On the third lockdown, Ian Mulheirn of the Tony Blair Institute (who had developed his own epi-macro model) told the House of Commons Treasury Committee that:

> **If we had put that high R number into any estimate of the impact of the virus on the economy, you would probably have seen that the economic consequences of not acting would have ended up being larger, either because we needed a bigger lockdown for longer – which is what we are now in – or because we did not act at all and the fear factor got bigger and bigger. Either way, the consequences of late action were always likely to be significant.**[104]

We do not know whether Mulheirn was right: it is beyond the scope of this report to judge whether each lockdown policy was the right or wrong decision. However, what we can say is that the process that was used to arrive at the decisions was not one that would likely lead to the best outcomes. The Treasury – likely due to the preferences of its ministers – maintained a consistent position against lockdowns throughout what we have characterised as the 'second phase' of decision making in the pandemic, even when this would appear at points to have been inconsistent with what would be in the best interests of the economy, according to analysis of the economics of pandemics.

To be clear, the point that Mulheirn and others were making is not that we should have been under stricter lockdowns for longer. Rather, the most important feature of restrictions in terms of their ability to suppress a virus is their timing (rather than severity). Taking a more risk-averse approach and moving quickly with restrictions mean that they could be less severe and/or in place for a shorter amount of time, therefore minimising their economic damage.[105] This is a clear finding of even the most basic forms of integrated health–economy analysis that we describe above. Yet with influential Treasury ministers insisting on delays until there was a relatively high probability that the NHS would be overwhelmed, it is likely that this window of opportunity was missed, meaning stronger action was required.

It is also possible that the approach to decision making during 2020 meant that economic considerations, particularly when the risk to public health was apparently very high, did not feed into policy making in the way that they should have. Officials who attended an Institute for Government roundtable on the Treasury's contribution to decision making at the centre of government argued that if the Treasury had created and shared more and better evidence with other departments, or set up a body like SAGE to build up evidence on the economic impacts of interventions and feed that into central decision making, then it is likely that, at a minimum, progress towards 'smarter NPIs' (that is, optimising interventions so that they had the greatest possible impact on transmission and minimal economic impact) would have got much further.

Overall it appears that, for much of this period, an unconstructive, adversarial environment for decision making meant that the Treasury made interventions based on what appeared to be a heuristic that "lockdowns are costly and should be avoided", rather than conducting and providing the analysis to convince others within and outside government of the strength of its views.

The Treasury has become more averse to (sharing) substantial analytical work in recent years

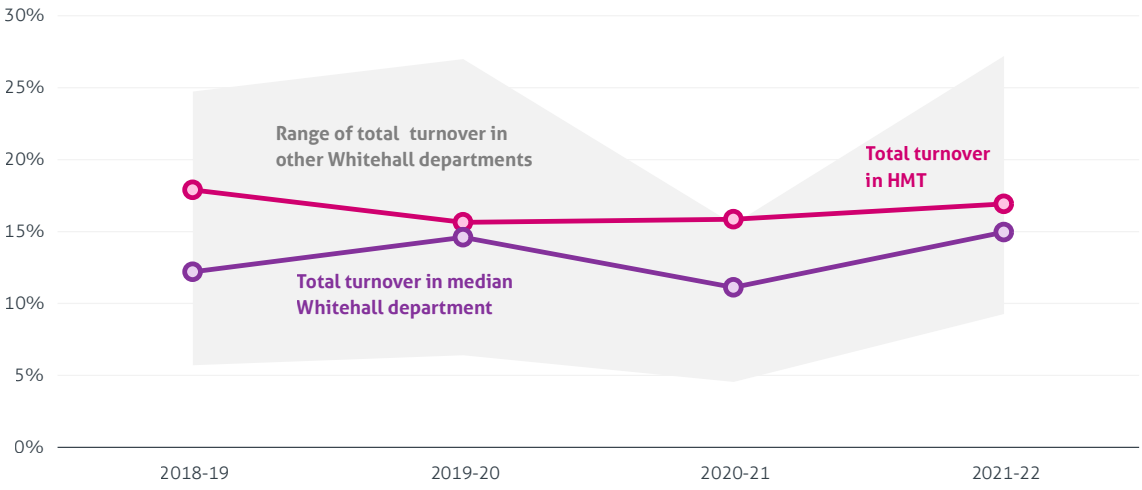
The Treasury is packed with extremely bright, hard-working and dedicated civil servants. Many are attracted to the institution because they recognise how influential it is in the UK government and therefore the beneficial impact that they can have on individuals' lives through their work. Competition for jobs in the Treasury is often fierce.

There are long-standing issues with the way the Treasury incentivises the development of expertise

Despite having a talented workforce, the issue that was raised time and time again in our research was the lack of opportunities that these talented individuals have to develop deep expertise and experience in any specific area. These issues are by no means limited to the Treasury but they do apply to a wide variety of professions within the Treasury. The Institute for Government has previously argued that it is a problem in tax policy making – but measures have been put in place there to try to address this problem.[106] But in the context of the pandemic, the most relevant specialism was technical quantitative economic analysis.

One reason that staff do not develop deep expertise is that they are not incentivised to stay in post. Previous Institute for Government work[107] has highlighted that high staff turnover (people moving between departments) is pervasive across the civil service and undermines its effectiveness. While the Treasury is not the only department to experience high levels of staff turnover, it does have one of the highest rates in Whitehall (Figure 3). One of the most significant drivers of this phenomenon is that staff are not rewarded for staying in post. Instead, they must move jobs to get a pay rise. Those who start off working in a specific job – say on quantitative macro-economics – may have to look for jobs with a different focus if they want to get a promotion, given the relative scarcity of such specialist roles.

Figure 3 **Turnover in the Treasury**



Source: Institute for Government analysis of Cabinet Office, Civil Service Statistics, 2018-22. Notes: Total turnover is the sum of internal transfers and civil service leavers. DHSC is excluded from the range and median of Whitehall departments due to exceptional Covid-related effects. For more information see Clyne R, Savur S, Pope T and others, *Whitehall Monitor 2023*, Institute for Government, 2023.

John Kingman, former second permanent secretary at the Treasury, argued in a speech at the Institute for Government during the pandemic that within the senior ranks of the civil service, "substantial or deep domain knowledge and experience is still not really particularly valued". In a review that he led of the Treasury in the early 2000s, he "suggested that there might be certain topics – corporate tax, say, or pensions, or the energy market – which were core Treasury business but which were also ferociously complex and technical, and perhaps not ideally suited to being left entirely to even brilliant 24-year-old generalists".[108] We would extend Kingman's list to cover technical economics skills, which are necessary for understanding and deploying many of the more advanced techniques that would have been helpful during the pandemic, yet which are likely to require several years of experience or a PhD in specialist fields. The issue of specialist expertise has also been pointed to as a priority area for the Treasury in various reviews of the department, including the internal review of its response to the financial crisis[109] and an earlier capability review.[110]

There is evidence that the Treasury has taken steps to boost its economic analysis function in recent years. The economics group, which leads the department's analysis of the economy, has grown rapidly over the last decade. This has included new teams devoted to, for example, the analysis of economic risks and the application of new tools such as the computable general equilibrium (CGE) model used for Brexit and climate change analysis. The department also offers (relatively modest) pay top-ups to those working in analytical jobs who have a relevant postgraduate degree. These are welcome steps but unlikely to address the fundamental issues of experience and expertise, which are likely to require new roles outside of the conventional hierarchy and greater pay flexibility, as Kingman suggested in his 2003 review of the Treasury, and which we repeat in our recommendations in Chapter 4.

The department has provided mixed messages about what capabilities it actually has

As the Treasury's initial memorandum of understanding with the OBR made clear, it was always envisaged that the Treasury would retain the ability to maintain, develop and use a large-scale macro-economic model for short- and medium-term analysis. That memorandum of understanding stated that:

> **The Treasury have constituted a dedicated Model Unit, reporting directly to the Chief Economic Advisor. The Model Unit will be responsible for fulfilling HMT's obligations to maintain and develop the [Treasury's large-scale macro-economic] model set out in this memorandum, as well as using the model and other analytical tools to help the Treasury provide economic advice to the Chancellor as and when is required.**[111]

However, the Treasury's Model Unit has declined in size over recent years, according to interviews with former officials. They interpreted this as the department placing less emphasis and spending less resource on maintaining this particular capability. However, the Treasury outlined to us that the overall amount of resource devoted to modelling has not reduced and that other modelling capabilities have been built up in other teams, such as the use of CGE modelling, including in the analysis of the potential impacts of Brexit and the net zero transition. The department also told us

that, in addition to the large macro-econometric model that it jointly maintains with the OBR,[112] it also uses the NiGEM macro-economic model maintained by the National Institute for Economic and Social Research.[113]

We do not know based on our research how these models were used during the pandemic (nobody outside the Treasury could point to any analysis that had made use of them), though they could in principle be used to simulate the macro-economic effects of policies, and potentially form part of an epi-macro model. The department also said that it has the capability to do input–output modelling, which makes use of input–output tables[114] to estimate how an impact on one sector may 'pass through' to others in the economy; as well as labour supply and micro-simulation modelling. Again, we are unable to say if or how this was used during the pandemic. But the Treasury told us that all of the above techniques were extensively used internally for analysis and advice.

In recent years the then permanent secretary and chief economic adviser of the Treasury have made statements to the Treasury Select Committee, stating in 2018 that "in the Treasury and across Whitehall there is no short-term forecasting macro capability any more".[115] We, along with many of the interviewees for this project, took this literally to mean that the Treasury does not have the capability to produce forecasts. While recognising that only the OBR can produce 'official forecasts', it would be necessary for Treasury analysts modelling the impact of alternative policy options to use the same methodological and analytical toolkit (for example, macro-economic models). No short-term forecasting capability would imply no capability to produce forward-looking scenarios for the economy, or to consider the future impact of a range of lockdown strategies – two of the three types of analysis that we have argued were crucial during the pandemic.

However, a letter from the then permanent secretary to the chair of the Treasury Select Committee in January 2021 said that the Treasury "retain[s] a significant macroeconomic capacity, which we use for a variety of purposes: for example, policy advice to ministers, including for fiscal events; stylised projections to analyse different policy options (such as alternative paths for fiscal policy)".[116] In response to an earlier draft of this report, Treasury officials also highlighted to us the capacity the department still has for 'scenario' analysis and nowcasting.

We remain confused about the actual state of technical macro-economic capability within the Treasury. It is clearly capable of producing good technical work, such as the use of the CGE model for the 2018 long-term Brexit analysis, but that involved bringing in modelling expertise from outside of the department. While we know that some officials had begun working on epi-macro modelling during the pandemic, we do not know how advanced this work was, or whether these capabilities existed because the Treasury had been actively developing its macro-economic capability or simply got lucky with the skills of staff it had happened to hire just before the pandemic. The department should clarify what capabilities it actively maintains in-house and, if it does "retain a significant macroeconomic capacity" as was claimed in 2021, take steps to reconcile that with what was previously said to parliamentarians in 2018.

There is also an increasing reluctance to share analysis

The more significant issue seems to be with how and whether the Treasury shares its analysis with other departments and the public. It appears that the Treasury – or at least ministers in charge of the department – have been scarred by its recent experiences in publishing significant analytical work, most notably on the economic consequences of Scottish independence in the context of the 2014 referendum,[117,118] and the department's pre-referendum analysis of the economic impacts of Brexit.[119,120]

In the case of the analysis of the immediate consequences of Brexit, the scenarios highlighted in the Treasury's analysis did not match what ended up happening, and the department came in for criticism.[121] The reason the analysis did not match reality was largely because the assumptions in the analysis around how Brexit would be implemented did not line up with how the process ended up panning out, although it is beyond the scope of this report to come to a judgment on this. The way in which politicians communicated the results of the analysis also exacerbated the apparent problems with the Treasury's analysis, rather than the problem being the quality of the analysis itself.[122] What is important is that the department – for whatever reason – was subject to a lot of criticism for its published analysis and our interviewees suggested that this meant senior officials had much less appetite to undertake similar projects in the future, including during the pandemic.

Relatedly, the Treasury's economic analysis often has a habit of getting into the media without the blessing of senior officials and ministers. Many leaks were mentioned during our research for this project. Two of the most common examples were:

- the leak of (another set of) Brexit analysis to BuzzFeed in 2018[123] – the government was subsequently pressured into publishing this in full

- *The Telegraph's* publication of internal Treasury scenarios for the economy and public finances in May 2020, which were used to advise the chancellor on possible paths for the pandemic but not shared with many others in government as we discuss in further detail above[124] – interviewees who worked in the Treasury during 2020 said that this leak led to much stricter controls on who was permitted to see the Treasury's economic analysis, within the Treasury as well as in other departments.

These experiences have led the Treasury to conduct less of its own analysis – or to guard it extremely closely if it does do it – for a few reasons. One is that partial analysis (such as that leaked to BuzzFeed in 2018) or work that was never meant to be published (such as the 2020 Covid scenarios) will leak or be subject to requests under the Freedom of Information Act 2000.

The second concern of officials is that once Treasury analysis is in the public domain – intentionally or not – it runs the risk of damaging the department's reputation, especially if the subject is politically controversial and if the prediction turns out to be wrong (which, to some degree or another, is almost inevitable with predictive analysis).

Jill Rutter says that the department's role in producing Brexit analysis "opened up the Treasury to the charge that it was an active player in 'Project Fear'".[125] She argues that this would have consequences for ministers as well, particularly Conservative ones, who became more suspicious of official analyses. In this context, Treasury officials may have quite justifiably been concerned about the potential risks for the politicisation of their analysis in the context of Covid, in which debate was just as polarised as that over Brexit.

Again this raises important questions – that we cannot fully answer based on evidence available to external observers – about how ministerial–official relationships affected what analysis was done during the pandemic and how it was used. Our knowledge of what was done in the department is thin: for example, while we know that some officials were doing epi-macro work, we do not know how much resource was provided for this work by senior officials, or whether in fact senior officials commissioned it or junior analysts led it, or whether it was used in policy advice and why.

4 Recommendations

The Treasury excelled in many aspects of its response to the pandemic. The department led the design and implementation of several major policies that helped to cushion the economic impact of Covid and the associated public health restrictions, such as the CJRS, SEISS and the various business loan schemes. It is not yet – and may never be fully – possible to quantify the precise impact of these schemes and their value for money. But they undoubtedly averted mass unemployment and widespread business failure. This response was made possible by:

- the Treasury's talented, dynamic and hard-working staff
- some notable examples of effective collaboration with delivery departments
- judicious repurposing of existing data and systems to get support to those who needed it as quickly as possible.

