

Science and Technology

Oral evidence: The role of technology, research and innovation in the COVID-19 recovery, HC 697

Wednesday 21 April 2021

Ordered by the House of Commons to be published on 21 April 2021.

[Watch the meeting](#)

Members present: Greg Clark (Chair); Aaron Bell; Dawn Butler; Chris Clarkson; Mark Logan; Rebecca Long Bailey; Carol Monaghan; Zarah Sultana.

Questions 1 - 78

Witnesses

I: Hetan Shah, Chief Executive, British Academy; Sir Adrian Smith, President, Royal Society; and Hilary Reynolds CBE, Chief Executive, Association of Medical Research Charities.

II: Naomi Weir, Head of Innovation, Confederation of British Industry; and Verity Davidge, Director of Central Policy, Make UK.



Examination of witnesses

Witnesses: Hetan Shah, Sir Adrian Smith and Hilary Reynolds.

Q1 Chair: The Science and Technology Committee is now in session. Today, we begin taking oral evidence on the prospective role of technology, research and innovation in the recovery from Covid-19. For most of this new inquiry the Committee intends to meet and take evidence from witnesses in towns and cities across the United Kingdom, to learn from and to highlight the abundant regional strengths that we have in technology, science and research.

For this session, we begin with some representatives and witnesses from national organisations. In particular, we want to follow up with our first panel some concerns that we raised on science funding with the Secretary of State when he appeared before the Committee on 17 March and in a letter that the Committee wrote to the Prime Minister on 23 March.

For that purpose, I am pleased to welcome our first panel of witnesses: Sir Adrian Smith, President of the Royal Society, the UK's national academy of science; Hetan Shah, chief executive of the British Academy, the UK's national academy for the humanities and social sciences; and Hilary Reynolds, chief executive of the Association of Medical Research Charities. Thank you very much for joining us today.

Perhaps I can start on the question of science funding for the current financial year. Starting with Sir Adrian, previously the subscription to Horizon Europe, the European science programme, came out of the overall EU budget, but now that we have left the EU it has to be funded separately. The proposal is that it comes from the domestic science budget. You raised, on behalf of the Royal Society, concerns that for the first year—the current year—that subscription would be about £1 billion, and that would, in effect, come out of the research budget that UKRI, which funds the research councils, has.

Following the representations that you, the Committee and others made, the Government made an announcement on 1 April that it was providing another £250 million from this year. [*Inaudible.*] Sir Adrian?

Sir Adrian Smith: Greg, you froze on my screen for a second. Could you repeat the punchline question?

Chair: It wasn't much of a punchline. It was to ask you whether you are satisfied that the problem you identified—the shortfall—has been fully made up.

Sir Adrian Smith: I think so but I am not absolutely sure. The Royal Society has written again to BEIS seeking various clarifications. The £250 million was the headline figure. There was also £400 million of funding earmarked for Government "priorities", and a further £350 million from somewhere. Maybe that "somewhere" was a notional discovery fund that would have been in operation had we not associated.



I have to say that it was a rather obtuse announcement, which made it very difficult to unpick, but if you add up the £250 million, the £400 million and the £350 million, you reach the billion that we were worried would be taken off the UKRI budget for next year. In the short term that worry has gone away, but it is rather disconcerting that, on the one hand, we have the rhetoric of aspiring to be a science superpower and the announcements about the £22 billion by 2024-25. It does not help to have these stop-start announcements and uncertainties.

For the moment, it is fine, but we are trying to get from BEIS and others a much more concrete plan over the next few years, year by year, including estimates, in some sense, of what we are going to get back from Horizon, because that is an unknown. Towards the end of the hiatus period post the referendum and pre the Brexit decision, at our peak we were getting about 16% out of the Horizon 2020 overall funds. That figure had drifted down to about 10% because of the uncertainties over that period, so there is a job to be done. Part of the calculation is what we will get back from the association. We and others are trying to stimulate the community to get in there and fight for the funds. There is still a slight cloud of uncertainty but the announcement was helpful. Let's agree that.

Q2 Chair: Thank you. You think it is all right but you want to tie down the precise numbers.

Sir Adrian Smith: Yes. Of course, you have to see this in the wider context of the knock-on effects on research of the ODA cuts. It is a matter for Government as to what they want to do on overseas aid, but I am not sure whether there was a realisation of the impact on research. *Research Fortnight* has estimated that over the 18-month period about £400 million has disappeared from overall research spend. I am sure that Hilary will follow up on this point, but you have had the fact of the cuts in the medical charities. If you look at the overall research budget there are things to be concerned about, particularly in the context of the aspiration to be a science superpower.

Q3 Chair: Thank you, Sir Adrian. That is very helpful. We are going to go into some questions on ODA and, indeed, the medical research charities. The three were mentioned in our letter to the Prime Minister.

I have one point on the Horizon programme. You said that the proportion of successful participating bids had fallen from 16% to 10%. Is there any reason to think that being associated rather than being a full member of Horizon should lead us to be less successful, or are these things decided—

Sir Adrian Smith: No, not necessarily. It was a reflection that the uncertainty and perturbation to individual research planning and the networks that had been built up means there is something to be repaired. We are not starting from the high base we were at one time. It drifted



HOUSE OF COMMONS

down during the period of uncertainty over the period post the referendum.

Q4 Chair: Thank you very much indeed. Just before I go to my colleagues, starting with Carol Monaghan, let me ask Mr Shah the same question. You commented at the time of the announcement of this £250 million that it was welcome. Are you satisfied that there is not going to be a cut to the science budget this current year, which would be paradoxical, as we pointed out, given that the science budget is increasing enormously from £9.5 billion in 2016-17 to £22 billion by 2024-25? We thought it must be unintentional that you would have a reverse, but are you satisfied that this reverse has been checked?

Hetan Shah: I would agree with Adrian's analysis. For this year we are likely to see a small increase in the science budget overall. In effect, we will get through, as Adrian was saying, the £250 million, the £400 million and £350 million, perhaps, down the back of a sofa. What the Committee should put its mind to is the question of the medium run. Where will Horizon be funded from into the future? What would the British Academy like to see, after quite a long period of uncertainty? Let's just think about the context. You've had the pandemic, a series of one-year funding settlements for science and research for several years, ODA cuts and so on. All of this has led to considerable uncertainty within the community. The coming spending review provides a really big opportunity. In a sense, it is a shame because the Government's key message about us hitting 2.4% by 2027 has rather become lost in all of this. Probably most of the research community is unaware of that.

This summer or autumn, during the spending review, there is a really big opportunity to put all of this behind it and lay out, as was said earlier, a longer-term settlement. I would like to see the Government go beyond the traditional SR cycle and put out a 10-year vision for science and research spend. Horizon money could be ring-fenced within that, as it were, so that it becomes very clear that that is not then creaming off from other protected budgets.

Q5 Chair: On the £350 million, which, as you said, has been found down the back of a sofa, I want to be sure about that. It implies a pretty big sofa to have £350 million tucked away behind a cushion. Have you any visibility or insight as to where that comes from? Are you sure that Peter is not being robbed to pay Paul?

Hetan Shah: No. We all need much more transparency in all of this. Even the billion figure is a slightly hypothetical figure that the community is working off. This year will be a slightly shorter commitment to Horizon, plus the payment for Horizon is backloaded rather than frontloaded, so it will increase over the years. All of us need to press BEIS on more clarity. The sense that we have, from talking to officials, is that this year we will get through it, but the uncertainty has just been pushed back a further year; and the bill will get bigger as years go by.



Q6 **Chair:** Thank you. My colleagues will have some further questions.

Finally, from me, I have an introductory question to Hilary Reynolds. You represent the medical research charities, like the British Heart Foundation and Cancer Research UK, who raise funds to support their research. Would you set out for the context of the Committee why there has been a problem this year pertaining particularly to these charities?

Hilary Reynolds: Of course, Greg. Thank you for the opportunity. We represent around 150 medical research charities from the household names to the tiny charities who fund vital research into rare diseases and unmet need. Charities get their money from fundraising as well as some from philanthropic trusts. But fundraising through big, mass engagement events, such as marathons or bike runs, has not happened during the last year. Community fundraising through coffee mornings, bucket rattling and door-to-door, among friends, family, neighbours and communities related to people who care about the conditions, has not happened because of social distancing.