But there were also important shortcomings in the Treasury's actions during the pandemic, particularly in how it used and shared its macro-economic analysis and worked with other departments on cross-cutting pandemic policy. These stood in the way of the UK government being as effective as it could have been. Rectifying these shortcomings would help improve policy making in 'normal' times and ensure the department is better prepared for future crises, whatever they may be.

Changing the relationship between officials and ministers

Our research suggests that one of the key problems during the pandemic was that Treasury civil servants may have focused too much on producing evidence that supported (their perception of) ministers' existing views, rather than providing fully objective analysis. This fits with previous Institute for Government work has described more generally "a culture of generalists who can act as ministerial 'fixers'".[1] At a minimum, ministerial influence, combined with a weak centre of government (discussed next), meant that whatever evidence was produced was not shared with all those who needed it or synthesised effectively, which is likely to have hampered effective policy making. After some bruising experiences in recent years, the Treasury has been averse to the risk of undertaking substantial analytical projects that may end up in the public domain.

Civil servants should be better incentivised to deliver high-quality, objective advice to ministers. As the Institute's *Whitehall Monitor* has documented, relationships between ministers and officials have created a difficult environment across government in recent years.[2] This has particularly been the case within the Treasury, given increased scepticism among ministers about the value and objectivity of the department's analysis.[3] This situation has heightened the risk that officials are incentivised to produce analysis and advice that accords with (their perceptions of) ministers' prior beliefs.

The recommendations we make below for reforming the roles of chief scientific adviser (CSA) and director of analysis in the Treasury, and publishing Treasury analysis more openly, ought to help with this. Civil service management practices should also be altered to make clear that – as in other careers – if a senior policy official is responsible for poor advice that results in poor outcomes, this should be reflected in their career development.[4]

The problem of weak accountability for the quality of policy advice is not unique to the Treasury, as a previous Institute for Government report, *Better Policy Making*, set out: "There is no clear individual in each department with the time or authority to take responsibility for the quality of advice that goes to ministers."[5] To further foster stronger accountability for the quality of advice, a new civil service statute should make it clear that civil servants' role in 'serving the government of the day' includes **a duty "to provide rigorous, high-quality and impartial advice to the government of the day and on the wider context in which those policies will be implemented"**.[6] A duty to publish policy advice would likely need to accompany this articulation of the role of the civil service, or at least a duty to publish the evidence that underpins the advice, which would be a powerful incentive to ensure that advice is high quality, discussed further below. Civil servants are currently able to avoid much external scrutiny.*

Strengthening the Treasury's contribution to the centre of government

The Treasury must be more open and collaborative with other government departments and the rest of the centre of government. A common complaint from those who worked closely with the Treasury during the pandemic, particularly on decisions around social restrictions, was the Treasury's reluctance to engage with other departments and, when it did, it often refused to fully disclose the details of its analysis and thinking on a subject.

Recognising that the Treasury may often be reluctant to engage with other departments, **the Cabinet Office needs to be strengthened to ensure it has the authority to help break down departmental silos**. With the authority of the prime minister and cabinet secretary, a strengthened Cabinet Office should have the ability to compel departments – including, crucially, the Treasury – to work constructively together in a sustained manner, through, for example, ministerial working groups and joint units at the official level.[7]

Working relationships could be improved by the Treasury having greater involvement in joint units at official level, which are more common between other government departments. A strong and collaborative official-level working group (such as the late-2020 Covid taskforce) can dramatically improve the joint development of analysis and policy advice. Many of the important issues that the Treasury is grappling

* The civil service–ministerial relationship is a priority research area for the Institute for Government – interested readers can find more analysis and recommendations in Rutter J, *Relationship Breakdown: Civil service–ministerial relations: Time for a reset*, Institute for Government and the Bennett Institute for Public Policy, 2022, www.instituteforgovernment.org.uk/publication/civil-service-ministerial-relations and Thomas A, Clyne R, Bishop M and Lilly A, *A New Statutory Role for the Civil Service*, Institute for Government, 2022, www.instituteforgovernment.org.uk/publication/report/new-statutory-role-civil-service

with at the moment have a range of complex causes that touch on issues across many departments. The Treasury could benefit from working with analysts from other departments to understand the root causes better. **The Cabinet Office would benefit from having a stronger standing analytical function for domestic policy issues.** The analytical function of the Covid taskforce played a crucial role during the pandemic in synthesising evidence at the centre of government, but it took many months to start working effectively. It is important that the Cabinet Office has this capacity for future prolonged crises, but such a team could also serve a useful function in 'normal' times, ensuring that analysis from different departments is properly shared and synthesised to support cabinet decision making.

An important part of cross-Whitehall collaboration to tackle issues (particularly crises), is the **separation of synthesising evidence from policy advice and decision making**. This clear separation during the 'third phase' of decision making in the pandemic – where departments came together to agree on a broad evidence base – is what encouraged greater collaboration between departments, which felt that they could discuss the evidence openly without having to cut across their ministers' policy preferences and choices.

There may sometimes be understandable reasons why the Treasury is reluctant to share or discuss analysis with other departments or perceives that maintaining a more distant role strengthens its hand. This is presumably why the department shut down suggestions to have a structure in the centre of government pulling together evidence from economics and other social sciences in the early stages of the pandemic. But too often this approach achieves the opposite – making it harder to achieve the best outcomes and weakening the Treasury's ability to convince others in government of the strength of its arguments.

Maintain good cross-department working practices that evolved during the pandemic

There were many excellent examples during the pandemic of the Treasury working closely with other parts of government, particularly in designing and delivering some of the economic support schemes. This joint working built on existing frameworks – such as the tax policy partnership with HMRC – but its nature was much closer during the pandemic. **The Treasury should maintain the closer working relationships with HMRC and the Bank of England that developed during the pandemic**, including ensuring where possible that delivery experts are in the room with ministers to make sure that suitably qualified people are able to triangulate properly between the policy intent and what is feasible.

The tax policy partnership between the Treasury and HMRC is long established and works well but has not always entailed quite such close working and trust as developed during the pandemic**. Sustaining what was achieved during the pandemic will require effort from senior officials and ministers in the Treasury and HMRC**, particularly as staff move jobs and the personal connections built during the pandemic are lost. Senior officials should think carefully about how new trusted relationships

can be forged; for example, by reinvigorating the interchange of staff between the two departments – which was envisaged as an important part of the tax policy partnership but has diminished over time.[8]

In other areas, the Treasury's approach to working with other departments during the pandemic was far less constructive. An adversarial approach to advising ministers during the pandemic led to poor-quality advice.

Formal structures for evidence gathering in a crisis

The Treasury and the rest of the centre of government should also ensure that there is a more organised process to draw in socio-economic advice from outside government during crises, in a similar way to how scientific advice was drawn in through SAGE before being put to ministers. This would help in two ways:

- It would increase the analytical capacity of the government by making use of external resources.

- It would enhance the synthesis of different types of evidence, which we argue was sorely missing at the centre of government during the pandemic.

Some have suggested that economists and social scientists should have attended SAGE, but this would likely have left one body with too much information to process and a great deal of responsibility. A more practical approach would involve a parallel committee to SAGE on socio-economic issues. Another group – involving officials as well as possibly a subset of the members of SAGE and the socio-economics committee – could then draw together the evidence, identifying where the key trade-offs and complementarities are between different objectives.

Stronger use of evidence in the Treasury

Improving leadership and oversight of the use of evidence

The Treasury is supposed to be the centre of expertise for macro-economic analysis and policy making within the UK government. But the pandemic highlighted a need for stronger connections between the department and external research expertise, more robust oversight of the quality of analysis done within the department and a clearer distinction within the department between objective, impartial analysis and policy choices. On the last of these, we do not mean that analysis should be separated from policy advice – it is important that policy needs inform any analysis done and that evidence is fully integrated into policy development – but rather that there is a clearer distinction in officials' and ministers' minds between objective, impartial evidence and analysis (which should not be cherry-picked and about which there should be limited disagreement) and policy choices based on that evidence (where individuals' views may differ and be more grounded in ideological beliefs).

The Treasury should overhaul the role of chief scientific adviser

There is a real need for someone in the Treasury with strong research knowledge and links to external experts, who has the freedom and authority to make the case for more systematic use of the best available evidence, whether or not it adheres to ministers' prior beliefs.

Departmental chief scientific advisers (CSAs) are supposed to serve this kind of role – providing "an independent challenge function to their department, ensuring that science and engineering evidence and advice is robust, relevant and high quality".[9] CSAs play an important role in:

- increasing scientific capability in departments
- developing links to researchers outside government
- upskilling policy teams to understand what research is being done elsewhere and how to use it in policy making
- ensuring adherence to the standards expected on the use of evidence in government.

CSAs are also responsible for drawing up and publishing a department's areas of research interest, which are supposed to highlight to external researchers those issues that are of interest to the department and help inform the allocation of public research funding through UK Research and Innovation (UKRI).

Civil service guidance states that "a CSA should usually be a distinguished external scientist or engineer, recruited externally... [because it] is an advice role that derives authority from knowledge, the ability to convene respected authoritative groups, and personal standing in the scientific world".[10] Since these people usually continue to hold some kind of external academic post while serving as a CSA, they typically have more freedom than full-time, career civil servants to speak openly about their views on the evidence.

The CSA guidance is framed in terms of 'science and engineering' expertise. But it is clear in the way these roles are used across government that CSAs can be drawn from any discipline and can and do provide advice, leadership and connections, not just on hard science or engineering but also on social science and humanities research, to ensure that policy makers access and make the best use of the full array of research and evidence that is relevant to them.*

The Treasury has never had a CSA in this mould.** Exactly how the CSA role is fulfilled varies across departments, but the Treasury is unique in recent years in having a CSA who: had no scientific background; was recruited from within the civil service, rather than being an established external expert;*** and had no dedicated portion of time allocated to the role as CSA.

* For example, the former Home Office CSA Paul Wiles is a criminologist and the current Home Office CSA Jennifer Rubin is a social and political scientist.

** The Treasury has long been an outlier in these regards, with the House of Lords Science and Technology Committee raising similar points in an inquiry in 2012; see House of Lords Select Committee on Science and Technology, *The Role and Functions of Departmental Chief Scientific Advisers*, The Stationery Office, 2012, www.parliament.uk/globalassets/documents/lords-committees/science-technology/CSAs/CSA-Report.pdf

*** Currently only one other CSA is an internal appointment – Trevor Huddleston, chief scientific adviser and chief analyst at the DWP. The previous incumbent at the Department for Education (Osama Rahman) was also an existing civil servant.

Instead, the person who held the CSA role during the pandemic – who has recently left the post – stated that he held the role because he was "the official with responsibility for science and R&D spending and allied matters such as innovation".[11] But government spending on, and policy towards, science and R&D in the wider economy is very different from the question of how scientific evidence is used in the policy making process, which is supposed to be CSAs' focus.*

The Treasury should address this gap by appointing a recognised external expert – with strong research training and knowledge, and strong networks and reputation in areas relevant to the Treasury, such as macro-economics and quantitative economics – to be the departmental CSA. This person should build stronger links between Treasury civil servants and external researchers and help ensure that the department is aware of the latest research developments. This model would be somewhat akin to how the Bank of England and the OBR are set up, where prominent academics serving on the Monetary Policy Committee and Budget Responsibility Committee (respectively) provide strong intellectual leadership. As one of our interviewees put it, the prospect that one of these people will look at their work encourages analysts to "raise their game".

None of this is intended as a criticism of the Treasury's recently departed CSA, who has carried out the role admirably given his expertise and other responsibilities.

At the moment, the Treasury's chief economic adviser takes on some of this role – championing economics in government as the joint head of the Government Economic Service and providing professional leadership for economists across the Treasury. However, this person also leads major policy teams advising ministers on the macro-economy, fiscal policy and growth, and the macro-economic and micro-economic implications of wider policy issues, as well as leading the Treasury's relationships with the OBR, Debt Management Office, Bank of England, IMF and OECD. These are substantial responsibilities, meaning this person cannot be expected also to build and maintain networks of academic contacts and to remain at the cutting edge of research developments or to independently challenge the robustness and quality of evidence used across the department. There is therefore a need for a reformed CSA role to complement the work of the chief economic adviser.

The Treasury's new CSA should also remedy the current absence of departmental areas of research interest. The Treasury is, to our knowledge, the only department that has never published any areas of research interest, as we have flagged in earlier work on tax policy making.[12] This is an important omission, given that the Treasury has principal responsibility for several critical policy areas – notably macro-economics and tax.

* In addition to the problems with the use of evidence highlighted in this report, another symptom of the shortfalls in the Treasury's current approach to the CSA role is that it continues to be the only department that has not published any areas of research interest. These lists are supposed to provide external researchers and UK Research and Innovation (UKRI, which is responsible for allocating public money for research) with an indication of the issues that are of interest to policy makers. Compiling these lists is one of the responsibilities of the CSA.

The Treasury's director of analysis should enforce analytical standards across the department

Most departments have a dedicated director of analysis, responsible for overseeing the generation and use of analysis across the department and acting as the head of the analysis function for the department. The civil service analysis function covers:

- actuaries
- data, digital and technology professionals
- economists
- geographers
- operational researchers
- social researchers
- statisticians.

The directors of analysis provide an independent line of support and accountability for the quality of analysis produced and used – separate from individuals' role within and contributions to policy and delivery teams.

Directors of analysis are supposed to enforce analytical standards, such as those laid out in the *Aqua Book*,[13] the *Green Book*[14] and the *Magenta Book*.[15] This includes, for example, ensuring that any analytical models are properly documented and that someone has clear responsibility for their quality and how they are used. It also includes overseeing the use of appraisal and evaluation in the department to ensure the costs, benefits and risks of alternative ways to meet government objectives are assessed and that any intervention's design, implementation and outcomes are properly evaluated.

The Treasury has not adhered to this model in the past. The vast majority of analysts in the Treasury have typically been economists, rather than drawn from other analytical functions – although this is starting to change with the recruitment of more data scientists. The role of director of analysis has been held for many years by the person who also serves as the director of the economics group within the Treasury. This person has a full-time job leading a team of around 100 to provide economic analysis and policy advice to support the government's objective of delivering sustainable economic growth. This has left little capacity to serve a wider role in ensuring high analytical standards across the rest of the department.

The Treasury's director of analysis should be given the time and responsibility to oversee good-quality analysis within the department, advocate for the importance of that at board level, and ensure analysts working in the department uphold the analysis function standards.[16]

This role should be at least director level and potentially director general level. To ensure this person has the ability and standing to challenge analytical standards and rigour across the Treasury's policy areas, they should report directly to one of the department's permanent secretaries, rather than to one of the directors general. They should be given responsibility for ensuring the Treasury maintains the analytical expertise that it needs.

A new statutory duty to maintain expertise

To further guard against an erosion of expertise in the Treasury and to help ensure that the Treasury (and all other departments) puts in place the preparations needed to respond to future shocks (as discussed elsewhere in this report), **senior officials could be given – through a new civil service statute – a duty "to maintain and build internal capability to serve current and future governments"**. This would make the Treasury's senior officials answerable for their investment in skills (within the budget envelopes that ministers set) and responsible for ensuring that the civil servants in the department are able to meet the needs not just of the current government but also of future governments.[17]

Creating specialist economist roles

We have discussed above the long-standing issue in the Treasury – and elsewhere in the civil service – of problems developing officials' expertise and experience. While, as we argue elsewhere in this report, there is a case for many Treasury officials being strong generalists who can turn their attention to issues as they arise, the department also requires what John Kingman described as "deep domain knowledge and experience".[18] We have highlighted technical macro-economics as one area where we – and most of our interviewees from inside and outside government – think that the Treasury needs more senior specialists. We have previously made a similar argument in the context of tax policy making,[19] while Kingman pointed to pensions and energy markets.[20] The Treasury was keen to emphasise that there are many roles in the department reserved for trained economists. But progression to senior ranks in the department still requires individuals to perform well against a general competency-based assessment and to demonstrate managerial skills and take on these non-technical responsibilities.

The Treasury should **establish a set of specialist roles across all experienced and senior grades for technical economists and policy experts.** In line with recommendations for the civil service more generally, outlined in an earlier Institute for Government report, *Opening Up*,[21] the Treasury should have more senior specialist roles available, particularly for technical economists. Those working in the economics and fiscal groups, for example, cannot progress to Grade 7 or higher (a level that someone on the 'fast stream' might hope to reach with about three to five years' work experience) without taking on significant management responsibilities. There are currently only a handful of individuals who are exceptions to this rule; in all cases, those individuals' roles in the Treasury have evolved more through accident than by design. The Treasury should use a model similar to that which the Bank of England uses, where officials can reach the equivalent of 'division head' purely based on technical abilities, without taking on management responsibilities. A starting point would be to create specialist roles within the Treasury up to the equivalent level

of deputy director, the most junior rank within the senior civil service. Ultimately, it will be important for technical experts to progress to at least director level as well to ensure that people with this expertise have enough clout in shaping the department's approach and use of resources – including the reformed director of analysis role described above. These specialists could play a significant role in commissioning advice and advising other Treasury analysts on their research strategies and building external networks.

Officials should be given opportunities to develop their technical skills. The Treasury already funds some officials each year to undertake master's degrees and the Government Economic Service offers training for economists. But this is not enough to develop all the types of technical expertise the department needs. The department should consider how to help officials reach the next level, potentially through closer partnerships with economics departments in universities, providing opportunities for secondment (in both directions) and potentially PhD studentships (BEIS is currently trialling something like this with Manchester Business School). This would also enhance links with academia, further contributing to the expertise available to the department.

This would likely require greater pay flexibility. The Treasury offers a modest 'analyst allowance'. The Treasury has told us that there are currently more than 100 people in receipt of this allowance in the department, receiving an additional average of £3,200 a year each. But – particularly for senior specialist roles – it will need to consider even greater pay flexibility to attract suitably skilled individuals. This is particularly relevant for quantitative economists and finance specialists, who are very highly paid outside the civil service. Rewarding expertise should mean that officials are less incentivised to move around to different jobs. Churn is a huge problem within the civil service, but particularly so for the Treasury.[22] Rewarding expertise should go some way to solving that problem.

Having said that, the Treasury has historically been able to attract technical experts – at least for a few years – by offering the opportunity to work in exciting, highly relevant and unique roles. **The Treasury should offer the opportunity for technical experts to work on administrative data (which HMRC often holds) and publish in academic journals and make clear (both internally and externally) how technical expertise is valued at the highest level in the department to encourage more technical experts to work in government.** Many technical economists are attracted to working on public policy questions and money is not the only factor affecting where they choose to work. Academics are also attracted by the ability to use interesting and unusual data, particularly if they could eventually publish their results in academic journals; many worry that if they cannot publish, they will never get back into academia. Other parts of government, notably DHSC, have frequent interchange with academia, in no small part because a stint in government is more clearly beneficial to health academics than is currently the case for economists. There are important differences between the ways that publishing and career progression work within health and economics academia but there are nonetheless changes the Treasury could make to ensure a stint working in the department is more attractive to technical experts than it currently is.

The Treasury would also benefit from encouraging other departments to establish similar senior specialist roles. This would mean that, even in the case that officials still feel motivated to move teams or departments, the presence of senior specialist roles should mean they remain tied to their anchor of technical economic analysis. This would enable the development of a network of senior specialists over time. The Treasury, and Whitehall more generally, should also consider how to enable and encourage the sharing of expertise and experience across departmental boundaries.

A promising development in this regard is the Darlington Economic Campus, which brings together officials from the Treasury, BEIS (now DBT, the Department for Science, Innovation and Technology (DSIT) and the Department for Energy Security and Net Zero (DESNZ)), the ONS and five other government departments and arm's-length bodies, and offers an opportunity for quantitative economic experts from multiple departments to work together. It also offers the opportunity for individuals with these skills to move between roles in different departments that make use of their expertise without having to move to a new part of the country (as might currently be the case if someone wants to move from, for example, the Treasury to the ONS). Such a model may also naturally lead to more cross-Whitehall working: in the course of its work on civil service relocation, the Institute for Government has been told that the Treasury senior team in Darlington has been notably more collaborative with other departments than its London counterparts.

A more open analytical culture within the Treasury

A lack of transparency from the Treasury with other departments during the pandemic prevented government from operating as effectively as it could have done. The quality and range of evidence that the department used would be improved by opening it up to greater external scrutiny. Under current arrangements, this is a ministerial decision. We argue above that analysis – and probably policy advice (under certain conditions) – should be published. But there are a number of other steps that the department could take.

Building stronger links with external experts

Before the pandemic the Treasury's connections to academics were patchy and ad hoc. During the early months of the pandemic, the Treasury did arrange for a variety of academic experts to talk to officials about some of the issues that they were grappling with. But before, during and since the pandemic, the Treasury has maintained a largely one-way flow of information – absorbing presentations from academics but being unwilling to open its own analysis and thinking to discussion with academics. To be clear, we are talking about the analysis that officials are producing, not necessarily the advice that the department provides to ministers, about which there may understandably be concerns around sensitivity that should not necessarily apply just to analysis. This secrecy hugely reduces the value of any contact that officials have with academics.

Particularly given the rate of staff turnover in the Treasury, **the department should develop more formal expert networks** to ensure officials know and access relevant people. As an earlier Institute for Government report, *Ways to Improve Engagement Between Government and Academia*, argued, "Responsibility for establishing such

a network should lie with the chief scientific adviser and the head of the analytic professions, but with the active involvement of the departmental head of the Policy Profession to make sure that the network is used by policy professionals as well." There are various ways the department could do this, including the following:[23]

- It could create a centrally managed, department-wide list of experts – as the Department for Environment, Food and Rural Affairs (Defra) has – to provide staff with people to call up for advice, or to provide further routes into academia.

- It could fund externally managed networks, which can act as a hub for people with expertise on specific topics. A network of this sort – the Economics Observatory – was created during the pandemic to bridge "the gap between academic research, government policy and the general public", managed by a team at the University of Bristol, with ongoing funding from the Economic and Social Research Council.[24] But the Treasury has no direct involvement in the observatory, meaning it is not necessarily well tailored to the specific interests of the Treasury and, given the current funding model, the Treasury has no guarantee that it will continue to exist.

Being more open about Treasury analysis

Greater openness may initially prompt some difficult questions for the Treasury, but over time it should improve the work the Treasury produces – in turn providing more helpful input to policy decisions – and allow the department to recognise more openly the uncertainties under which its ministers must make decisions.

Failure to be clear about the evidence underpinning policy decisions is a widespread problem across Whitehall, as the *Transparency of Evidence* review carried out by Sense About Science made clear.[25] The Treasury, like many other departments, can and should do better.

The Treasury should **publish more of its research** (although not necessarily policy advice) in a timely way. This could be done **through a discussion and working paper series on policy-relevant analytical topics, managed by a research unit**. The Treasury used to produce such working papers to provoke discussion among external experts and improve its analysis. This happened periodically from 1977 – including during Margaret Thatcher's,[26,27,28] John Major's[29] and Gordon Brown's premierships.[30,31,32] Under Tony Blair's premiership, the department even published two books co-edited by Gus O'Donnell (then the permanent secretary of the Treasury) and Ed Balls (Gordon Brown's political adviser in the department) setting out detailed approaches to economic policy making.[33,34] But it has not, to the best of our knowledge, been done for the past decade or more. **A blogging model – similar to Bank Underground produced by the Bank of England – should also be considered.**[35] This would allow the department to be more transparent without it getting bogged down in the difficulties of not having time to bring analysis up to near-academic standards.

Publishing policy-relevant analysis sidesteps some of the issues involved in publishing policy advice in full but would still open the department's way of thinking on key issues to external scrutiny and provide it with a channel to get feedback from external experts. Other countries provide a model of what is possible. The New Zealand

Treasury publishes information and analysis in various forms, including a fortnightly economic update, discussion papers to stimulate debate on policy areas, a working paper showcasing new empirical research on the New Zealand economy, and shorter and easier-to-read analytical notes. All publications from the New Zealand Treasury are subject to a disclaimer that they do not represent official government policy.[36] There are other models where a specific part of the ministry – separated from the officials producing policy advice – generates and publishes policy-relevant research. Japan's Ministry of Finance, for example, has a Policy Research Institute (PRI). The PRI was established in 1985 and its president describes it as "a think tank of [the Ministry of Finance]". It conducts research on finance and economics, engages with overseas research institutions, provides technical assistance to developing countries and conducts economic surveys on Japanese businesses. It also acts as a centre of expertise, providing training to officials in other parts of the ministry.[37]

There are arguments in favour of encouraging departments also to publish policy advice in full, after a suitable lag. As earlier Institute for Government work has argued:

> If civil servants and ministers knew that, within a reasonably short period, their most important advice and the decisions based on that advice would be published and scrutinised by a committee of officials or parliamentarians, it would encourage a more serious evaluation of options and hold policy makers to a high standard of evidence analysis and discussion.[38]

This would also make going into government more attractive to external experts, who could point to what they recommended and why. However, it is also important to protect the private space that ministers need to take decisions. While publishing advice in principle would likely have a net positive impact on policy making, further work would be needed to establish exactly what advice should be published before any decision was made to embark down this road – although the New Zealand Treasury provides an international example of where this is done.

Improving the quality of the analysis that the Treasury produces and uses is important not only for the quality of policy that the department develops but also for wider government, since the Treasury ought to be setting an example for high-quality analysis across government. It is responsible for maintaining and overseeing the sets of guidance on the use of analysis within policy making: the *Magenta Book* guidance on the design of evaluations after policies have been implemented; the *Green Book* guidance on how to appraise and evaluate potential policies and projects; and the *Aqua Book* guidance on producing quality analysis and modelling in government. But the department often does not follow its own advice.*

* For example, as previous Institute for Government work has highlighted, tax policies are not subject to the same value-for-money scrutiny as the Treasury imposes on spending proposals from other departments, the Treasury permanent secretary never exercises his (and it has so far always been his) accounting officer function for budget spending measures or spending-like tax measures and tax policies are not systematically evaluated; see Rutter J, Dodwell B, Johnson P, Crozier G, Cullinane J, Lilly A and McCarthy E, *Better Budgets: Making tax policy better*, Institute for Government, 2017, retrieved 13 April 2023, www.instituteforgovernment.org.uk/publication/report/better-budgets-making-tax-policy-better. Tax policies are also excluded from scrutiny by the regulatory policy committee. As Sense about Science has reported, the Treasury's transparency about the evidence it has used to inform policy decisions is also poor; see Sense about Science, *Transparency of Evidence*, 2018, retrieved 13 April 2023, https://senseaboutscience.org/activities/transparency-evidence-spot-check.

Resilience and preparedness

The Treasury has many well-established systems for coping with shocks. The department has also made changes before and since the pandemic to strengthen its own risk management processes and how it contributes to efforts at the centre of government to manage risks across government. These are all important and should be sustained. But there are some areas where more could be done to increase resilience and preparedness for future shocks, whatever they may be.

Flexible resources and systems

While some threats can be predicted, the precise shape of future risks is often hard to pin down and there will always be shocks that are unexpected. It will also never be possible to prepare fully for all risks, given resource constraints. Being agile in the face of adversity will, therefore, always be an important factor – including, increasingly, through enhanced digital, data and technology capabilities.

Staffing

One of the Treasury's great successes during the Covid crisis was its ability (in partnership with delivery departments) to rapidly design and roll out major economic support schemes in a matter of days. This was made possible by having bright, motivated staff who could and did quickly turn their hand to what was needed in a crisis, including reallocating staff between teams to provide resource where it was needed. This **flexibility is a great Treasury strength** that should be maintained.

Digital, data and technology capabilities

The Treasury has already expanded its data science capabilities substantially compared with its position in 2019, when it took its first data scientist on loan from BEIS. It has now recruited its first chief data officer and started to build up a team of data scientists to work across the department. These developments are welcome.

The Treasury should continue to develop its digital infrastructure. The Treasury is often a recipient of data from other departments, rather than generating data itself. During the pandemic, this included data that the Insolvency Service had gathered on redundancy notifications and data on job vacancies that BEIS had collected. More recently, the Treasury has been able to make use of data that energy suppliers have provided to BEIS to help understand the impact of high energy prices on households and businesses. The department, therefore, needs to continue investing time and resources to improve the digital infrastructure that supports sharing data and data analysis between itself and other departments, to streamline the sharing of information and collaboration on analysis.

All Treasury officials – including policy officials and economists rather than just data scientists – should be encouraged to think about how new data science techniques can improve policy making. This may require specific data science training for policy professionals. It is particularly crucial that senior civil servants in the department receive adequate training to make them intelligent consumers of and effective advocates for wider use of data science within the Treasury. There are some existing initiatives that the Treasury can draw on – such as the ONS data science bootcamp, the

Government Economic Service apprenticeship scheme (which includes data science training) and courses that the Government Skills and Curriculum Unit offers. The new Darlington Economic Campus is also well located to tap into the data science expertise of the N8 group of universities in the north of England.*

There is scope to use better analysis of existing data to inform understanding of current policy questions and potentially to use more and different data to improve the implementation of current and potential future policies. But it is also important for officials to **think about what data might be useful in the event of future crises and how that data might be gathered**, and perhaps even to start gathering it. The Covid pandemic highlighted many gaps in government data that limited the options for the government's response. This included:

- a lack of timely information on self-employed people's incomes
- an absence of data on where employees work or in what industries businesses operate
- a lack of information on the incomes and circumstances of households (as opposed to individuals) for those who do not interact with the benefits system.