Shopping to support medical research at shops run by organisations like Cancer Research UK and British Heart Foundation has not happened because shops have been shut. So three huge sources of fundraised income have been completely lost to the sector for the best part of the year. Charities still get legacies, regular giving and some support from philanthropic trusts. We know that this is a popular cause as more than seven million of us support medical research charities in this country. Huge sources of funding have simply not been available. As a result, we have seen a catastrophic loss of fundraised income.

We have been surveying our charity members throughout the year on what the impact is. To date, we have been giving you data on what our charities have been predicting and estimating. Today, I am going to be able to give you some data of what has actually happened. We have just finished our one-year-on survey of what has happened. Our charities have seen a drop in income of at least £292 million since the start of the pandemic. Two out of three of our charities have seen a huge drop in their income, which, of course, translates into the funding they can then put into research. I hope that gives a bit of context to the Committee. It is a real and present emergency, but it is short term.

We know that as the economy bounces back, as social restrictions are lifted, as shops open, and as community and mass events start happening again, the public, society and community will start sponsoring people and supporting charities again, but we have a real emergency now, which has a long-term impact.

Chair: Thank you for that. Thanks for taking the trouble to compile the latest figures on which to brief the Committee. We will go into this in a bit more detail but I want to hand over to my colleague, Carol Monaghan.

Q7 **Carol Monaghan:** Sir Adrian, could I come to you first of all? You have already told us this morning that you understand, with the piecemeal bits



of funding, that we could be up to just about the same sort of levels. We have heard Hetan Shah say this morning that we need a far longer-term view of science research. Is there a danger, if research communities have to go out with a begging bowl and lobby the Government to get this, that not only do we not get the longer-term certainty but it is damaging for the sector long term?

Sir Adrian Smith: Clearly, there is some relief that what looked as though it was going to be a major problem this coming year now looks solved, but it is only solved in the context, really, of the funding going through UKRI. We have just heard from Hilary that there is nearly £300 million not there in medical research. *Research Fortnight* has estimated that nearly £400 million is not coming out of ODA. If you look at the big picture, that has implications for the funding of young researchers. There are an awful lot of post-docs or whatever who are not going to be funded if you add up the £400 million and the £300 million.

The overall picture is not really compatible with the aspiration to be the great science superpower. You have to see things overall. Your point is that, okay, maybe we have solved it for the coming year, at least for UKRI, but there is a great opportunity for the Government to be transparent and put forward the spending plan—even if we cannot get to Hetan's 10 years—over the next five to seven, because the Horizon stuff extends over seven years, for example. It is a bit puzzling. Why not have the clarity and get the brownie points for it? Lurching around putting hands down sofas is not really compatible with the aspiration. It is annoying.

Publish a plan looking at the spend over the next few years, give everybody the confidence, and give them wider confidence, because when we talk about the 2.4% aspiration—which, incidentally, was based on an average of OECD spend, which is now nearer 2.5%, and in the United States it is nearer 3%—we have to keep the ambition going.

When we look at it in that kind of context, we need to see years ahead. You cannot switch research on and off on a stop-go basis. Projects are funded for three, maybe five years. There are generations of young researchers dependent on that funding.

Q8 **Carol Monaghan:** Sir Adrian, your sound keeps dipping slightly. I wonder if you are moving away from the microphone. That is better; thank you. You have said that we should still be able to access the different work programmes in Horizon Europe. We have heard that in the 2021-22 work programme for digital industry and space that the UK will be excluded from certain quantum computing and space aspects. That is, obviously, worrying. Some might consider that that is a niche sector. Is there a danger that there are other small sectors like that from which we could see ourselves excluded in terms of Horizon Europe?

Sir Adrian Smith: There is clearly a danger. We went into this with eyes open. It was absolutely clear that there would be exclusion rights from



the EU in the new programme. Let's hope it does not extend and creep into other areas. This was expected up front so this is not a surprise.

Q9 **Carol Monaghan:** Should the Government be funding these sectors that have potentially lost money from their exclusion?

Sir Adrian Smith: There is a clear national aspiration to get into the quantum space in spades. That one, at least, is covered.

Q10 **Carol Monaghan:** If I could move on to the ODA, many of us are being lobbied quite hard by universities, research groups and individuals working in this area. I wonder if Hilary Reynolds might be the best person to answer this question. What are the impacts within the medical research area? Are there going to be implications from these cuts to ODA, and how might we see them manifesting themselves?

Hilary Reynolds: Thank you. I am almost certainly not the best person to talk about overseas development assistance. There are impacts because medical research, among many other areas, is a global endeavour. Research crosses boundaries. The research that we do here benefits the world, and the research that is done in the world benefits the UK. Cuts in the money that supports development assistance hurts medical research of all kinds. I suspect that Hetan or Adrian are probably better placed than me.

Q11 **Carol Monaghan:** Would either of the other two panellists like to contribute?

Hetan Shah: I would be happy to. These cuts have hit, of course, medical and health research, which is very problematic at a time of a global pandemic where we know that national borders do not keep us safe. This affects a wider range of projects, such as issues around tackling poverty, inequality, the most vulnerable communities and even things like misinformation, which of course pose health risks in themselves. The full span of disciplines and projects have been hit. As Adrian said earlier, it felt almost as if this was a side effect and not one that had particularly been anticipated.

Unfortunately, in-flight projects being cut is almost unprecedented. That has really knocked confidence in our community. Again, looking ahead, one of the key things in the next spending review is for the Government to set out a much clearer international strategy. We have just come off the launch of the integrated review, which is talking about Global Britain and the role of science and research within that. That is an opportunity now to ask: how do we want to make this work?

In particular, it is an opportunity for us to think about mobility as well in how we are going to attract and retain the best researchers from around the world. As to the signal sent by cutting projects in flight, I remember reading a quote from one of the project partners in Brazil, who said, "This sort of thing happens in Brazil, but I would never have expected it to happen in Britain." These things can send very important signals to



international partners almost over and above the value of the project itself.

Q12 **Carol Monaghan:** For us uninformed politicians and for us who do not properly understand such issues, what might be the long-term impact for us living in the UK of cutting these overseas funds?

Hetan Shah: Many global issues and challenges these days are not restricted to national borders, so many of these projects may be thinking about, for example, sustainable development issues, the way that cities are changing, how to tackle violence and how to tackle poverty. The pandemic, again, is an obvious one. There are feedback effects. If we don't tackle poverty internationally, there are all sorts of knock-on effects in terms of migration and so on that feed back to our own country. Dealing with poverty around the world only helps us. That is the starting point.

As I said, there is a wider knock-on effect in terms of the impact on our own research community. The way that these ODA cuts have manifested has sent quite a negative signal to the wider world about the way that our research system operates. It is now a very internationally competitive market for talent. If we want our actions to match the rhetoric of being a research superpower, we need to correct that.

Carol Monaghan: That is very clear. Thank you, Chair.

Q13 **Aaron Bell:** I thank all three witnesses for their time and I promise not to throw you any Bayesian curve balls this week, Sir Adrian. Sir Adrian gave evidence to the ARIA Bill Committee last week.

I would like to talk about the role of the research community in the economic recovery. I would like to hear the thoughts of all three witnesses about whether the current or post-Covid situation leads to particular new opportunities. As a result of the pandemic, are there different innovations that we need than there might have been 15 months ago? Let me start with Sir Adrian.

Sir Adrian Smith: Before I get on to answering that question directly, just remember all the excitement of the vaccines and the rest of it. We must remind ourselves that this was possible because of decades of sustained investment in people, research and facilities. The long-term investment continues to be fundamental.

In terms of particular opportunities, we are going to have to re-think in some sense some of the ways that we do research and, in particular, the international positioning, which we talked about earlier. The big issues—the net zeroes, the biodiversity and the pandemics—are all global, international issues. They are not UK-bounded. A lot of attention going forward has been on how we best work internationally. Again, it is a bit odd saying that in the context of what we have just been saying about the ODA cuts, but we are not going to be able to solve issues relating to climate change as the UK. We really do need a lot of international



HOUSE OF COMMONS

collaboration. We are already trying to get these things on the agenda of the G7, in particular, in terms of net zero climate change and biodiversity.