Collecting extra data – or combining existing data in new ways – will incur some cost to government and/or the private sector. It is important that, when weighing up the costs and benefits of additional data collection/collation, the government factors in the potential benefits there might be in the event of future crises.

There should also be a presumption of more collaborative working and more open sharing of data and analysis with other departments, where there are overlapping policy interests, to help improve the quality of analysis and the coherence of policy development. There was an overwhelming perception among interviewees in other departments that the Treasury was unwilling during the pandemic to share details of its assessment of the economy or the analysis underpinning the policy options it advocated. None suggested that this behaviour was specific to the pandemic. The newly created data science team, by definition coming into the department from outside with links to the cross-government data and digital function, should advocate for greater openness and model this behaviour themselves, where they have the licence to do so, to show the benefits.

Build and maintain systems that facilitate a crisis response

The existence of the BBB helped the UK government's economic response to the pandemic enormously. This is a part of government that had the ability to design and roll out guarantees to support large-scale business lending very quickly. The response also built on schemes that had first been developed during the financial crisis. This shows how important it is to have standing capacity that can be drawn on quickly in a crisis. Previous public lending bodies – such as the Green Investment Bank[39] – operated for a period in the public sector before then being privatised. **If a future**

* Durham, Lancaster, Leeds, Liverpool, Manchester, Newcastle, Sheffield and York.

government ever considers privatising the BBB, one of the factors it should weigh in this decision is the crisis insurance that having such capacity and systems available in the public sector provides.

The Treasury should consider **making the BBB accountable to it, rather than to the Department for Business and Trade (DBT).** This would make lines of accountability for future economic recovery schemes clearer, with responsibility for the design, monitoring and evaluation of the schemes all sitting with a single accounting officer. The Treasury oversees financial services and the financial sector, leading, for example, the government's review of patient capital.[40] Interviewees told us that having the BBB managed by the Treasury would make more sense in general; many told us that this is probably how the BBB would have initially been set up if Vince Cable (whose idea it was to establish the BBB) had not happened to be secretary of state for business at the time it was set up.

The Treasury should also work with delivery departments to improve the standing toolkit of crisis response policies that are available to the government, particularly having an improved emergency loan guarantee scheme and a household-level administrative dataset. As we detail above, the government's business support schemes were broadly successful, but existing mechanisms (based on the Enterprise Finance Guarantee (EFG)) were not designed for the speed and scale that were necessary during the pandemic – to achieve the speed ministers desired, compromises on the size of guarantee and extent of credit checks (and thus fraud prevention) had to be made. We agree with the suggestion made in the evaluation of the BBB loan schemes that, to improve the government's response in future crises, the Treasury should consider whether to implement

> an ongoing emergency loan guarantee scheme that could be activated in the event of a future emergency (with a rolling accreditation process) [that] could enable rapid intervention while reducing pressure on the public sector, avoiding adverse effects on competition, and giving greater opportunity to implement fraud prevention mechanisms from the outset.[41]

The absence of a UK household dataset based on administrative data also significantly limits the UK's ability to support incomes through fiscal transfers, and to understand who is in most need of those transfers in the event of an emergency. The UK government has fairly extensive individual-level data from the tax system, for those who pay income tax or National Insurance, and household-level data for some households in the benefits system. But it does not have comprehensive household-level information. This limits the type of support that the government can offer and how well it can be targeted towards households in need. **The government should explore the feasibility and cost of developing a household-level dataset**, including information on income, through, for example, linking different administrative datasets together. The Treasury's support (and funding) would be a key driver of its success. It could have numerous benefits in a range of policy areas. It would have helped to target Treasury support for household energy costs over the past year. This sort of innovation,

though, would not just be useful during crises. A recent Social Mobility Commission report[42], for example, highlights how the absence of a household-level dataset means that the targeting of education interventions for people living in poverty is much worse than it could otherwise be.

One important way in which the Treasury itself can improve the quality and quantity of data available for administrative purposes is to **build up data relationships with other departments and foster trust across government**. A recurring theme from a series of roundtables that the Institute for Government hosted on data sharing during the pandemic[43] was that government departments and organisations often refrain from sharing data for fear of someone else being able to know something about them that they did not know themselves or did not want others to know. In the context of the Treasury specifically, other departments worried that making more data available to the Treasury would potentially weaken spending review submissions and funding availability.

Fully evaluate the policies implemented during the pandemic

It is very welcome that the Treasury has already carried out interim evaluations of the CJRS and SEISS and published them,[44,45] and that the BBB has done the same for the business loan schemes.[46] The Treasury has also indicated its intentions to conduct further evaluations of these schemes, including value-for-money assessments. It is important to do so. These evaluations should:

- examine how future such schemes could minimise the number of people excluded from support
- quantify the longer-term impacts of individuals (not) receiving support
- conduct full value-for-money assessments.

It is also important for the Treasury to ensure that evaluations are done of the other economic support schemes that it led, including the business grants.

All the schemes entailed difficult trade-offs between the need to roll support out quickly and the desire to ensure public money was used wisely by minimising fraud, error and deadweight. It is vital to evaluate what happened to understand whether the trade-offs were as anticipated and whether, with the benefit of hindsight and the time to prepare for the next crisis, there is anything that could have been done differently.

Preparing for known risks

The OBR and the Treasury have well-established processes for looking at economic and fiscal risks and the Treasury plays an important part in wider government risk preparedness – a role that has developed since the pandemic. But there are some areas that could be improved further.

The OBR's analysis of fiscal risks, now contained in its annual *Fiscal Risks and Sustainability Report*, is considered to be world leading.[47] **It is welcome that the Treasury issued a more substantive response to the OBR's latest (2022) *Fiscal Risks and Sustainability Report* than it has done in recent years.**[48] The Treasury published a long and detailed response in 2018 to the OBR's first *Fiscal Risks Report.*[49] But the chancellor offered only a short ministerial statement in response to the 2019 *Fiscal Risks Report*[50] and only a five-page letter in response to the 2021 edition.[51] To ensure that the department remains committed to properly considering and responding to the OBR's *Fiscal Risks and Sustainability Reports*, the wording of the Charter for Budget Responsibility – which currently stipulates that the Treasury "shall respond at a subsequent fiscal event to the annual sustainability report"[52] – should be changed back to saying (as the 2016 incarnation did) that "the Treasury shall formally respond to the fiscal risks statement produced by the OBR no later than a year after its publication date"[53] to provide a clear and binding timescale for the response. Treasury ministers should also commit to publishing a full report in response.

The Treasury Select Committee should invite ministers and officials to give evidence on risk preparedness around the time that the response is published and to ask for updates on progress periodically thereafter. Previous Institute for Government work has argued that the House of Commons should also create a new cross-cutting committee scrutinising management of risk across government; such a committee could also challenge Treasury ministers and officials on their risk preparedness.[54]

The Treasury needs to work more with the rest of government than it did before the pandemic to understand and prepare for risks that are not fundamentally fiscal or economic in nature. The Treasury, much like the rest of government, was not adequately prepared for the Covid crisis, despite a pandemic being the number one item on the National Risk Register.

The Treasury should work with the new Cabinet Office resilience directorate to hold departments to account on preparedness. A key role for the Treasury here is to ensure that departments explicitly consider risk management in their spending review bids, as set out in an earlier Institute for Government report, *Managing Extreme Risks.*[55]

The Treasury's fiscal and economic risk groups should also work closely with this central unit to ensure that the Treasury is considering the range of consequences associated with risks that are fundamentally non-economic in nature and how to prepare for them. This should involve thinking through the specific economic and fiscal consequences of each of the major risks identified in the National Risk Register. This is something that the central unit may struggle to do by itself, and which the Treasury did not do in preparation for the identified threat of a pandemic. To support this work, the Treasury should regularly consult experts from other fields (for example, epidemiology, defence or cyber) on the potential outcomes and range of uncertainties associated with any particular risk. While it will not be possible to prepare fully for all risks – and flexibility and agility are always likely to be important elements of risk preparedness and resilience – it is nonetheless important that the department assesses the risks and understands the range of possible impacts it may need to respond to.

The incentives for Treasury civil servants to take risk preparedness more seriously should be sharpened. The recruitment of a new head of risk management with external expertise is welcome.[56] In addition, the Institute for Government has argued in *A New Statutory Role for the Civil Service* that the head of the civil service should have a statutory "responsibility to maintain the capability of the UK government... including as regards risk management and crisis response".[57] Jill Rutter has also suggested **enshrining within a new civil service statute, responsibilities "to undertake reasonable contingency planning to deal with potential policy changes and emergencies" and "to identify long-term trends and potential future policy options".** This would give the Treasury permanent secretary greater scope and responsibility to devote some resources to risk planning, even if ministers were not inclined to do so, and for the permanent secretary – rather than ministers – to be held accountable to parliament for the quality of the preparations.[58]

Questions for the Covid inquiry

As we have highlighted throughout this report, we have not had access to all the information we would have needed to reach firm conclusions on some important areas. The Covid inquiry, with its powers to compel officials and ministers to provide evidence, will be able to make progress where we could not. There are several questions that it would be valuable for the inquiry to explore to understand better what happened during the pandemic and to learn lessons for the future:

- Exactly what analysis did the Treasury do on the economic impacts of various interventions to inform policy making? As well as looking at what officials did, the inquiry should also ask what those officials then shared (or not) with their ministers in policy advice and why.

- What role did ministers and officials play in limiting the extent to which the Treasury shared analysis relevant to decision making at the centre of government or other departments with those parts of government? Such limitations could have taken the form of direct instruction from ministers, or officials interpreting how they should interact with other departments based on (their perception of) ministers' preferences and objectives. It would also be a worthwhile exercise to investigate how the role of ministers in influencing these issues may have varied across departments to see whether issues are specific to the Treasury.

- Why was more analysis of the economic and social impacts of restrictions not shared with parliamentarians and the wider public (in the way that, for example, epidemiological analysis was)?

- How and how far did Treasury ministers and officials engage with epidemiologists and scientists inside and outside government to inform the department's view of the impact and likely progression of the pandemic? When the Treasury did engage, what evidence is there that officials internalised the insights gained from these interactions and ultimately used them in internal analysis and policy advice to ministers?

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References

1. Introduction

1 Nickson S, Thomas A and Mullens-Burgess E, *Decision Making in a Crisis: First responses to the coronavirus pandemic*, Institute for Government, 2020, www.instituteforgovernment.org.uk/publication/report/decision-making-crisis

2 Sasse T and Hodgkin R, *Managing Extreme Risks: How government can learn from Covid to be better prepared for the next crisis*, Institute for Government, 2022, www.instituteforgovernment.org.uk/publication/report/managing-extreme-risks

3 Thomas A and Clyne R, *Responding to Shocks: 10 lessons for government*, Institute for Government, 2021, www.instituteforgovernment.org.uk/publication/report/responding-shocks-10-lessons-government

4 Haddon C, Sasse T and Nice A, *Science Advice in a Crisis*, Institute for Government, 2020, www.instituteforgovernment.org.uk/publication/report/science-advice-crisis

5 Freeguard G and Shepley P, *Government Data Sharing during the Pandemic*, Institute for Government, 2023, www.instituteforgovernment.org.uk/publication/government-data-sharing-pandemic

6 Gill M and Dalton G, *Licence to Lead: Lessons for public bodies from the pandemic response in health*, Institute for Government, 2022, www.instituteforgovernment.org.uk/publication/report/licence-lead-lessons-public-bodies-pandemic-response-health

7 Timmins N, *Schools and Coronavirus : The government's handling of education during the pandemic*, Institute for Government, 2021, www.instituteforgovernment.org.uk/publication/schools-and-coronavirus

8 Institute for Government, 'Commission on the Centre of Government', (no date) retrieved 19 April 2023, www.instituteforgovernment.org.uk/commission-centre-government

2. Economic support policies

1 HM Treasury, *Budget 2020*, HC 121, The Stationery Office, 2020, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/871799/Budget_2020_Web_Accessible_Complete.pdf

2 *Ibid.*

3 Institute for Fiscal Studies, 'Budget 2020', Institute for Fiscal Studies, 11 March 2020, retrieved 24 March 2023, https://ifs.org.uk/collections/budget-2020

4 HM Treasury, *Budget 2020*, HC 121, The Stationery Office, 2020, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/871799/Budget_2020_Web_Accessible_Complete.pdf

5 Johnson B, 'Prime Minister's statemenet on coronavirus (COVID-19): 16 March 2020', speech at 10 Downing Street, 16 March 2020, www.gov.uk/government/speeches/pm-statement-on-coronavirus-16-march-2020

6 Sunak R, 'Chancellor of the Exchequer, Rishi Sunak on Covid-19 Response', speech at Downing Street, 17 March 2020, www.gov.uk/government/speeches/chancellor-of-the-exchequer-rishi-sunak-on-covid19-response

7 Sunak R. 'The Chancellor Rishi Sunak provides an updated statement on coronavirus', speech at Downing Street, 20 March 2020, www.gov.uk/government/speeches/the-chancellor-rishi-sunak-provides-an-updated-statement-on-coronavirus

8 HM Revenue and Customs and HM Treasury, 'The Coronavirus Job Retention Scheme interim evaluation', HM Government, 2022, retrieved 7 April 2023, www.gov.uk/government/publications/the-coronavirus-job-retention-scheme-interim-evaluation

9 Pope T and Hourston P, 'Coronavirus: what support did government provide for individuals and businesses?', Institute for Government, 2022, www.instituteforgovernment.org.uk/article/explainer/coronavirus-what-economic-support-did-government-provide-individuals-and

10 Office for National Statistics, 'Unemployment rate (aged 16 and over, seasonally adjusted): %', 14 March 2023, retrieved 7 April 2023, www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/mgsx/lms

11 Bank of England, 'A millennium of macroeconomic data', (no date) retrieved 18 April 2023, www.bankofengland.co.uk/statistics/research-datasets

12 Office for National Statistics, 'GDP quarterly national accounts, UK: October to December 2022', 31 March 2023, retrieved 18 April 2023, www.ons.gov.uk/economy/grossdomesticproductgdp/bulletins/quarterlynationalaccounts/octobertodecember2022

13 Office for Budget Responsibility, 'Coronavirus analysis', (no date) retrieved 10 April 2023, https://obr.uk/coronavirus-analysis

14 Office for Budget Responsibility, *Fiscal Sustainability Report: July 2020*, 2020, https://obr.uk/docs/OBR_FSR_July_2020-1.pdf

15 Organisation for Economic Co-operation and Development, 'United Kingdom 2', in Chapter 3, 'Unemployment, prices and fiscal policy: United Kingdom', in OECD, *OECD Economic Outlook*, vol. 2020, issue 1, 2020, retrieved 10 April 2023, https://doi.org/10.1787/888934140031

16 Organisation for Economic Co-operation and Development, 'Economic outlook no 107 – June 2020 – double-hit scenario', 2020, retrieved 10 April 2023, https://stats.oecd.org/viewhtml.aspx?datasetcode=EO107_INTERNET_2&lang=en

17 HM Revenue and Customs and HM Treasury, 'The Coronavirus Job Retention Scheme interim evaluation', HM Government, 2022, retrieved 7 April 2023, www.gov.uk/government/publications/the-coronavirus-job-retention-scheme-interim-evaluation

18 British Business Bank, *Evaluation of the Bounce Back Loan Scheme, Coronavirus Business Interruption Loan Scheme, and Coronavirus Large Business Interruption Loan Scheme: Process evaluation and early impact assessment*, 2022, www.british-business-bank.co.uk/wp-content/uploads/2022/06/Evaluation_of_BBLS_CBILS_and_CLBILS___Yr1_Report__accessible_.pdf

19 Sasse T and Hodgkin R, *Managing Extreme Risks: How government can learn from Covid to be better prepared for the next crisis*, Institute for Government, 2022, www.instituteforgovernment.org.uk/publication/report/managing-extreme-risks

20 Comptroller and Auditor General, *Implementing Employment Support Schemes in Response to the Covid-19 Pandemic*, Session 2019–21, HC 862, National Audit Office, 2020, www.nao.org.uk/wp-content/uploads/2020/07/Implementing-employment-support-schemes-in-response-to-the-COVID-19-pandemic.pdf

21 Cabinet Office, *National Risk Register of Civil Emergencies: 2017 edition*, 2017, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/644968/UK_National_Risk_Register_2017.pdf

22 Lombardelli C, 'Covid and the UK economy', response to audience question, speech at King's College London, 29 June 2022.

23 Sasse T and Hodgkin R, *Managing Extreme Risks: How government can learn from Covid to be better prepared for the next crisis*, Institute for Government, 2022, www.instituteforgovernment.org.uk/publication/report/managing-extreme-risks

24 Congressional Budget Office, *A Possible Influenza Pandemic: An update on possible macroeconomic effects and policy issues*, 2006, retrieved 7 April 2023, www.cbo.gov/publication/17785

25 Hughes R, *Safeguarding Governments' Financial Health During Coronavirus*, Resolution Foundation, 2020, www.resolutionfoundation.org/app/uploads/2020/03/Safeguarding-governments%E2%80%99-financial-health-during-coronavirus.pdf

26 Keogh-Brown M, Wren-Lewis S, Edmunds JW, Beutels P and Smith RD, 'The possible macroeconomic impact on the UK of an influenza pandemic', *Health Economics*, 2010, vol. 19, no. 11, pp. 1345–60, retrieved 7 April 2023, onlinelibrary.wiley.com/doi/abs/10.1002/hec.1554

27 British Business Bank, *Evaluation of the Bounce Back Loan Scheme, Coronavirus Business Interruption Loan Scheme, and Coronavirus Large Business Interruption Loan Scheme: Process evaluation and early impact assessment*, 2022, www.british-business-bank.co.uk/wp-content/uploads/2022/06/Evaluation_of_BBLS_CBILS_and_CLBILS___Yr1_Report__accessible_.pdf

28 HM Treasury, *Managing Fiscal Risks: Government response to the 2017 fiscal risks report*, Cm 9647, The Stationery Office, 2018, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/725908/managing_fiscal_risks_final_print.pdf

29 *Ibid.*

30 HM Treasury, *Annual Reports and Accounts: 2021–22*, HC 495, The Stationery Office, 2022, retrieved 7 April 2023, www.gov.uk/government/publications/hm-treasury-annual-report-and-accounts-2021-to-2022

31 HM Treasury, *Charter for Budget Responsibility: Autumn 2021 update*, The Stationery Office, 2022, https://obr.uk//docs/dlm_uploads/Charter_for_Budget_Responsibility_FINAL.pdf

32 Organisation for Economic Co-operation and Development, *OECD Independent Fiscal Institutions Review: Office for Budget Responsibility (OBR) of the United Kingdom*, 2021, www.oecd.org/gov/budgeting/oecd-ifi-review-of-the-office-for-budget-responsibility-obr-of-the-united-kingdom.pdf

33 See: HM Government, *Managing Fiscal Risks: Government response to the 2017 fiscal risks report*, Cm 9647, 2018, www.gov.uk/government/publications/managing-fiscal-risks-government-response-to-the-2017-fiscal-risks-report; Sunak R, 'OBR Fiscal Sustainability Report and response to the OBR 2019 Fiscal Risks Report: statement made on 14 July 2020', UK Parliament, 2020, https://questions-statements.parliament.uk/written-statements/detail/2020-07-14/HCWS364; Sunak R, 'Response to the 2021 Fiscal Risks Report', letter to Richard Hughes, chair of the OBR, 23 March 2022, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1062385/_FINAL__Fiscal_Risks_Report_response.pdf

34 HM Treasury, *Government Response to the 2022 Fiscal Risks and Sustainability Report*, 2023, www.gov.uk/government/publications/government-response-to-the-2022-fiscal-risks-and-sustainability-report

35 Office for Budget Responsibility, *Fiscal Risks Report*, CP 131, The Stationery Office, 2019, https://obr.uk/frs/fiscal-risks-report-july-2019

36 Office for Budget Responsibility, *Fiscal Risks Report*, CP 453, The Stationery Office, 2021, https://obr.uk/frs/fiscal-risks-report-july-2021

37 Office for Budget Responsibility, *Fiscal Risks and Sustainability*, CP 702, The Stationery Office, 2022, https://obr.uk/frs/fiscal-risks-and-sustainability-july-2022

38 Parker G, Cookson C, Neville S, Payne S, Hodgson C, Gross A and Hughes L, 'Inside Westminster's coronavirus blame game', *Financial Times*, 16 July 2020, www.ft.com/content/aa53173b-eb39-4055-b112-0001c1f6de1b

39 Comptroller and Auditor General, *Implementing Employment Support Schemes in Response to the Covid-19 Pandemic*, Session 2019–21, HC 862, National Audit Office, 2020, www.nao.org.uk/wp-content/uploads/2020/07/Implementing-employment-support-schemes-in-response-to-the-COVID-19-pandemic.pdf

40 HM Revenue and Customs and HM Treasury, 'The Coronavirus Job Retention Scheme interim evaluation', HM Government, 2022, www.gov.uk/government/publications/the-coronavirus-job-retention-scheme-interim-evaluation

41 *Ibid.*

42 Nickson S, Thomas A and Mullens-Burgess E, *Decision Making in a Crisis: First responses to the coronavirus pandemic*, Institute for Government, 2020, p. 14, www.instituteforgovernment.org.uk/publication/report/decision-making-crisis

43 Sunak R, 'Budget speech 2020', speech at the House of Commons, 11 March 2020, www.gov.uk/government/speeches/budget-speech-2020

44 House of Commons Treasury Committee, *Oral Evidence: Economic impact of coronavirus*, HC 271, parliament.uk, 2020, https://committees.parliament.uk/oralevidence/250/html

45 Carney M and Bailey A, 'Press conference following the announcement of measures to respond to the economic shock from Covid-19: opening statement by the governor and Andrew Bailey', press conference at the Bank of England, 11 March 2020, www.bankofengland.co.uk/news/2020/march/press-conference-11-march-2020

46 HM Revenue and Customs and HM Treasury, 'The Self-Employment Scheme Income Support Scheme interim evaluation', HM Government, 2022, www.gov.uk/government/publications/the-self-employment-income-support-scheme-interim-evaluation

47 *Ibid.*

48 Tetlow G, Pope T and Dalton G, *Coronavirus and Unemployment: A five nation comparison*, Institute for Government, 2020, www.instituteforgovernment.org.uk/publications/coronavirus-unemployment-five-nation-comparison

49 Thomas D, Morris S and Megaw N, 'Frustration despite UK coronavirus bailout loans reaching £450mn', *Financial Times*, 8 April 2020, www.ft.com/content/afd2deb3-cc47-4d57-b5c2-8959d53b4774

50 Tetlow G, 'The government's exit strategy is either poorly drafted or deliberately evasive', blog, Institute for Government, 13 May 2020, www.instituteforgovernment.org.uk/article/comment/governments-exit-strategy-either-poorly-drafted-or-deliberately-evasive

51 Haddon C, Sasse T and Tetlow G, *Lifting Lockdown in 2021: The next phase of the coronavirus strategy*, Institute for Government, 2021, www.instituteforgovernment.org.uk/publication/report/lifting-lockdown-2021-next-phase-coronavirus-strategy

52 Sasse T, Haddon C and Nice A, *Science Advice in a Crisis*, Institute for Government, 2020, www.instituteforgovernment.org.uk/publication/report/science-advice-crisis

53 Nickson S, Thomas A and Mullens-Burgess E, *Decision Making in a Crisis: First responses to the coronavirus pandemic*, Institute for Government, 2020, www.instituteforgovernment.org.uk/publication/report/decision-making-crisis

54 Fisher P, 'Current issues in monetary policy', speech given at the University of Bristol, 26 February 2013, www.bankofengland.co.uk/-/media/boe/files/speech/2013/current-issues-in-monetary-policy.pdf

55 Comptroller and Auditor General, *Covid-19 Business Grant Schemes*, Session 2022–23, HC 1200, National Audit Office, 2023, www.nao.org.uk/reports/covid-19-business-grant-schemes

56 Institute of Chartered Accountants in England and Wales, 'Written evidence submitted by ICAEW' (BRA0001), parliament.uk, 2022, https://committees.parliament.uk/writtenevidence/90502/pdf

57 Comptroller and Auditor General, *Covid-19 Business Grant Schemes*, Session 2022–23, HC 1200, National Audit Office, 2023, www.nao.org.uk/reports/covid-19-business-grant-schemes

58 *Ibid.*

59 Gill M and Dalton G, *Licence to Lead: Lessons for public bodies from the pandemic response in health*, Institute for Government, 2022, www.instituteforgovernment.org.uk/publication/report/licence-lead-lessons-public-bodies-pandemic-response-health

60 Nickson S, Thomas A and Mullens-Burgess E, *Decision Making in a Crisis: First responses to the coronavirus pandemic*, Institute for Government, 2020, www.instituteforgovernment.org.uk/publication/report/decision-making-crisis

61 Institute of Chartered Accountants in England and Wales, 'Employees returning from parental leave will be eligible for furlough', 10 June 2020, www.icaew.com/insights/tax-news/2020/jun-2020/staff-returning-from-parental-leave-eligible-for-furlough

62 HM Treasury, 'Flexible furlough scheme starts today', press release, 1 July 2020, www.gov.uk/government/news/flexible-furlough-scheme-starts-today

63 British Business Bank, *Evaluation of the Bounce Back Loan Scheme, Coronavirus Business Interruption Loan Scheme, and Coronavirus Large Business Interruption Loan Scheme: Process evaluation and early impact assessment*, 2022, p. 48, www.british-business-bank.co.uk/wp-content/uploads/2022/06/Evaluation_of_BBLS_CBILS_and_CLBILS___Yr1_Report__accessible_.pdf

64 *Ibid.*

65 HM Revenue and Customs and HM Treasury, 'The Self-Employment Income Support Scheme interim evaluation', HM Government, 2022, p. 14, www.gov.uk/government/publications/the-self-employment-income-support-scheme-interim-evaluation

66 Royal Economic Society, 'RES policy webinar series', 10 August 2020, https://res.org.uk/res-policy-webinarseries

67 Royal Economic Society, *Education and Lockdown: Skills, transitions and inequalities* [video], 11 May 2020, www.youtube.com/watch?v=IMoukoe-SA8&list=PLZo4iBEgQ8bxItQkxkGy2IKoFcevLDUUU&index=15

68 Royal Economic Society, *Economic Policy during the Pandemic: A European perspective* [video], 11 June 2020, www.youtube.com/watch?v=BBYje0LZh4w&list=PLZo4iBEgQ8bxItQkxkGy2IKoFcevLDUUU&index=6

69 Royal Economic Society, *Strategy and Investment for a Strong and Sustainable Recovery* [video], 12 May 2020, www.youtube.com/watch?v=sBxHxHt1KCo&list=PLZo4iBEgQ8bxItQkxkGy2IKoFcevLDUUU&index=14

70 British Business Bank, *Evaluation of the Bounce Back Loan Scheme, Coronavirus Business Interruption Loan Scheme, and Coronavirus Large Business Interruption Loan Scheme: Process evaluation and early impact assessment*, 2022, www.british-business-bank.co.uk/wp-content/uploads/2022/06/Evaluation_of_BBLS_CBILS_and_CLBILS___Yr1_Report__accessible_.pdf

71 *Ibid.*, p. 47.