The international agenda becomes ever more important. Hetan said just now that we need clarity from the Government on what it perceives the international strategy to be. I would focus my answer by saying that the dominant thing is the international scene, how we play it and how we position ourselves in it. Of course, people are unbelievably relevant and important in this matter.

For us to continue to be a magnet for global talent, again, we have to think about visa policies and immigration policies. It is all about positioning ourselves internationally and exploiting the international and global nature of the challenges ahead. That would be my high-level response to your question.

Q14 **Aaron Bell:** Mr Shah, I put the same question to you. How do we ensure that we get insights from the full range of research disciplines, including the arts and humanities?

Hetan Shah: In some ways the nature of the pandemic has not necessarily structurally changed the UK economy. In some ways it is a one-off shock that has accelerated trends that already existed economically. We did a report for Sir Patrick Vallance on the societal impacts of the pandemic, looking also at the inequalities that had been strained, the impacts on communities, mental health and so on.

We need to think about all of this in the round. This is where the humanities and social sciences have really big roles to play. Economists have been advising on the nature of how you deal with a macro economy, the fact that we have big loans to businesses, and how HMRC deals with all those things. You have issues like vaccine passports, which philosophers and lawyers have been thinking about. Geographers have been thinking about the levelling-up agenda that the Government are thinking about, regional productivity issues and so on. Demographers and social statisticians have been thinking about inequalities. This is a question of using the full range of disciplines.

One of the strengths of the UK is that we are so good at a range of things. We are not just brilliant at engineering or one discipline. We should be leaning into that as a national strength.

Q15 **Aaron Bell:** You mentioned some of the immediate challenges. One of the long-term challenges is the change to the world of work and the digital infrastructure changes we have seen over the past 15 months. Going forward, what further innovations flow from that? I do not mean further innovations in terms of video technology, but what other things do we need to think about that might flow from changes to the world of work and the way people work?



Hetan Shah: One of the things we have seen is a shift in the way that the research community and policy community have been working together and the way that data is being used and flowing. We need much quicker realtime data and data analysis to be able to see how all of this is playing out. Once we are allowed to go back to offices, none of us know how that will look or play out in practice. We will need very quick realtime data, which will have knock-on effects on transport policy, urban planning and so on. You are quite right to point to digital policy as a key area now for investment. Again, our report pointed to investing in both digital infrastructure and digital skills as a key area now for the future of the economy and for public services as well.

Q16 **Aaron Bell:** Thank you, Mr Shah.

Hilary Reynolds, I put the same sort of questions to you, with a particular focus, I guess, on the life sciences and the sort of research your members will be doing. Which areas should be prioritised for investment as the UK recovers?

Hilary Reynolds: Thank you. I would absolutely support what Adrian and Hetan have said. I would add that one of the things that has come to the fore for many people is the part that charity-funded research plays in the life sciences and medical space. Charities fund over half of all publicly funded medical research, more than the National Institute for Health Research and the Medical Research Council put together. It is an integral part of the ecosystem.

Looking forward, an essential part of the recovery is a recognition in structural and equal-voice terms of the whole of the ecosystem and not just parts of it. We have also seen the power that collaboration and partnerships play during the pandemic and can play going forward. Just as Hetan talked about interdisciplinary collaboration and the power that that releases, we have seen the power of collaboration across industry, academia, the health service, charities, as well as Government funding to drive research quickly from basic science into genuine treatments and support that make a real difference to people living in our communities. We are starting to see certainly some of our charities become more agile in what they choose to fund and how quickly they can take risks to get genuine benefits out to patients.

We have seen real investment in things like self-management and how to research that, so that patients can look after themselves, that being a necessity in parts of the pandemic, how to do clinical trials other than in the somewhat traditional settings and, absolutely, the use of data to inform decision making and to help with deciding what to fund, how to fund it and where to fund it.

The other thing we will see is a much greater focus on tackling some of the structural inequalities across the medical and health systems in our country, and using all of the ecosystem, including charities, which



frequently reach further into some of those vulnerable and disadvantaged communities for their benefit.

Q17 Aaron Bell: Thank you. Sir Adrian, you were quite right to say that the challenges are international in nature, most obviously climate change. In fact, we were discussing this at the ARIA Bill Committee yesterday when we were talking about the potential mission of ARIA. Where is the UK's competitive advantage? Is it not in those sorts of areas that Hilary was just talking about, namely, the intersection of healthcare, life sciences and digital? We only have a limited amount of funding, however much we increase that, so should we not be focusing it on areas where the UK has a competitive advantage?

Sir Adrian Smith: To some extent. How do you draw the boundaries? If you look at the issues that arise in terms of the pandemic, we have talked about data, all the skills around data, statistics, artificial intelligence and so on. When you get into policy, we are into the territory of behaviour and economic implications. It is almost deflecting Hetan's answer back earlier. All disciplines suddenly come to bear. It is not obvious what you focus on. Clearly, the UK is very strong in life sciences and generally in terms of things associated with digital and data. I do not think there is a case for saying, "Here is clearly an area where we should disinvest." I don't believe that.

Q18 Aaron Bell: I have one more question for the panel, which is a historical question. What lessons can we learn from the role of research in recoveries both from previous economic downturns and also previous global crises, such as world wars, in what we now do in our response to the post-pandemic world? Are there historical lessons that we can draw? I will start with you, again, Sir Adrian.

Sir Adrian Smith: Let's remind ourselves that, when we talk about the 2.4% targets or higher targets, private investment, business investment, is a huge part of the R&D landscape. We are going to be dependent on the confidence that will allow that private investment to take place, which really takes us back to the central proposition, that we need clear, committed and public expenditure to encourage and to crowd in the private investment. The key thing is confidence in a future plan that will encourage both public and private investment. There is a danger that there will be a loss of confidence in investment.

Q19 Aaron Bell: We absolutely need to create that business confidence as well as the funding confidence. Mr Shah, do you have any historical perspective to bring to this?

Hetan Shah: What is interesting is contrasting periods of turmoil where there have been major changes—world war two is a good example, which led to the creation of the welfare state, the Beveridge report and so on—compared to times when things did not happen. Spanish flu is an example, or even 19th century cholera, where there was an attempt to change public health, but that fell back because of lack of public support.



HOUSE OF COMMONS

I appreciate some of the lessons that come out are the need for political leadership, both from politicians and also from leading people in the civil service, as well as business and civil society, coming together around a common purpose. One of my worries is that the pandemic has left everyone exhausted. Although there is considerable good will—we all feel it; we all, as individuals, feel it, I am sure—we just want it all to go away and things to go back to normal, but what is that normal and was it that good anyway?

The question is of using this moment, where there is some public support for not just flipping back to how things were. As you say, there are some new opportunities around digital, the green economy and so on, to galvanise people around a common purpose, where good will exists, but the danger of exhaustion has to be borne in mind.

Q20 Aaron Bell: That is a very interesting point. You are basically saying that we need to seize the day, and not just the scientific community but the political leadership as well. Hilary Reynolds, do you have any further thoughts?

Hilary Reynolds: I absolutely echo that. The silver lining of Covid and probably other previous seismic shocks has been finding unlikely partners whom you might not have known existed before, who have absolute common purpose. So the power of collaboration and partnership has absolutely shone through much of what has happened. We need to retain that. As Hetan says, we have to adjust to a new normal. We are not going to go back to how we were.

We need to continue with some of the partnerships we have created from nowhere and some of the innovation that has happened by necessity so that it becomes part of how we do things round here. We must recognise some of the things that have come to the fore. The structural inequalities in health in this country have really been laid bare by Covid. We need to take that and embed that in the way we think about the research we do, how we do it and the communities we need to reach with that research. So collaboration, partnership and a sustainable new normal would be the lessons I would take forward.

Aaron Bell: I thank all three of you. That is a great primer for our inquiry and the questions we will be asking around the country.

Chair: Thank you very much, Aaron. Rebecca Long Bailey.