72 HM Revenue and Customs and HM Treasury, 'The Self-Employment Scheme Income Support Scheme interim evaluation', HM Government, 2022, p. 13, emphasis added, www.gov.uk/government/publications/the-self-employment-income-support-scheme-interim-evaluation

73 British Business Bank, 'Enterprise Finance Guarantee – About EPG', (no date) retrieved 19 April 2023, www.british-business-bank.co.uk/ourpartners/supporting-business-loans-enterprise-finance-guarantee/about-efg/

74 British Business Bank, *Evaluation of the Bounce Back Loan Scheme, Coronavirus Business Interruption Loan Scheme, and Coronavirus Large Business Interruption Loan Scheme: Process evaluation and early impact assessment*, 2022, www.british-business-bank.co.uk/wp-content/uploads/2022/06/Evaluation_of_BBLS_CBILS_and_CLBILS___Yr1_Report__accessible_.pdf

75 Comptroller and Auditor General, *Investigation into the Bounce Back Loan Scheme*, Session 2019–21, HC 860, National Audit Office, 2020, www.nao.org.uk/wp-content/uploads/2020/10/Investigation-into-the-Bounce-Back-Loan-Scheme.pdf

76 Sunak R, *Economic Impact of Coronavirus: Gaps in support and economic analysis: Government response to the committee's eleventh report: Sixth special report of session 2019–21* (HC 1383), The Stationery Office, 2021, https://committees.parliament.uk/publications/5617/documents/55534/default

77 *Ibid.*

78 Department for the Economy, 'Dodds announces £20m support scheme for company directors', press release, 14 January 2021, www.economy-ni.gov.uk/news/dodds-announces-ps20m-support-scheme-company-directors

79 Brewer M, Fry E, Handscomb K and Marshall J, *A Chilling Crisis: Policy options to deal with soaring energy prices*, Resolution Foundation, 2022, www.resolutionfoundation.org/publications/a-chilling-crisis

80 Comptroller and Auditor General, *Implementing Employment Support Schemes in Response to the Covid-19 Pandemic, Session 2019–21*, HC 862, National Audit Office, 2020, www.nao.org.uk/reports/implementing-employment-support-schemes-in-response-to-the-covid-19-pandemic

81 HM Revenue and Customs, 'Improving the data HMRC collects from its customers', HM Government, 2022, www.gov.uk/government/consultations/improving-the-data-hmrc-collects-from-its-customers/improving-the-data-hmrc-collects-from-its-customers

82 Office for Budget Responsibility, *Fiscal Sustainability Report: July 2020,* 2020, https://obr.uk/docs/OBR_FSR_July_2020-1.pdf

83 Office for Budget Responsibility, *Economic and Fiscal Outlook – November 2020*, CP 318, The Stationery Office, 2020, https://obr.uk/efo/economic-and-fiscal-outlook-november-2020

84 HM Revenue and Customs and HM Treasury, 'The Self-Employment Income Support Scheme interim evaluation', HM Government, 2022, www.gov.uk/government/publications/the-self-employment-income-support-scheme-interim-evaluation

85 Cribb J, Delestre I and Johnson P, *Who is Excluded from the Government's Self Employment Income Support Scheme and What Could the Government Do About It?* (IFS Briefing Note BN316), Institute for Fiscal Studies, 2021, https://ifs.org.uk/sites/default/files/output_url_files/BN316-Who-is-excluded-from-SEISS.pdf

86 Sunak R, *Economic Impact of Coronavirus: Gaps in support and economic analysis: Government response to the committee's eleventh report: Sixth special report of session 2019–21* (HC 1383), The Stationery Office, 2021, https://committees.parliament.uk/publications/5617/documents/55534/default

87 House of Commons Treasury Committee, *Economic Impact of Coronavirus: Gaps in support and economic analysis: Eleventh report of session 2019–21* (HC 882), The Stationery Office, 2021, p. 22, https://committees.parliament.uk/publications/4703/documents/47210/default

88 Organisation for Economic Co-operation and Development, *OCED Economic Outlook*, vol. 2020, issue 1, 2020, www.oecd.org/economic-outlook/june-2020

89 Simmons & Simmons LLP, 'UK Coronavirus Job Retention Scheme', 15 March 2021, www.simmons-simmons.com/en/publications/ck8ah4l4q1cje0971tp047glc/coronavirus-job-retention-scheme

90 Office for Budget Responsibility, *Economic and Fiscal Outlook – November 2020*, CP 318, The Stationery Office, 2020, https://obr.uk/efo/economic-and-fiscal-outlook-november-2020

91 HM Government, *Covid-19 Response – Spring 2021*, CP 398, The Stationery Office, 2021, pp. 53, 54, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/963491/COVID-19_Response_-_Spring_2021.pdf

92 Sunak R, 'Budget speech 2021', speech at the House of Commons, 3 March 2021, www.gov.uk/government/speeches/budget-speech-2021

3. The Treasury's contribution to the overarching pandemic response

1 Office for Budget Responsibility, *Memorandum of Understanding between the Office for Budget Responsibility, HM Treasury, the Department for Work & Pensions and HM Revenue & Customs*, 2017, https://obr.uk/docs/dlm_uploads/MoU_2017_updateWebPDF.pdf

2 Mulgan G, Marsh O and Henggeler A, *Navigating the Crisis: How Governments Used Intelligence for Decision-making During the Covid-19 Pandemic*, International Public Policy Observatory, 2022, https://theippo.co.uk/wp-content/uploads/2022/12/Navigating-the-crisis-Intelligence-Report-12.12.pdf

3 Gye H, 'Coronavirus crisis: Boris Johnson is back in touch with Cabinet as "quad" of top ministers consider "traffic light" plan to reopen economy', the *i* paper, 19 April 2020, https://inews.co.uk/news/uk/coronavirus-crisis-boris-johnson-cabinet-quad-top-ministers-traffic-light-plan-reopen-economy-419868

4 House of Commons Public Administration and Constitutional Affairs Committee, 'Oral evidence: data transparency and accountability: Covid 19, HC 803', parliament.uk, 2021, Q296, https://committees.parliament.uk/oralevidence/1672/default

5 House of Commons Public Administration and Constitutional Affairs Committee, *Government Transparency and Accountability during Covid 19: The data underpinning decisions: Eighth report of session 2019–21*, HC 803, parliament.uk, 2021, https://committees.parliament.uk/publications/5076/documents/50285/default

6 Thomas A and Mullens-Burgess E, 'Civil Service Code', Institute for Government, 22 January 2021, www.instituteforgovernment.org.uk/explainer/civil-service-code

7 HM Government, *Government Functional Standard: GovS 010: Analysis*, HM Government Analysis Function, 2021, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1011798/CO_Govt_Functional_Std_GovS010_Analysis_v2_Final_WEB.pdf

8 Sasse T and Hodgkin R, *Managing Extreme Risks: How government can learn from Covid to be better prepared for the next crisis*, Institute for Government, 2022, www.instituteforgovernment.org.uk/publication/report/managing-extreme-risks

9 Lombardelli C, 'Covid and the UK economy', speech at King's College London, 30 June 2022, www.gov.uk/government/speeches/covid-and-the-uk-economy-speech-by-clare-lombardelli-chief-economic-advisor-hm-treasury

10 Rosenfeld D, 'Using real-time indicators for economic decision-making in government: lessons from the Covid-19 crisis in the UK', Overseas Development Institute, 2022, https://odi.org/en/publications/using-real-time-indicators-for-economic-decision-making-in-government-lessons-from-the-covid-19-crisis-in-the-uk

11 Office for National Statistics, 'Business impact of Covid-19 survey (BICS) results', 19 November 2020, retrieved 27 March 2023, www.ons.gov.uk/economy/economicoutputandproductivity/output/datasets/businessimpactofcovid19surveybicsresults

12 Office for National Statistics, 'Using Adzuna data to derive an indicator of weekly vacancies: experimental statistics', 14 June 2021, retrieved 17 March 2023, www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/methodologies/usingadzunadatatoderiveanindicatorofweeklyvacanciesexperimentalstatistics

13 Office for National Statistics, 'UK spending on credit and debit cards', (no date) retrieved 27 March 2023, www.ons.gov.uk/economy/economicoutputandproductivity/output/datasets/ukspendingoncreditanddebitcards

14 HM Government Contracts Finder, 'UK SBS IT17193 CBAS Solution', 13 February 2018, retrieved 27 March 2023, www.contractsfinder.service.gov.uk/Notice/a5794cd3-472b-4688-9c98-414892c2f52e

15 Institute for Government, 'Data Bites #25: getting things done with data in government', 1 December 2021, www.instituteforgovernment.org.uk/event/data-bites-25-getting-things-done-data-government

16 Rosenfeld D, 'Using real-time indicators for economic decision-making in government: lessons from the Covid-19 crisis in the UK', Overseas Development Institute, 2022, https://odi.org/en/publications/using-real-time-indicators-for-economic-decision-making-in-government-lessons-from-the-covid-19-crisis-in-the-uk

17 Bank of England, *Monetary Policy Report – February 2021*, 2021, www.bankofengland.co.uk/-/media/boe/files/monetary-policy-report/2021/february/monetary-policy-report-february-2021.pdf

18 Matthewson D, 'Nice one CHAPS: how Bank of England card data are telling us more about consumer spending', blog, Office for National Statistics, 20 January 2021, https://blog.ons.gov.uk/2021/01/20/nice-one-chaps-how-bank-of-england-card-data-are-telling-us-more-about-consumer-spending

19 Bean C, *Independent Review of UK Economic Statistics*, GOV.UK, 2016, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/507081/2904936_Bean_Review_Web_Accessible.pdf

20 Data Science Campus,'About us', Data Science Campus, (no date) retrieved 19 April 2023, https://datasciencecampus.ons.gov.uk/about-us/

21 Department of Health and Social Care, *Analysis of the Health, Economic and Social Effects of Covid-19 and the Approach to Tiering*, HM Government, 2020, www.gov.uk/government/publications/the-health-economic-and-social-effects-of-covid-19-and-the-tiered-approach

22 HM Treasury, *Spending Review 2020*, CP 330, The Stationery Office, 2020, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938052/SR20_Web_Accessible.pdf

23 HM Treasury, *Budget 2021: Protecting the jobs and livelihoods of the British people*, HC 1226, The Stationery Office, 2021, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/966868/BUDGET_2021_-_web.pdf

24 Pope T, Hourston P and Coggins M, 'Office for Budget Responsibility (OBR)', Institute for Government, 28 October 2022, www.instituteforgovernment.org.uk/article/explainer/office-budget-responsibility-obr

25 Office for Budget Responsibility, *Economic and Fiscal Outlook – March 2020*, CP 230, The Stationery Office, 2020, https://obr.uk/efo/economic-and-fiscal-outlook-march-2020

26 Office for Budget Responsibility, 'Commentary on the OBR coronavirus reference scenario', 2020, https://obr.uk/docs/dlm_uploads/Coronavirus_reference_scenario_commentary.pdf

27 Office for Budget Responsibility, *Fiscal Sustainability Report: July 2020*, The Stationery Office, 2020, https://obr.uk/docs/OBR_FSR_July_2020-1.pdf

28 Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2020*, CP 318, The Stationery Office, 2020, https://obr.uk/docs/dlm_uploads/CCS1020397650-001_OBR-November2020-EFO-v2-Web-accessible.pdf

29 Rayner G and Mikhailova A, 'Exclusive: Treasury blueprint to raise taxes and freeze wages to pay for £300bn coronavirus bill', *The Telegraph*, 12 May 2020, www.telegraph.co.uk/politics/2020/05/12/exclusive-treasury-blueprint-raise-taxes-freeze-wages-pay-300bn

30 Office for Budget Responsibility, 'Commentary on the OBR coronavirus reference scenario', 2020, https://obr.uk/docs/dlm_uploads/Coronavirus_reference_scenario_commentary.pdf

31 Office for Budget Responsibility, *Fiscal Sustainability Report: July 2020*, The Stationery Office, 2020, https://obr.uk/docs/OBR_FSR_July_2020-1.pdf

32 Office for Budget Responsibility, 'Commentary on the OBR coronavirus reference scenario', 2020, https://obr.uk/docs/dlm_uploads/Coronavirus_reference_scenario_commentary.pdf

33 Department of Health and Social Care, Office for National Statistics, Government Actuary's Department and Home Office, *Direct and Indirect Impacts of Covid-19 on Excess Deaths and Morbidity*, HM Government, 2020, www.gov.uk/government/publications/dhsconsgadho-direct-and-indirect-impacts-of-covid-19-on-excess-deaths-and-morbidity-15-july-2020

34 Bank of England, 'Monetary Policy Reports', (no date) retrieved 27 March 2023, www.bankofengland.co.uk/monetary-policy-report/monetary-policy-report

35 HM Treasury, 'Forecasts for the UK economy', (no date) retrieved 27 March 2023, www.gov.uk/government/collections/data-forecasts

36 Harris J and Rutter J, *Centre Forward: Effective support for the prime minister at the centre of government*, Institute for Government, 2014, www.instituteforgovernment.org.uk/publication/report/centre-forward

37 Miles DK, Stedman M and Heald AH, '"Stay at home, protect the national health service, save lives": a cost benefit analysis of the lockdown in the United Kingdom', *The International Journal of Clinical Practice*, 2021, vol. 75, no. 3, www.imperial.ac.uk/people/d.miles/document/7702/IJCP%20Miles%20Stedman%20and%20Heald%20Sep%202020/?IJCP%20Miles%20Stedman%20and%20Heald%20Sep%202020.pdf

38 Chadha JS, 'Commentary: whither after Covid-19 and Brexit: a social science perspective', *National Institute Economic Review*, vol. 255, pp. 1–8, www.niesr.ac.uk/wp-content/uploads/2021/10/commentary-whither-after-covid-19-and-brexit-a-social-science-perspective-4.pdf

39 Toxvaerd F, 'Research', (no date) retrieved 27 March 2023, https://sites.google.com/site/toxvaerd11/home/curriculum-vitae?authuser=0

40 Keogh-Brown M, Wren-Lewis S, Edmunds JW, Beutels P and Smith RD, 'The possible macroeconomic impact on the UK of an influenza pandemic', *Health Economics*, 2010, vol. 19, no. 11, pp. 1345–60, https://onlinelibrary.wiley.com/doi/abs/10.1002/hec.1554

41 Congressional Budget Office, 'A possible influenza pandemic: an update on possible macroeconomic effects and policy issues', letter to WH Frist and J Gregg, 22 May 2006, www.cbo.gov/publication/17785

42 Shiller RJ, 'Narrative economics' (NBER working paper no. 23075), National Bureau for Economic Research, 2017, www.nber.org/papers/w23075

43 Almond D, 'Is the 1918 Influenza Pandemic Over? Long-Term Effects of *In Utero* Influenza Exposure in the Post-1940 Population', *Journal of Political Economy*, 2006, vol. 114, no. 4, pp. 672–712, www.jstor.org/stable/10.1086/507154

44 Voigtländer N and Voth HJ, 'The Three Horsemen of Riches: Plague, War and Urbanization in Early Modern Europe', *The Review of Economic Studies*, vol. 80, no. 2, pp. 774–811, https://academic.oup.com/restud/article-abstract/80/2/774/1535445

45 Centre for Economic and Policy Research, 'Covid economics papers', (no date) retrieved 27 March 2023, https://cepr.org/publications/covid-economics-papers

46 Eichenbaum MS, Rebelo S and Trabandt M, 'The macroeconomics of epidemics', *The Review of Financial Studies*, 2021, vol. 32, no. 11, pp. 5149–87, https://academic.oup.com/rfs/article/34/11/5149/6213914

47 Andersen AL, Hansen ET, Johannesen N and Sheridan A, 'Consumer responses to the Covid-19 crisis: evidence from bank account transaction data', (CEPR discussion paper no. DP14809), Centre for Economic Policy Research, 2020, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3612880

48 Coibion O, Gorodnichenko Y and Weber M, 'The cost of the Covid-19 crisis: lockdowns, macroeconomic expectations, and consumer spending', (NBER working paper no. 27141), National Bureau of Economic Research, 2020, www.nber.org/papers/w27141

49 Chetty R, Friedman JN, Hendren N, Stepner M and The Opportunity Insights Team, 'The economic impacts of Covid-19: evidence from a new public database built using private sector data', (NBER working paper no. 27431), National Bureau of Economic Research, 2020, www.nber.org/papers/w27431

50 Hacioglu-Hoke S, Kanzig DR and Surico P, 'Consumption in the time of Covid-19: evidence from UK transaction data', (CEPR discussion paper no. DP14733), Centre for Economic Policy Research, 2020, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3603964

51 Perrings C, 'Environmental externalities', in Perrings C and Kinzig A eds, *Conservation: Economics, science and policy*, Oxford University Press, pp. 207–33, https://academic.oup.com/book/39453/chapter-abstract/339212559?redirectedFrom=fulltext

52 Bethune ZA and Korinek A, 'Covid-19 infection externalities: trading off lives vs. livelihoods', (NBER working paper no. 27009), National Bureau of Economic Research, www.nber.org/papers/w27009

53 Toxvaerd F, 'Equilibrium social distancing', (Cambridge-INET working paper series no. 2020/08), University of Cambridge Faculty of Economics, 2020, www.econ.cam.ac.uk/research-files/repec/cam/pdf/cwpe2021.pdf

54 Moll B, 'Policy tradeoffs during pandemics: six lessons from epi-econ models', slides presented at the Novel Symposium on Covid-19 and the Economy, 19 May 2022, https://benjaminmoll.com/wp-content/uploads/2022/05/six_lessons.pdf

55 Tenreyro S, 'Covid-19 and the economy: what are the lessons so far?', speech at a London School of Economics webinar, 15 July 2020, https://personal.lse.ac.uk/tenreyro/covidspeech.pdf

56 Giannitsarou C, Kissler S and Toxvaerd F, 'Waning immunity and the second wave: some projections for SARS-CoV-2', *American Economic Review: Insights*, 2021, vol. 3, no. 3, pp. 321–38, www.aeaweb.org/articles?id=10.1257/aeri.20200343

57 Moll B, 'Policy tradeoffs during pandemics: six lessons from epi-econ models', slides presented at the Nobel Symposium on Covid-19 and the Economy, 19 May 2022, https://benjaminmoll.com/wp-content/uploads/2022/05/six_lessons.pdf

58 Vlieghe G, 'Assessing the Health of the Economy', speech at the Bank of England, 20 October 2020, www.bankofengland.co.uk/-/media/boe/files/speech/2020/assessing-the-health-of-the-economy-speech-by-gertjan-vlieghe.pdf

59 Andersen AL, Hansen ET, Johannesen N and Sheridan A, 'Consumer Responses to the Covid-19 Crisis: Evidence from Bank Account Transaction Data', (CEPR Discussion Paper No. DP14809), Centre for Economic Policy Research, 2020, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3612880

60 Baqaee D, Farhi E, Mina MJ and Stock JH, 'Reopening Scenarios', (NBER Working Paper 27244), National Bureau for Economic and Social Research, 2020, https://scholar.harvard.edu/files/stock/files/baqaee_farhi_mina_stock_reopening_scenarios_w27244_may_2020.pdf

61 Favero CA, Ichino A and Rustichini A, 'Restarting the Economy While Saving Lives Under Covid-19', (CEPR Discussion Paper DP14664), Centre for Economic Policy Research, 2020, https://repec.cepr.org/repec/cpr/ceprdp/DP14664.pdf

62 Azzimonti M, Fogli A, Perri F and Ponder M, 'Pandemic Control in ECON-EPI Networks', (NBER Working Paper 27741), National Bureau for Economic and Social Research, 2020, www.nber.org/papers/w27741

63 Acemoglu D, Chernozhukov V, Werning W and Whinston MD, 'Optimal Targeted Lockdowns in a Multi-Group SIR Model', (NBER Working Paper 27102), National Bureau for Economic and Social Research, 2020, www.nber.org/papers/w27102

64 Kircher P, Santos C and Tertilt M, 'An Economic Model of the COVID-19 Epidemic: The Importance of Testing and Age-Specific Policies', (IZA DP No. 13265), Institute of Labour Economics, 2020, www.iza.org/publications/dp/13265/an-economic-model-of-the-covid-19-epidemic-the-importance-of-testing-and-age-specific-policies

65 Glover A, Heathcote J, Krueger D and Rios-Rull JV, 'Health versus Wealth: On the Distributional Effects of Controlling a Pandemic', (NBER Working Paper 27046), National Bureau for Economic and Social Research, 2020, www.nber.org/papers/w27046

66 Kaplan G, Moll B and Violante GL, 'The Great Lockdown and the Big Stimulus: Tracing the Pandemic Possibility Frontier for the U.S.' (NBER Working Paper 27794), National Bureau for Economic and Social Research, 2020, www.nber.org/papers/w27794

67 Tenreyro S, 'Covid-19 and the economy: what are the lessons so far?', speech at a London School of Economics webinar, 15 July 2020, https://personal.lse.ac.uk/tenreyro/covidspeech.pdf

68 Office for Budget Responsibility, *Economic and Fiscal Outlook: November 2020*, CP 318, The Stationery Office, 2020, https://obr.uk/docs/dlm_uploads/CCS1020397650-001_OBR-November2020-EFO-v2-Web-accessible.pdf

69 Toxvaerd F, Yates T and Moll B, 'How did Treasury policy-makers approach the economic policy response to Covid-19', Economics Observatory, 24 November 2022, www.economicsobservatory.com/how-did-treasury-policy-makers-approach-the-economic-response-to-covid-19

70 Lombardelli C, 'Covid and the UK economy', speech at King's College London, 30 June 2022, www.gov.uk/government/speeches/covid-and-the-uk-economy-speech-by-clare-lombardelli-chief-economic-advisor-hm-treasury

71 Lombardelli C, 'Covid and the UK economy', response to audience question, speech at King's College London, 30 June 2022, www.gov.uk/government/speeches/covid-and-the-uk-economy-speech-by-clare-lombardelli-chief-economic-advisor-hm-treasury

72 Nelson F, 'The lockdown files: Rishi Sunak on what we weren't told', *The Spectator*, 27 August 2022, www.spectator.co.uk/article/the-lockdown-files-rishi-sunak-on-what-we-werent-told

73 Rutter J, *Relationship Breakdown: Civil service–ministerial relations: Time for a reset*, Institute for Government and the Bennett Institute for Public Policy, 2022, www.instituteforgovernment.org.uk/sites/default/files/2022-12/Breaking-point-civil-service-ministerial-relations.pdf

74 HM Government, *Social Distancing Review: Report*, 2021, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/999413/Social-Distancing-Review-Report.pdf

75 Cabinet Office, 'Review of two metre social distancing guidance', 26 June 2020, www.gov.uk/government/publications/review-of-two-metre-social-distancing-guidance/review-of-two-metre-social-distancing-guidance

76 *Ibid.*

77 Kuenssberg L, 'Ministers frustrated with PM's "mistakes" ahead of Covid second wave', BBC News, 15 March 2021, www.bbc.co.uk/news/uk-politics-56406393

78 Haddon C, Sasse T and Nice A, *Science Advice in a Crisis*, Institute for Government, 2020, www.instituteforgovernment.org.uk/publication/report/science-advice-crisis

79 Nelson F, 'The lockdown files: Rishi Sunak on what we weren't told', *The Spectator*, 27 August 2022, www.spectator.co.uk/article/the-lockdown-files-rishi-sunak-on-what-we-werent-told/

80 Science Media Centre, 'Expert reaction to Rishi Sunak's interview in the Spectator about the role of scientists in the pandemic', 25 August 2022, www.sciencemediacentre.org/expert-reaction-to-rishi-sunaks-interview-in-the-spectator-about-the-role-of-scientists-in-the-pandemic

81 Nice A, 'Scientific Advisory Group on Emergencies (SAGE)', Institute for Government, 31 March 2020, www.instituteforgovernment.org.uk/article/explainer/scientific-advisory-group-emergencies-sage

82 *Ibid.*

83 House of Commons Science and Technology Committee, *The UK Response to Covid-19: Use of scientific advice: First reports of session 2019–21* (HC 136), The Stationery Office, 2021, https://publications.parliament.uk/pa/cm5801/cmselect/cmsctech/136/13603.htm

84 Vallance P, 'In conversation with Sir Patrick Vallance, government chief scientific adviser', speech at the Institute for Government, 24 March 2023, www.instituteforgovernment.org.uk/event/patrick-vallance-government-chief-scientific-adviser

85 Sense about Science, *Transparency of Evidence: A spot check of government policy proposals July 2016 to July 2017*, 2018, https://senseaboutscience.org/wp-content/uploads/2018/01/Transparency-of-evidence-spotcheck-1.pdf

86 *Ibid.*

87 Rutter J, *The 'S' Factors: Lessons from IfG's policy success reunions*, Institute for Government, 2011, www.instituteforgovernment.org.uk/publication/report/s-factors

88 Bargain O and Aminjonov U, 'Trust and compliance to public health policies in times of Covid-19', *Journal of Public Economics*, 2020, vol. 192, www.sciencedirect.com/science/article/pii/S0047272720301808

89 Sarracino F, Greyling T, O'Connor K, Peroni C and Rossouw S, *Trust Predicts Compliance with Covid-19 Containment Policies: Evidence from ten countries using big data*, Institute of Labour Economics, 2022, https://docs.iza.org/dp15171.pdf

90 Gurría A, 'Openness and transparency – pillars for democracy, trust and progress', Organisation for Economic Co-operation and Development, (no date) retrieved 27 March 2023, www.oecd.org/corruption/opennessandtransparency-pillarsfordemocracytrustandprogress.htm

91 Macdonald L and Durkee M, 'Public trust and transparency', blog, Centre for Data Ethics and Innovation, 1 December 2020, https://cdei.blog.gov.uk/2020/12/01/public-trust-and-transparency

92 Organisation for Economic Co-operation and Development, 'Transparency, communication and trust: the role of public communication in responding to the wave of disinformation about the new coronavirus', 2020, www.oecd.org/coronavirus/policy-responses/transparency-communication-and-trust-the-role-of-public-communication-in-responding-to-the-wave-of-disinformation-about-the-new-coronavirus-bef7ad6e

93 Brown T, Elkins M and Schley D with contributions by others, *What Counts? A scoping inquiry into how well the government's evidence for Covid-19 decisions served society*, Sense about Science, 2022, https://senseaboutscience.org/wp-content/uploads/2022/05/What-Counts-Scoping-Inquiry-Report-2022.pdf

94 House of Commons Treasury Committee, *Economic Impact of Coronavirus: Gaps in support and economic analysis: Eleventh report of session 2019–21*, HC 882, The Stationery Office, 2021, retrieved 11 April 2023, https://committees.parliament.uk/publications/4703/documents/47210/default

95 Organisation for Economic Co-operation and Development, *Economic Outlook*, vol. 2020, issue 1, 2020, www.oecd.org/economic-outlook/june-2020/#:~:text=Scenario%202%3A%20A%20second%20wave,in%20five%20years%20by%202021

96 Fetzer T, 'Subsidising the spread of Covid-19: evidence from the UK's Eat-Out-To-Help-Out Scheme', *The Economic Journal*, 2022, vol. 132, no. 643, pp. 1200–17, https://academic.oup.com/ej/article/132/643/1200/6382847

97 Cole H, 'Biting back: Rishi Sunak defends his job-saving Eat Out to Help Out scheme as data shows no link to increased Covid cases', *The Sun*, 28 January 2021, www.thesun.co.uk/news/13881675/rishi-sunak-eat-out-to-help-out-scheme-covid

98 Sasse T, 'The Treasury's attempt to repair Eat Out to Help Out's reputation is dubious', blog, Institute for Government, 3 February 2021, https://www.instituteforgovernment.org.uk/blog/treasury-eat-out-help-out

99 Haddon C, Sasse T and Nice A, *Science advice in a crisis*, Institute for Government, 2020, www.instituteforgovernment.org.uk/publication/report/science-advice-crisis

100 Lombardelli C, 'Covid and the UK economy', response to audience question, speech at King's College London, 30 June 2022, www.gov.uk/government/speeches/covid-and-the-uk-economy-speech-by-clare-lombardelli-chief-economic-advisor-hm-treasury

101 SAGE, 'SAGE 58 minutes: coronavirus (Covid-19) response, 21 September 2020', GOV.UK, 2020, www.gov.uk/government/publications/fifty-eighth-sage-meeting-on-covid-19-21-september-2020/sage-58-minutes-coronavirus-covid-19-response-21-september-2020

102 Johnson B, 'Prime minister's statement on coronavirus (Covid-19): 31 October 2020', GOV.UK, 2020, www.gov.uk/government/speeches/prime-ministers-statement-on-coronavirus-covid-19-31-october-2020

103 ITV, 'Rishi Sunak confirms he opposed September circuit breaker Covid lockdown but "ultimate" decision was Boris Johnson's', 31 March 2021, www.itv.com/news/2021-03-31/rishi-sunak-admits-he-opposed-september-circuit-breaker-covid-lockdown-but-ultimate-decision-was-boris-johnsons

104 House of Commons Treasury Committee, *Economic Impact of Coronavirus: Gaps in support and economic analysis: Eleventh report of session 2019–21*, HC 882, The Stationery Office, 2021, p. 28, https://committees.parliament.uk/publications/4703/documents/47210/default

105 Franks J, Gruss B, Mulas-Granados, Patnam M and Weber S, 'Exiting from lockdowns: early evidence from reopenings', (IMF working paper no. 2020/218), International Monetary Fund, 2020, www.imf.org/en/Publications/WP/Issues/2020/10/21/Exiting-from-Lockdowns-Early-Evidence-from-Reopenings-in-Europe-49826

106 Rutter J, Tetlow G, Marshall J, Pope T and Sodhi S, *Overcoming the Barriers to Tax Reform*, Institute for Government, 2020, www.instituteforgovernment.org.uk/publication/overcoming-barriers-tax-reform

107 Sasse T and Norris E, *Moving On: The costs of high staff turnover in the civil service*, Institute for Government, 2019, www.instituteforgovernment.org.uk/publication/report/moving-on-staff-turnover-civil-service

108 Kingman J, 'Why is civil service reform so hard? Sir John Kingman in conversation with Bronwen Maddox', speech at the Institute for Government, 16 December 2020, www.instituteforgovernment.org.uk/sites/default/files/sir-john-kingman-speech.pdf

109 HM Treasury, *Review of HM Treasury's Management Response to the Financial Crisis*, HM Government, 2012, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/220506/review_fincrisis_response_290312.pdf

110 Cabinet Office, *Capability Review of HM Treasury*, HM Government, 2007, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/191692/HM_Treasury_capability_review.pdf

111 Office for Budget Responsibility, 'Memorandum of understanding between the Office for Budget Responsibility and HM Treasury – the macroeconomic model', (no date) retrieved 27 March 2023, https://obr.uk/docs/dlm_uploads/MoU_model.pdf

112 Office for Budget Responsibility, 'The macroeconomic model', (OBR Briefing paper No. 5), 2013, https://obr.uk/docs/dlm_uploads/Final_Model_Documentation.pdf