Q21 Rebecca Long Bailey: Thank you to all of our witnesses for coming today. It is lovely to hear from you all. We have heard much about the effect of the cuts to ODA from you. Looking specifically for a moment at the effects of the pandemic on research funding, we know that the Association of Medical Research Charities projected an average 41% decrease in medical research spend over 2020. Similarly, Universities UK reported concerns regarding the projected downfall in the number of international students whose fees underpin research, as we know. They equated to a £1.5 billion annual deficit. So it looks very bleak.



HOUSE OF COMMONS

The Secretary for State for Business, Energy and Industrial Strategy indicated to the Committee recently that funding support measures would be announced soon, but he did not allude to what they might look like.

Let me start, first, with Sir Adrian. You have spoken today of the overall picture not being compatible with the Government's desire to become a scientific superpower. Indeed, we are nowhere near the 3% of GDP that other leading industrial nations spend on R&D. How much funding should the Government provide, at the very least, to stabilise research at this time, and how do you think that that funding should be targeted?

Sir Adrian Smith: If you take what has happened to the medical charities and ODA, there is something around, in the coming year, £700 million that is not in the overall system. You could take that for starters. As we go forward we, obviously, have to monitor how we are doing in the Horizon Europe space because, as far as I understand it—we have failed to get absolute clarity from BEIS—the Government are assuming that we will do “as well as we did in the past from those programmes.” If we do substantially worse, again, there will be a funding gap.

In the short term there is no getting away from it, and we keep coming back to it. The ODA *Research Fortnight* estimate of about £400 million and medical charities £300 million are quite substantial sums. I start from there. Getting on for a billion pounds is missing.

Q22 **Rebecca Long Bailey:** That is really helpful. Mr Shah, you spoke earlier of the risk of cutting projects mid-flight. How acute is that risk in humanities and social science at the moment due to funding drops? What would you like specifically to see from Government?

Hetan Shah: Humanities and social sciences have certainly contributed a lot to these ODA-funded projects. They will suffer as much but not exclusively. Other disciplines will be affected, too. In an ideal circumstance, Government would just retract this. There is still time to do that because, in effect, projects are currently running until July. Also, there is no money for new international ODA-funded projects this year. Let's retract the cuts and let's put in money for new projects. The reality is, probably, that that is not going to happen.

I am focusing on looking ahead. There is going to be more money in the system if we are moving towards 2.4% by 2027. That is not enough. As you say, we should probably be now looking to 3%. To hit the average by 2027 is relatively unambitious.

We do not have a clear international strategy. What is it that we, as the UK, want to be Global Britain? What are the relationships we want with poorer developing nations, which might be funded through ODA? Also, what are the relationships that we want with other countries? In a sense, that has been a blind spot in strategy in recent years. This is an opportunity now to take stock and say, “Let's think about the full gamut of projects.” Hopefully, if we move back to the 0.7% of aid and that ODA



money comes back, we would also like to see the GCRF—the global challenges research fund—stay in place as well.

Q23 Rebecca Long Bailey: Thanks, Mr Shah. Ms Reynolds, you have already spoken of the impact of restrictions on fundraising activities for medical research charities. It was an eye-watering £292 million figure that you referred to. How damaging is this to the progress of medical research over the next 12 months? Are any projects specifically at risk of being cut? As with all the other witnesses, what research support would you like to see specifically being handed over by the Government?

Hilary Reynolds: As I said, our charities have seen a drop in their income of £292 million. Through dipping into reserves and desperately trying to protect research, we have actually seen research investment drop by £270 million since the start of the pandemic. That translates into a range of things. Most of our charities have tried to protect and honour existing commitments. That has not been possible in all places. We have seen new grant rounds cancelled. We have seen plans for early-career researcher programmes and places delayed or dropped.

At the height of the lockdown 70% of our members' clinical trials and studies funded were stopped, paused or delayed. The figure is down to 20%, which means that 20% are still on hold or cancelled altogether.

Almost a third of our charities have had to cancel new research projects that are crucial to developing new treatments. Half of our members expect to have to cut their research funding still further in this coming year by over a third from what their strategies say. That is because the funding income does not bounce back immediately. Even with charity shops now open, it is going to take time to come back.

Let me give you a couple of examples of our really small charities that are doing great research in neglected areas. Brain Tumour have cancelled their next two grant rounds, so they are reducing their spend because they don't have the money by up to £5.5 million over the next five years. That is probably around eight fewer major research projects into researching brain tumours that can make a real difference to patients' lives. The Tuberous Sclerosis Association is a small charity dealing with a really rare genetic condition that is awful for people who have it. They have used their reserves to protect their current research, but that means there is no money available for any new research in the next few years. Autistica funds research that people with autism really value. They have had to drop their commitment to an early career researcher training programme altogether.

Those are just three small charities doing vital work into research. I could give you dozens and dozens of similar stories.

Looking forward, we are looking for a recognition that the medical research charities are not a "nice-to-have" but are an essential and integral part of the ecosystem, and they have a temporary emergency.



We know that funding will bounce back. We are looking for temporary, short-term financial support to protect existing research and to enable new research to get going so that the long-term impact on careers, researcher talent and projects that really can bring new treatments and hope are not damaged irreversibly. Let us avoid the long Covid shadow on research. There is still time for the Government to offer that funding now to help our long-term impact.

Q24 **Rebecca Long Bailey:** Thank you, Ms Reynolds. What you have just told us is quite frightening. I wanted to finish on the pausing of research during the pandemic. I want to ask a general question to our witnesses about how successful the Government's efforts have been in restarting research activities that were paused—for example, the Government's National Institute for Health Research restart framework. I will start with Ms Reynolds, as we have just been speaking about this.

Hilary Reynolds: We have been part of the restart work in collaboration. It has been a great example of looking across the whole system with NIHR, bringing together industry, academia, universities and us, the medical research charities. It has been really difficult to restart in a sequenced and pragmatic way that recognises all the many different interests. The programme has been led with compassion, collaboration and clear-sightedness. If we can keep that going forward as we enter the transition into another stage of new normal, that will be very helpful.

It is difficult. Some really tough decisions have to be made, because prioritisation and sequencing, inevitably, means that not everybody can restart when they want. Some treatments continue to be delayed. It has been a good start, and I commend NIHR for what they have done and how they have done it with us. That is really important.

Q25 **Rebecca Long Bailey:** Thank you, Ms Reynolds. Mr Shah, what are your views? How successful have Government efforts been in restarting paused research activity?

Hetan Shah: You are right to point to this issue of how the pandemic has affected research activities. In the humanities and social sciences, it is archives and library access. Those are our labs, as it were, which we have just not been able to get into. That has been really problematic. More could be done to speed up all of that accessibility.

The other thing I would point to is the real impact on early-career researchers. They have been hit absolutely the hardest in all of this, which is important. This is something your Committee might want to put your minds to. How do we make sure there is not a lost generation of researchers? They are on vulnerable teaching contracts. When universities had precarious finances, they were the first ones to be cut back.

The final reflection is what the equality, diversity and inclusion impacts are of the pandemic. It is pretty clear—this is, again, based on our British



Academy report—that those who have caring responsibilities in society were much more impacted across the board. Those who were poorest were impacted much more across the board—this is in general, not just on research—but that will flow through, of course, to the research community as well. Again, looking ahead, how do we design things that will help support the people who will be most impacted?

Q26 **Rebecca Long Bailey:** That was really helpful. Finally, Sir Adrian, what are your views? How well have the Government done in restarting paused research activities?

Sir Adrian Smith: Let me echo the points that Hilary and Hetan have made. There has been welcome funding for costed extensions to some research award holders. That has been positive. It is really too soon across the board to tell. At the Royal Society we are conducting surveys of grant holders to work out what the implications are.

Chair: Can you lean forward into your mic a bit more?

Sir Adrian Smith: I am sorry. With another hat on, I chair the board of the Diamond Synchrotron at Harwell. They have done magnificently in keeping the show on the road, but there are issues around the big facilities where certain things cannot be operated remotely. A survey to find out the implications across the board is needed. It is rather too soon to say, in general, what is happening and what would be the remedial actions.

Rebecca Long Bailey: Thank you. That was really helpful.