113 National Institute for Economic and Social Research, 'National Institute Global Econometric Model', (no date) retrieved 19 April 2023, www.niesr.ac.uk/nigem-macroeconomic-model

114 Office for National Statistics, 'Dataset: UK input-output analytical tables, product by product', 27 March 2023, retrieved 19 April 2023, www.ons.gov.uk/economy/nationalaccounts/supplyandusetables/datasets/ukinputoutputanalyticaltablesdetailed

115 House of Commons Treasury Committee, *Oral Evidence: The UK's economic relationship with the European Union*, HC 473, Q1103, parliament.UK, 2018, https://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/treasury-committee/uks-economic-relationship-with-the-european-union/oral/93283.pdf

116 Scholar T (HM Treasury), Letter to Mel Stride MP (House of Commons Treasury Committee), 26 January 2021, https://committees.parliament.uk/publications/4559/documents/46128/default

117 HM Government, *Scotland analysis: Fiscal policy and sustainability*, Cm 8854, The Stationery Office, 2014, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/314359/Scotland_analysis__Fiscal_policy_and_sustainability.pdf

118 HM Government, *Scotland analysis: Currency and monetary policy*, Cm 8594, The Stationery Office, 2013, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/191786/ScotlandAnalysis_acc-1.pdf

119 HM Government, *HM Treasury Analysis: The long-term economic impact of EU membership and the alternatives*, Cm 9250, The Stationery Office, 2016, retrieved 11 April 2023, www.gov.uk/government/publications/hm-treasury-analysis-the-long-term-economic-impact-of-eu-membership-and-the-alternatives

120 HM Government, *HM Treasury Analysis: The immediate economic impact of EU membership and the alternatives*, Cm 9292, The Stationery Office, 2016, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/524967/hm_treasury_analysis_the_immediate_economic_impact_of_leaving_the_eu_web.pdf

121 Goodenough T, 'How Project Fear failed to materialise', *The Spectator*, 18 April 2017, www.spectator.co.uk/article/what-the-papers-say-how-project-fear-failed-to-materialise

122 National Audit Office, *HM Treasury's Economic Analysis in the Lead-Up to the Referendum on European Union Membership*, 2017, www.nao.org.uk/wp-content/uploads/2022/08/HM-Treasurys-economic-analysis-in-the-lead-up-to-the-referendum-on-European-Union.pdf

123 Nardelli A, 'This leaked government Brexit analysis says the UK will be worse off in every scenario', *BuzzFeed News*, 29 January 2018, www.buzzfeed.com/albertonardelli/the-governments-own-brexit-analysis-says-the-uk-will-be

124 Rayner G and Mikhailova A, 'Exclusive: Treasury blueprint to raise taxes and freeze wages to pay for £300bn coronavirus bill', *The Telegraph*, 12 May 2020, www.telegraph.co.uk/politics/2020/05/12/exclusive-treasury-blueprint-raise-taxes-freeze-wages-pay-300bn

125 Rutter J, *Relationship Breakdown: Civil service–ministerial relations: Time for a reset*, Institute for Government and the Bennett Institute for Public Policy, 2022, www.instituteforgovernment.org.uk/sites/default/files/2022-12/Breaking-point-civil-service-ministerial-relations.pdf

4. Recommendations

1 Sasse T and Thomas A, *Better Policy Making*, Institute for Government, 2022, www.instituteforgovernment.org.uk/publication/better-policy-making

2 Clyne R, Savur S, Pope T and others, *Whitehall Monitor 2023*, Institute for Government, 2023, www.instituteforgovernment.org.uk/publication/whitehall-monitor-2023

3 Swinford S, 'Theresa May accused of 'rehashing Project Fear' as Treasury says UK will be £150bn worse off under no deal', *The Telegraph*, 27 November 2018, retrieved 19 April 2023, www.telegraph.co.uk/politics/2018/11/27/theresa-may-accused-rehashing-project-fear-treasury-says-uk/

4 Sasse T and Thomas A, *Better policy making*, Institute for Government, 2022, www.instituteforgovernment.org.uk/publication/better-policy-making

5 *Ibid.*

6 Rutter J, *Relationship Breakdown: Civil service–ministerial relations: Time for a reset*, Institute for Government and the Bennett Institute for Public Policy, 2022, www.instituteforgovernment.org.uk/sites/default/files/2022-12/Breaking-point-civil-service-ministerial-relations.pdf

7 Sasse T and Thomas A, *Better policy making*, Institute for Government, 2022, www.instituteforgovernment.org.uk/publication/better-policy-making

8 O'Donnell G, *Financing Britain's Future: Review of the revenue departments*, Cm 6163, HM Treasury, 2004, p. 9, https://webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/media/FBAA7/odonnell_fore_ch1_245.pdf

9 Government Office for Science, *Guidance for Government Chief Scientific Advisers and their Officials*, GOV.UK, 2020, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/856166/chief-scientific-advisers-and-their-officials-an-introduction.pdf

10 *Ibid.*, p. 6.

11 House of Commons Science and Technology Committee, 'Oral evidence: UK science, research and technology capability and influence in global disease outbreaks', HC 136, 2020, Q788, https://committees.parliament.uk/oralevidence/464/html

12 Rutter J, Tetlow G, Marshall J, Pope T and Sodhi S, *Overcoming the Barriers to Tax Reform*, Institute for Government, 2020, www.instituteforgovernment.org.uk/publication/overcoming-barriers-tax-reform

13 HM Treasury, *The Aqua Book: Guidance on producing quality analysis for government*, GOV.UK, 2015, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/416478/aqua_book_final_web.pdf

14 HM Treasury, *The Green Book*, GOV.UK, various years.

15 HM Treasury, *Magenta Book: Central government guidance on evaluation*, GOV.UK, 2020, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/879438/HMT_Magenta_Book.pdf

16 Government Analysis Function, *Government Analysis Functional Standard GovS 010: Analysis*, GOV.UK, 2021, www.gov.uk/government/publications/government-analysis-functional-standard--2

17 Rutter J, *Relationship Breakdown: Civil service–ministerial relations: Time for a reset*, Institute for Government and the Bennett Institute for Public Policy, 2022, www.instituteforgovernment.org.uk/sites/default/files/2022-12/Breaking-point-civil-service-ministerial-relations.pdf

18 Kingman J, 'Why is civil service reform so hard? Sir John Kingman in conversation with Bronwen Maddox', speech at the Institute for Government, 16 December 2020, www.instituteforgovernment.org.uk/sites/default/files/sir-john-kingman-speech.pdf

19 Rutter J, Tetlow G, Marshall J, Pope T and Sodhi S, *Overcoming the Barriers to Tax Reform*, Institute for Government, 2020, www.instituteforgovernment.org.uk/publication/overcoming-barriers-tax-reform

20 Kingman J, 'Why is civil service reform so hard? Sir John Kingman in conversation with Bronwen Maddox', speech at the Institute for Government, 16 December 2020, www.instituteforgovernment.org.uk/sites/default/files/sir-john-kingman-speech.pdf

21 Urban J and Thomas A, *Opening Up: How to strengthen the civil service through external recruitment*, Institute for Government, 2022, www.instituteforgovernment.org.uk/sites/default/files/2022-12/strengthen-civil-service-external-recruitment.pdf

22 Clyne R, Savur S, Pope T and others, *Whitehall Monitor 2023*, Institute for Government, 2023, Figure 1.7, www.instituteforgovernment.org.uk/publication/whitehall-monitor-2023

23 Haddon C and Sasse T, *How the government can work with academia*, Institute for Government, 2018, www.instituteforgovernment.org.uk/publication/report/how-government-can-work-academia

24 Economics Observatory, 'About us', (no date) retrieved 27 March 2023, www.economicsobservatory.com/about

25 Sense about Science, *Transparency of Evidence: A spot check of government policy proposals July 2016 to July 2017*, 2018, https://senseaboutscience.org/wp-content/uploads/2018/01/Transparency-of-evidence-spotcheck-1.pdf

26 Spencer P and Mowl C, 'A financial sector for the Treasury model', (Treasury working paper no. 8), HM Treasury, 1978, https://discovery.nationalarchives.gov.uk/details/r/C11847105

27 HM Treasury, 'Working paper on macroeconomic policy simulations', (Treasury working paper), 1987, https://discovery.nationalarchives.gov.uk/details/r/C16611273

28 HM Treasury, 'The analysis of employment policies and their impact on the economy', (Treasury working paper), 1988, https://discovery.nationalarchives.gov.uk/details/r/C16418093

29 Chan A, Savage D and Whittaker R, 'The new Treasury model', (Government Economic Service working paper no. 128; Treasury working paper no. 70), HM Treasury, 1995.

30 Marrano MG, Haskel J and Wallis G, 'Intangible investment and Britain's productivity', (Treasury economic working paper no. 1), HM Treasury, 2007, http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/09_10_07_pbr_macroeconomic.pdf

31 Gurney A, 'Resilience in the UK and other OECD economies', (Treasury economic working paper no. 2), HM Treasury, 2008, http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/12_03_08bud08_workingpaper2_557.pdf

32 Lepper J and McAndrew S, 'Developments in the economics of well-being', (Treasury economic working paper no. 4), HM Treasury, 2008, www.escholar.manchester.ac.uk/api/datastream?publicationPid=uk-ac-man-scw:198219&datastreamId=FULL-TEXT.PDF

33 Balls E and O'Donnell G eds, *Reforming Britain's Economic and Financial Policy*, Palgrave Macmillan London, 2002.

34 Balls E, O'Donnell G and Grice J eds, *Microeconomic Reform in Britain*, Palgrave Macmillan London, 2004.

35 Bank Underground, 'About', (no date) retrieved 27 March 2023, https://bankunderground.co.uk

36 The Treasury (New Zealand), 'Publications', (no date) retrieved 27 March 2023, www.treasury.govt.nz/publications

37 Kazuhiko E, 'Greetings from the President', Ministry of Finance (Japan), July 2022, www.mof.go.jp/english/pri/summary/what_is_pri/greet.htm

38 Sasse T and Thomas A, *Better policy making*, Institute for Government, 2022, www.instituteforgovernment.org.uk/publication/better-policy-making

39 HM Government, 'UK Green Investment Bank', (no date) retrieved 27 March 2023, www.gov.uk/government/organisations/uk-green-investment-bank

40 GOV.UK, 'Patient Capital Review', Department for Business, Energy and Industrial Strategy and HM Treasury, (no date) retrieved 4 April 2023, www.gov.uk/government/publications/patient-capital-review

41 British Business Bank, *Evaluation of the Bounce Back Loan Scheme, Coronavirus Business Interruption Loan Scheme, and Coronavirus Large Business Interruption Loan Scheme: Process evaluation and early impact assessment*, 2022, p. 47, www.british-business-bank.co.uk/wp-content/uploads/2022/06/Evaluation_of_BBLS_CBILS_and_CLBILS___Yr1_Report__accessible_.pdf

42 Social Mobility Commission, *Data for social mobility: improving the collection and availability of data across government*, 2022, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1124010/Data_for_Social_Mobility.pdf

43 Freeguard G and Shepley P, *Government Data Sharing during the Pandemic*, Institute for Government, 2023, www.instituteforgovernment.org.uk/publication/government-data-sharing-pandemic

44 HM Revenue and Customs and HM Treasury, 'The Coronavirus Job Retention Scheme interim evaluation', HM Government, 2022, www.gov.uk/government/publications/the-coronavirus-job-retention-scheme-interim-evaluation

45 HM Revenue and Customs and HM Treasury, 'The Self-Employment Income Support Scheme interim evaluation', HM Government, 2022, www.gov.uk/government/publications/the-self-employment-income-support-scheme-interim-evaluation

46 British Business Bank, *Evaluation of the Bounce Back Loan Scheme, Coronavirus Business Interruption Loan Scheme, and Coronavirus Large Business Interruption Loan Scheme: Process evaluation and early impact assessment*, 2022, www.british-business-bank.co.uk/wp-content/uploads/2022/06/Evaluation_of_BBLS_CBILS_and_CLBILS___Yr1_Report__accessible_.pdf

47 Organisation for Economic Co-operation and Development, *OECD Independent Fiscal Institutions Review: Office for Budget Responsibility (OBR) of the United Kingdom*, 2021, p. 55, www.oecd.org/gov/budgeting/oecd-ifi-review-of-the-office-for-budget-responsibility-obr-of-the-united-kingdom.pdf

48 HM Treasury, *Government Response to the 2022 Fiscal Risks and Sustainability Report*, HM Government, 2023, www.gov.uk/government/publications/government-response-to-the-2022-fiscal-risks-and-sustainability-report

49 HM Treasury, *Managing Fiscal Risks: Government response to the 2017 fiscal risks report*, Cm 9647, The Stationery Office, 2018, www.gov.uk/government/publications/managing-fiscal-risks-government-response-to-the-2017-fiscal-risks-report

50 Sunak R, 'OBR Fiscal Sustainability Report and response to the OBR 2019 Fiscal Risks Report: statement made on 14 July 2020', UK Parliament, 2020, https://questions-statements.parliament.uk/written-statements/detail/2020-07-14/HCWS364

51 Sunak R, 'Response to the 2021 Fiscal Risks Report', letter to Richard Hughes, Chair of the OBR, 23 March 2022, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1062385/_FINAL__Fiscal_Risks_Report_response.pdf

52 HM Treasury, *Charter for Budget Responsibility: Autumn 2022 update*, GOV.UK, 2022, www.gov.uk/government/publications/charter-for-budget-responsibility-autumn-2022-update

53 HM Treasury, *Charter for Budget Responsibility: Autumn 2016 update*, GOV.UK, 2016, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/583547/charter_for_budget_responsibility_autumn_2016_update_final_for_laying_web.pdf

54 Sasse T and Hodgkin R, *Managing Extreme Risks: How government can learn from Covid to be better prepared for the next crisis*, Institute for Government, 2022, www.instituteforgovernment.org.uk/publication/report/managing-extreme-risks

55 *Ibid.*

56 Dunton J, 'Former EY partner hired as head of government risk profession', *Civil Service World*, 17 May 2022, www.civilserviceworld.com/professions/article/former-ey-partner-hired-as-head-of-government-risk-profession

57 Thomas A, Clyne R, Bishop M and Lilly A, *A New Statutory Role for the Civil Service*, Institute for Government, 2022, www.instituteforgovernment.org.uk/sites/default/files/publications/new-statutory-role-civil-service.pdf

58 Rutter J, *Relationship Breakdown: Civil service–ministerial relations: Time for a reset*, Institute for Government and the Bennett Institute for Public Policy, 2022, www.instituteforgovernment.org.uk/sites/default/files/2022-12/Breaking-point-civil-service-ministerial-relations.pdf

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