Q27 **Chair:** Thank you very much, indeed, Rebecca. Before I go back to Carol Monaghan and Zarah Sultana, I want to follow up on some of this medical research work, perhaps with Hilary Reynolds. You said that there was a £292 million drop in fundraising income, and that had translated into a £270 million drop in research funding. You also said that there had been pauses on some clinical trials, which the Committee had been concerned about. In other words, because of lockdown restrictions some of the medical research could not take place.

Hilary Reynolds: Yes.

Q28 **Chair:** Do you have any feel, within that £270 million, for what proportion is accounted for by the funds not being available and what proportion of the medical research projects could not be conducted because of the restrictions?

Hilary Reynolds: Okay. Only a small number of our charities undertake clinical trials, so the vast majority of our £270 million cut is research not happening in universities because we do not have the money, as well as some of the labs are closed, some of the researchers are on furlough, have caring responsibilities, are sick or have been back on the frontline. Our charities have not had the money to undertake the research that they had hoped to do to bring real benefits to patients.



HOUSE OF COMMONS

Q29 **Chair:** But the bulk of it is funding rather than other restrictions. In terms of what can be done about it, if the Government were minded to act, one thing you proposed was something called a life sciences charity partnership fund. Would you say a bit about that and how that might help?

Hilary Reynolds: We proposed back in the autumn some co-investments, because we are not after charity from the Government. We were looking for a partnership where the Government would put money into a fund into which charities would also contribute their part to ensure that research could continue. At that point, we pegged it at the level that charities were signalling to us would be the shortfall, which was some £310 million. Our recent figures show that figure to be about £270 million, so we were not that far off.

For two or three years there was co-investment with the Government supporting the continuation of charity research. That was one of the propositions we made. We have been engaging with officials at BEIS and DHSC throughout. They have been very open to listening about our impact and have been engaging. We have had many warm words but no commitment to any form of support, whether a partnership fund or other ways of providing protection to research. This is not about money to the charities. This is about money to the medical research that charities fund.

Q30 **Chair:** Finally, on this, you said that you expect the charity research funding to bounce back. This was a temporary inability to fundraise in large part. It is a question of bridging over this gap, smoothing into, hopefully, a buoyant revenue stream in the future. From my experience in government, sometimes it is easier to find ways to guarantee support, whether that is through loans, covenants or whatever, rather than grants. They are called financial transactions. Is that something you have explored here so that you could continue to have the projects taking place, confident that you are going to be able to fund them in the long term?

Hilary Reynolds: We have been open to and talking about all sorts of options with Government as well as finding out what would be possible for our members to undertake. Not all charities would be able to take out loans, for instance. So far, we have had no commitments. The Government have not yet chosen to make the investment of any sort in charity-funded medical research. In the short term, we expect it might take about three and a half years to bounce back from here.

Q31 **Chair:** Just so we know where appropriately to direct our attentions, is it principally BEIS, the business Department, or the health Department, that you deal with in this?

Hilary Reynolds: BEIS looks after the research and development area, yes.

Chair: Thank you very much. Carol Monaghan.



Q32 Carol Monaghan: I want to talk a little about the workforce. We have had evidence from Universities UK that says that an increase in innovation activity requires a boost to the number of skilled workers. The Royal Academy of Engineering has said: "Our ambitions on research, development and commercialisation are threatened by an on-going crisis in the number and diversity of people with the appropriate skills."

If I could turn first to Hetan Shah, how do we ensure that the UK's workforce has the skills that we require, both in terms of dealing with the post-pandemic response but also when we look at the UK's ambition in science and research?

Hetan Shah: One thing to keep in mind is that the UK is an 80% services economy, so the kinds of skills and knowledge in our intangible economy are of a particular sort. I would say this, but the sorts of disciplines that the British Academy represents—we are increasingly talking about the SHA disciplines: the social sciences, humanities and arts for people in the economy, working alongside the STEM disciplines—really help strengthen the skills of the UK workforce in general, which is very helpful.

For the research community itself, a series of challenges is coming down the track around the use of data, data science, AI, statistical skills and so on, which is something we will need to grow. There are some efforts under way but more could be done.

The final bit of this jigsaw that we need to think about is mobility. It is not just about the talent that we already have in this country but how we recruit and retain the best talent from around the world. One issue that we are finding is around the whole visa regime. Work done by the Royal Society has shown that we are very uncompetitive in terms of the costs around visas and so on. Also, I have been rather shocked, if I may say so, in recent months, post Brexit, at the lack of recognition, for example, around English language-taught degrees in universities in Europe not being seen as sufficient for English language proficiency. This is now a block. We are asking for basic England language tests from people who can clearly speak English. That is a barrier to the UK being a very welcoming place for the best skills.

Q33 Carol Monaghan: The Government repeat regularly that the UK will be the best place to do science and research; we will have new visas that will make this possible; and we will attract the brightest and the best. We have coming in next year the points-based visa and the global talent visa. Do you think that this will help attract the type of people whom we want to be coming to the UK?

Hetan Shah: The global talent visa is a really positive step in the right direction. We need to build upon it and make it more flexible. In particular, we must think about how we bring in early-career researchers and others through it as well. Alongside that, we need to look at the skilled-worker visa, and the language and other frictions surrounding



that. Once we are in a more post-pandemic landscape, we need to look at some shorter-term visiting arrangements. Again, there are frictions here. Where there used to be inward and outward fellowships for short-term teaching arrangements, all of that is seeming to become more difficult.

Q34 **Carol Monaghan:** You have talked about the English language test. Do you see them as jarring against these new visas and providing an obstacle that should not exist?

Hetan Shah: It is all incremental, isn't it? The cost of the visa itself is not necessarily going to put people off and doing yet one more test is not necessarily going to put people off, but each restriction in and of itself builds up and up, and over time it leads to a feeling that the UK is not as open and welcoming as we would like it to be. In fact, Government policy does want to become much more open. In a sense, we are trying to help pinpoint where those blockages are so that they can be fixed.

Q35 **Carol Monaghan:** Sir Adrian, let me follow up with that and ask whether, with our participation in Horizon Europe, alongside these new visas, this will be enough to get the right people?

Sir Adrian Smith: The visa changes are a step in the right direction, but the costs are still quite high. If you take people at various stages of their career, young post-docs may have families. By the time you have a partner and two or three children, the cost of the visas is quite significant.

I echo the point in terms of retaining talented researchers and attracting talented researchers.

Let me make one point that has not been made about the workforce. Interestingly, when the television cameras panned around the laboratories where the vaccines are being developed, you focus on the leading scientists at the interviews, yet in the background there are armies of technicians and lab assistants. The scientific effort extends into many arenas. One thing that might come out of the Augar review and Government interest is more attention on further education and technical education. We really do need a lot more bodies in the system as we move forward in hi-tech jobs, data and digital. The home-grown pipeline also needs attention, in addition to thinking about the flows of talented people in and out internationally.

Chair: Thank you very much indeed. We will go to Zarah Sultana, and then Carol has one further question.

Q36 **Zarah Sultana:** Thank you, Chair. I will start off with Sir Adrian. We have covered a lot in this session already about the challenges facing the research community. We know that the impact of coronavirus is going to last, potentially, for a decade. How can the research community be supported in its role within the UK's economic recovery? We have touched on funding cuts to ODA, GCRF, Newton and leaving Horizon. Are there any other points that you want to touch on?



Sir Adrian Smith: With the existing and coming community, we are back to the same issue. It is the issue of funding and sustainable funding over a period that gives confidence for further investment. The internationalisation, the flow of people and the flow of talent that Hetan referred to is absolutely fundamental. It is getting the visa system and the rest right so that we genuinely are—not just in aspiration and rhetoric—a welcoming and fabulous place to come and do science and to invest. It all goes back to the funding. If we don't have that funding, long-term commitment, a serious place and an international strategy, it will affect the confidence that we need to go forward.

Q37 **Zarah Sultana:** This is a follow-up to that before I go to the other panellists. The Government recently published their plan for growth. Do you think that goes far enough and what more needs to be included in that, if it does not?

Sir Adrian Smith: It is a general plan, but what needs to come in behind it are very specific policies. A road map in terms of policy rather than just aspiration is the issue.

Q38 **Zarah Sultana:** Thank you, Sir Adrian. Hetan?

Hetan Shah: I would certainly echo this point about policy certainty. That is probably the key theme that comes out.

Turning to the plan for growth, growth will come from the private sector. Government can only create the framework and the framing conditions for that. What we have seen over recent years is quite a lot of changing frameworks. There was a focus on industrial strategy, which, in a sense, business and others were gearing themselves around. That now seems to have shifted. We now have a plan for growth and we also have an innovations strategy coming up. I am sure these will all be good things, but let's have some certainty so that everyone can organise around those things. There can be, sometimes, too much policy churn, which makes it difficult for business and others to have certainty.

The other thing that is worth reflecting on is the way that the science and research portfolio works across Government. If the integrated review and the ambitions of the Government are that science and research informs everything across Government, it is noteworthy that we have split the science and universities Minister post, so that now sits across two Departments. There was some strength in doing that, to have universities in with the Department for Education, but it has weakened the role. There is a danger of the two bits not always being in lockstep. There was a time when that role would attend Cabinet. That is no longer the case.

During this period of turmoil, who has been representing science and research at the highest level? There was a time, I suppose, when that was being driven by No. 10. If that fades, you do need strength at the political level. One opportunity, perhaps, is the Prime Minister's Council for Science and Technology, which has very senior people around that



table. The question is whether that Committee might play more of a strategic role looking at the way that research is being used across Government, because it is not just BEIS but the Department for Defence, the Department for Health, and all these Departments are thinking about how to use research. What is the way in which we make the most strategic use of that?

Q39 **Zarah Sultana:** Thank you. That was really useful. Hilary?

Hilary Reynolds: Absolutely. The Government can create the right environment through a number of their levers, one of which is funding and another is the right conditions to attract and retain talent. They need to do that in a stable and sustained way. Uncertainty, ambiguity and paradoxical decisions do not help anyone. Research is a long game for long gain. We have a short-term emergency at the moment. We have the opportunity to restore, recover and build research back. We also risk—the Prime Minister used the term—discontinuity. We have an absolute risk of discontinuity in our pipeline of research, talent of treatments. So sustainability and a commitment through the hard times as well as the better times for all the players in the ecosystem have an integral part to play.

I would like to leave with one thing. The science and research leaders whom we have seen on our screens at the forefront of our response to the pandemic were all early-career researchers, scientists and medics some years back. If we want to have leaders like that tomorrow, we need to invest in early-career researchers, skilled technicians, medics and researchers of all persuasions now. That is one of the most troubling parts of the crisis we are currently facing. We need the leaders of tomorrow and we start today.

Q40 **Zarah Sultana:** Thank you for that. That takes me on to my last question, which is about early-career academics. We know that higher education is second only to hospitality as the most casualised sector of the economy. A large and growing proportion of university staff are lecturers and researchers on insecure and, quite often, very poorly paid temporary contracts. I have friends and family who, over five to 10 years, have been on multiple contracts. That makes it very difficult to plan your life. It causes mental health problems and anxiety. The system at the moment, of course, is also very reliant on international student fees, which was mentioned by Rebecca earlier. When you have shocks to the system like a pandemic, it is a system that cannot adapt very quickly. We have seen so many people being laid off, disproportionately women and people of colour.

Is the research teaching model sustainable as is this market-driven model that we have in higher education? Hilary first and then Hatén.

Hilary Reynolds: I will probably leave that more to Adrian and Hatén. Medical research charities funded some 7,000 early-career researchers and associated skilled technicians in 2019, but over half of our members



HOUSE OF COMMONS

are having to cancel future commitments. So there is a real risk of the pipeline not being there.

The other thing I would say is that a lot of early-career researchers who are funded by charities retain their long-term association with those condition charities. That is one of the ways that the casualisation can be mitigated for some of our researchers.

Sir Adrian Smith: It is a real issue. This really is the time when we look at career paths and sustainable careers. I agree that there is a terrific problem and it has been exacerbated by what has happened in the pandemic. It is an issue that needs to be addressed. Absolutely. I agree.

Q41 **Zarah Sultana:** Thank you. Finally, Hetan.

Hetan Shah: I would point to the National Academy's funding of early-career researchers. We provide these unique fellowships. The British Academy provides post-doctoral fellowships, which provide three years. That is the right model, which provides people with certainty and the ability to go away and reflect on what work they want to do. This is now a self-interested plea, but over the years we have seen the number of post-doctoral fellowships we can fund eroded over time because of flat cash settlements. If that is something we want to tackle, there is a mechanism in place that could be grown if that is what we wanted to do.

Chair: Thank you, Zarah. Carol Monaghan had a further question.

Q42 **Carol Monaghan:** The Greater Manchester Combined Authority has been in touch about the devolution of research and development funding. It says that funding decision making is confined to several departments, for example, UKRI and the research councils, and takes little account of place-based impacts. We have also had evidence from the Russell Group, BT and techUK talking about the opportunities post pandemic to get more devolution within the decision making of funding. Should the Government be considering more devolution with respect to research and development funding? I will go to Sir Adrian, first of all.

Sir Adrian Smith: It is an open question as to whether devolving funding is the right way to do it, but certainly there is an issue of how to stimulate more local and regional ecosystems.

Just going back to the previous arrangements with the EU, in addition to the Horizon programmes for research funding, there were regional and structural investment funds that could be combined with research funding. In the UK, Wales and the east midlands, for example, benefited very much from this. If we are to get that kind of regional growth and stimulation, we need some kind of mechanism that addresses the structural issues. What we don't want to get into is an "excellence versus place" debate. That would be counterproductive and we cannot just make it up and say, "It would be great to have this facility in place X." It depends on local capability and so on. A lot of work locally needs to be done to see what the landscape can offer, but there does need to be



some kind of funding stream that stimulates the structural and regional investments, separate from research funding.

Q43 **Carol Monaghan:** Hilary, I saw you nodding along. Is there anything additional that you would like to add to that?

Hilary Reynolds: I am very supportive of what Adrian is saying. It is not just funding but it is the entire structure and ecosystem to support it. I was just thinking that over half the funding from charity funding to medical research goes outside London and the south-east, and it can be a really strong part of the levelling-up agenda. You need to build on the strengths and grow strengths in place in other communities to enable the universities and research to flourish. It is a complex problem but absolutely one that we need to address as a country.

Q44 **Carol Monaghan:** As to this idea of growing strength, is there a requirement to be quite pointed in the way in which this is done? At the moment there is a danger that funds are given where we see excellence only. If that is the case, we fail to take advantage of opportunities that other areas may offer.

Hilary Reynolds: It is a constant battle. You have to grow strength and you have to grow new strength. That requires—this is what we have all been saying—a long-term sustainable commitment to growth across the whole ecosystem and a recognition that industry, academia, charities, public institutions and academies, can all play their part in a common agenda if there is a strategy and a plan.

Q45 **Carol Monaghan:** Do you feel we have that strategy at the moment?

Hilary Reynolds: Not yet.

Carol Monaghan: Thank you,

Q46 **Chair:** Thank you very much indeed, Carol. Thank you to all our witnesses. I have a final question to Sir Adrian. Going back to the Horizon association, in advance of the negotiations, or while the negotiations were going on, you wrote about models for funding that did not depend on association with Horizon. We now have association, and much of the science community wanted that. Is it your understanding that the terms are that we pay our way? We used to take more out than we put in, but we are now capped. Basically, we have to settle our bill each year. Is that your understanding?

Sir Adrian Smith: Yes. It would be good to have clarity on the profile of the cost of association over time. We could then begin to monitor that against success in competitive funding. My understanding is that they will take a three-year window and average out what we put in and what we get out.

Since you referred to the document that I produced, there was a bit of it that was independent of the association and lacking in the landscape at the moment. It really is required if we are going to have a coherent



international strategy. That agile funding will enable us to take opportunities bilaterally and multilaterally as they come along. We do not have much agility in the funding system at the moment. That is something also to keep on the agenda.

Q47 **Chair:** Thank you. I am grateful for that. Given the terms of our association with Horizon—in essence, it comes from the science budget and we get back what we put in—is the net conclusion of this that we, essentially, have transferred a budget that was at our own discretion in that UKRI could have allocated it, including for international work, and for that same sum of money we have put in a mechanism in which we have less influence? On balance, with hindsight, was this the best deal for us?

Sir Adrian Smith: There was a strong feeling in the research communities that the intangibles, the networking, the international connectivities, made up for the downside that you have just referred to. It would be interesting to see perhaps in five years' time, on reflection, whether people still felt the same.

Chair: We will put in the diary a session of the Committee in five years' time for that purpose. I thank our witnesses this morning. We have had a good examination of where we are on research funding and begun to open the questions as to the future [*Inaudible*] of clarity to be addressed. A theme of this session has been that in the context of a rising budget there should be a dividend from that, which is certainty and dependability, which is particularly useful and, indeed, important for research. It would be, to coin a phrase, paradoxical not to avail ourselves of that dividend and to have short-term decision making. There are particular points on medical research charities on which the evidence of Hilary Reynolds has been very compelling, which we will follow up, I am sure, with the Government. I thank our three witnesses very much for that.

Examination of witnesses

Witnesses: Naomi Weir and Verity Davidge.

Q48 **Chair:** We will move on to our second panel of witnesses. I am delighted to welcome Naomi Weir, head of innovation policy at the Confederation of British Industry, and Verity Davidge, director of policy at Make UK, the Manufacturers Organisation, formerly known as the Engineering Employers Federation. Welcome to you both and thanks for giving evidence to us today.

Perhaps I can start with a general question. Research and development and innovation is what we have been talking about and what this inquiry is about. How has research and development fared during the pandemic? Are there particular sectors that have increased their investment and that have done well during the pandemic, and are there others that have suffered? I will direct that opening question first to Naomi.



HOUSE OF COMMONS

Naomi Weir: Thank you for inviting me to give evidence this morning. The overarching response to that has been a mixed picture as the pandemic has broadly seen its effects fare very differently across sectors, depending on both their ability to open and the demand side of things. That is probably the first context for all of this.

Specifically, we have seen innovation in its broadest sense really accelerate as a result of the pandemic. If we think about the appetite and appreciation for innovation within business but also within the public, in the crisis we have seen innovation in action like never before. The tangible benefits of science and innovation have been centre stage in society and in life like never before. I am not sure previous chief scientific advisers would have been pub quiz answers in the past.

We have seen that also in businesses not just at the high-end R&D but in the adoption of existing innovation in order to support survival. The rapid shift to cloud technologies, the adoption of tools for remote working, more online sales, the sheer scale of transformation and innovation in business that we have seen right across sectors would have been completely unimaginable at the start of 2020. Businesses have demonstrated that they can adapt and transform.

Before the crisis, a lack of appetite for innovation and digital adoption held many businesses back. You will know the long tail of productivity and challenges related to appetite for adoption and ability to adopt technology that we already have. Many businesses recognised that in the middle of widespread disruption standing still was not an option. I have some quotes from businesses we have spoken to over the year: "Covid has meant that business cases for innovation spending that were not accepted last year have now been signed off." "Benefits of this transformation have become very tangible." "We are light years ahead of where we were." "People are much better at adapting to change. If you were going to introduce a new system it would not have gone down well previously, but now there is appetite."

There is a sense in which there is real innovation, but the innovation investment is really a battle of urgent versus important. As this Committee looks at what has happened recently in light of what will come ahead in the recovery, we have seen from businesses that as innovation—whether that is R&D in the sense of the Ventilator Challenge or switching and pivoting to PPE, or thinking about how we can use products and services in new ways for customers—moves from urgent for business-critical conditions into important, the challenge is to see continuation in that positive trend. Looking at the wider business investment environment, it is really challenging, and that is the context of business innovation now.

Q49 **Chair:** Thank you, Naomi. You have given a picture of accelerated interest in innovation. Are you able to discern whether any particular sectors are leading that and others that are perhaps not participating in



it, or is it a general scene across your membership?

Naomi Weir: Thinking very broadly across membership, particularly in the digital adoption, that is relatively sector ambiguous. Particularly thinking about sectors that were lagging behind, they have had to change. Inertia has been challenged. Thinking about particular businesses rather than sectors, those that already had plans or some form of digital adoption strategies or innovation strategies were able to implement and accelerate those much better, whereas those who were already lagging behind had to run to catch up. The digital divide between businesses rather than across sectors, although there are some sectoral aspects to that, is probably one of the bigger factors particularly around digital adoption.

Q50 **Chair:** Thank you very much. We have some other questions and colleagues want to come in. Let me put the same initial question to Verity Davidge. Are your members investing more? Are they accelerating investment in innovation and R&D? If so, is it possible to discern particular types of sectors where that is happening and are other ones not participating in it?

Verity Davidge: I would start by saying that the UK plays host to a large cohort of manufacturers that are great technology adopters and world leaders in innovation. Within that, we also have some small businesses that fit in that space. We also have a number of SMEs that are still not adopting new technologies and are not as focused on innovation at the speed and level that we would like to see, even though they acknowledge the benefits of doing so. The pandemic has impacted on those.

For example, I spoke to a group of manufacturers in the north-east recently. We talked about how we can invest in energy efficiency improvements and move towards a net zero target, and the role of innovation and digital adoption in this. One small business very honestly said to me, "Look, Verity, this is all great, but at the moment I am trying to keep my business afloat. I am trying to keep my staff employed, so I can't be thinking about things like investing in digital and green technologies. It is just not at the forefront of my plans right now." There is a real concern for us that the pandemic has probably put a big barrier—an additional barrier—in the way for many businesses to increase their investment in R&D and to adopt new digital and green technologies.

That said, overall, manufacturers are pressing ahead on their digital journey. We think that that is almost the silver lining from the pandemic. A far larger number of companies are in the revolution phase compared to two years ago, when they were more likely to be in the preconception phase when it comes to the adoption of digital technology. The reason they cite that move has been around the pandemic.

The positive, again, before I move on to the winners and losers, is that those companies that have made those investments have been found to be more resilient and weathered the storm better throughout the



pandemic, as well as reaping the wider benefits of improved productivity and reduced cost.

Q51 **Chair:** On winners and losers and leaders and laggards, just give us a thumbnail sketch of that in a few seconds.

Verity Davidge: On winners and losers, we see a size variation. Large companies tended to be slightly more of the winners because they are more likely to have invested and not made cuts. We have seen some regional variation. If you look at the technology adoption angle, for example, we tend to find that more companies in the north-west, where the Made Smarter pilot has been rolled out, are more likely to have kept that digital adoption aspect.

In terms of the sectors around innovation and technology, it has changed across the pandemic. If we think about this time last year and the start of the VentilatorChallenge, a number of aerospace companies were heavily involved. Fast forward six months, the VentilatorChallenge is over, travel restrictions are in place, and suddenly you see a lapse in demand and companies having to think they might have to take cuts. A bit like Naomi said, it is a bit ambiguous, but, overall, half of our members say they have reduced R&D spend due to the pandemic.

Chair: Let me go on to Aaron Bell. We have lots of questions that colleagues want to ask. If we could keep answers as short as possible, we will be able to get through as many questions as we can.

Q52 **Aaron Bell:** Thank you both for your evidence today, ladies. Just following on from what the Chair said, it seems that adoption has been key, but I am very concerned about the impact on longer-term research and development by companies. In your written evidence, Ms Weir, the CBI explained that the experience of the 2008 and 2010 recession suggested that businesses' willingness to invest in innovation could be significantly impacted and the proportion of firms that were active in innovation fell 58%. This economic crisis is obviously a very different kind of crisis from the financial crisis. Would you expect to see the same in the longer term, or do you think the nature of this crisis actually might have a silver lining, which we heard from the previous panel?

Naomi Weir: We did some survey work with our members towards the end of last year to try to gauge that. We found that 28% of firms intend to decrease their investments in R&D as a consequence of the economic turmoil from Covid; 38% said no change to investment; and only 16% said they were increasing. It is different across businesses. It was not a representative amount in being able to give the sectoral split, but it does show that, overall, we can expect business investment in R&D to reduce as a result of Covid certainly in the coming years.

As you say, the learnings from the last crisis show the benefit, as Verity has already said, of resilience at a firm and sector level of investment in innovation. There are real questions about the urgency of these plans to



HOUSE OF COMMONS

support business innovation from a policy perspective to make sure that we can mitigate against the challenges facing businesses of investing their own funds. Those incentives and support to do that have a timeline urgency from a policy perspective.

Q53 Aaron Bell: Thank you. Ms Davidge, on the same point, you said, and Ms Weir just referred to it, that firms that have adopted and invested have managed to weather it better, but the smaller firms—and I have heard this from firms in my own constituency—are just concentrating on keeping people employed and keeping their heads above water. However, if they had invested more in the past, perhaps they would be in a better position right now. How are you encouraging your members to take the longer-term view when they have such a short-term crisis on their hands?

Verity Davidge: To take a longer-term view, they will want to see a long-term strategy from Government first and foremost. I do not think that will come to any of us as a surprise. Over the last decade, between 2010 and 2020, the investment intention balance from our quarterly surveys has been negative only nine times. Eight of those instances have been since 2016, which is obviously when the referendum hit. When we are talking about our economic recovery, we are talking about a global pandemic but also the fact that four months ago businesses were introduced to a whole new load of rules from the trade and co-operation agreement. Sometimes we cannot split those challenges.

That said, we have just begun to see a little bit of an uptick on investment intentions, particularly around digital and green technologies. You need to translate those intentions into actions, but I think some Government policy levers at the moment have a potential to work.

The recently announced “super-deduction” in the Budget has meant that a quarter of manufacturers say that they will bring forward investment intentions and a further quarter will increase investment intentions, which is quite significant given that it is only a two-year model. The remainder say it does not work for their business most likely because their own investment plans are too rigid, which is back to that longer-term strategy. The super-deduction model is fantastic, but it is for only 24 months and it has already kicked off. If you are not a business already thinking about that, by the time you engage you risk not being able to utilise it. To drive business confidence, we need more longer-term policies that will keep that investment intention going.

Q54 Aaron Bell: Thank you. You have anticipated a lot of my next question with your answer. I have seen those figures as well showing business confidence picking up, which is a combination of the post-Brexit difficulties settling down and trade returning to normal with Europe, and the vaccine success.

You mentioned some of the things from the Budget that your members have welcomed. How would you say Government support for innovation



HOUSE OF COMMONS

and R&D throughout the pandemic has functioned? Has that been successful and what lessons are there to apply to a post-pandemic recovery?

Verity Davidge: The announcement to consult on the R&D tax relief system at the Budget was really welcome. It would have been great if it had come earlier because, as we know, consultation processes take a long time, and industry and business know what they want. Interestingly—and I am sure we will come on to this later—in terms of the Government funding and initiatives that are in place, the R&D tax relief system is the one most used by manufacturers. It is 80%.

What we want to see now, and what we are very keen for the consultation to lead to, is an extension of the scheme to allow for capital expenditure to be within the qualifying expenditure, because that is a large bulk of what is spent, and also a simplification of the system. For a small business, it is always simplification. I completely appreciate that access to funding needs to have rules, restrictions and processes in place, but small businesses right now are calling out for simplicity when they need support from Government.

Q55 **Aaron Bell:** Thank you, Ms Davidge. That is a very fair point. In terms of trying to level up across the country, which is the other main plank of the Government's agenda, simplicity for smaller businesses would be welcome.

Ms Weir, do you have any comments about Government support during the pandemic, what has been announced in the Budget and how you see the next couple of years ahead?

Naomi Weir: The overarching picture that we talked about at the beginning around support for businesses still struggling to trade their way out of the crisis continues to be important. Obviously, that has knock-on effects for innovation. Thinking specifically about this, I echo Verity's points around super-deduction. The two years is useful. Some businesses we have spoken to are bringing forward investment, so it is helpful for sparking that, but it is not a solution longer term and it is not changing investment intentions overall. Similarly on the tax credit.

There is an important point, which I am sure we will come to and I know was discussed in the earlier panel, about longer-term R&D funding levels and strategy. I am happy to discuss that in more detail. A lot of things come from that.

On lessons from the pandemic in terms of innovation support specifically, we definitely saw businesses appreciating the agility shown from some of the funding mechanisms. Innovate UK changed some of how it did its funding, changing things around even when the money is released on a monthly rather than a quarterly in arrears basis.

Those kinds of changes and listening to what business needs have been really helpful. There is definitely potential to learn from that for



peacetime innovation funding in truncating processes and being quicker to release funds, making things simpler and easier to navigate. It would be useful in a more co-ordinated way perhaps for UKRI and BEIS, in particular, to look at what lessons can be learnt from how innovation funding was done in a task and finish way, to build that into the innovation strategy being developed at the moment.

Aaron Bell: Brilliant. Thank you both very much.

Q56 **Mark Logan:** Thank you very much, Chair, and good morning to both Naomi and Verity. My questions overlap slightly with some that my colleague, Aaron, has just asked. What role do you believe that business and innovation in the communities can actually play in supporting the UK's economic recovery from Covid-19? I will go to Naomi first, please.

Naomi Weir: Brilliant, thank you. As we have heard, in the UK and globally, we are facing shocks on all fronts. We have a new trading relationship with the world and the EU; we have net zero challenges; we have an accelerating pace of technological change; and we have recovery from Covid. Innovation has something critical to contribute in all of that, as does business. This is a defining moment, and how we react will be really important.

For our part, CBI is developing an economic vision for how the UK can be the most competitive, dynamic and future-focused economy in the world. Innovation will be central to achieving those aims.

In the potential to look at the challenges facing the economy and society, it is impossible to remove innovation from the answer to those. Businesses in their own spaces are looking at how to solve that. Whether that is addressing challenges facing their customers or those facing their end users, we have seen so many examples in the crisis and through it of the role of innovation in recovery.

There is also the overarching point around investment in R&D at a macro level as a driver for productivity and job growth. We know that a large amount of productivity growth comes from innovation. We also know that so many jobs of the future will be in innovation-focused roles. Making sure that we can benefit from that in the UK will be critical as we recover.

Q57 **Mark Logan:** On that point, Naomi, from your organisation and also your members' point of view, how well does the Government's plan for growth come across in supporting the involvement of business?

Naomi Weir: Thank you. I think Verity will perhaps echo this. There is initial concern at the chopping and changing of the overarching strategy for industrial support, whether that is industrial strategy into planning for growth. We are pleased to see that there is a plan for growth and the centrality of innovation within that. It still remains to be seen as we look ahead both in terms of the strategy and the funding associated with that for delivering what business needs. We are working closely with BEIS as part of that innovation strategy, but also with Treasury and other parts of



HOUSE OF COMMONS

Government, to ensure that the plan for growth really meets the needs of businesses. There are still quite a few unanswered questions, thinking about how sector deals or other things that have been in progress that businesses have bought into and invested in will be built on or translated into the new support.

Chair: Naomi, we lost you for a brief but critical moment there. Just recap if you would not mind.

Naomi Weir: Part of that was thinking about the fact that there are lots of questions still to be answered. One of those, for example, is that businesses have bought into the previous plans around sector deals, and there are still questions to be answered about how those will be handled in the future plan for growth.

Q58 **Mark Logan:** Thank you. Verity, please.

Verity Davidge: I will almost go backwards on your questions and pick up on the plan for growth. Of course, as a manufacturing industry, we were disappointed that the industrial strategy went away, if you will, for want of a better term. We are pleased that we have the plan for growth and that some of the elements in the framework from the industrial strategy have been included. That said, we could probably be a bit more ambitious and make sure that it is not just ideas—it is all about implementation as well.

In any case, just like yourselves, Make UK will be holding Government to account to make sure that the plan for growth delivers in the same way that we would have expected an industrial strategy to.

As to the role of business in research and innovation for the recovery, it is building on all the fantastic processes, services and changes to business models that we saw during the pandemic. As a manufacturing sector and as manufacturers, we almost saw our sector move into the limelight during the pandemic. We saw companies involved in the VentilatorChallenge. We saw companies repurposing production lines to support the national efforts to produce PPE. As a sector, we were able to remain open because Government understood the important role that manufacturing plays.

The next step for us in recovery is building on all of that fantastic innovation and how we then move it towards our net zero agenda, for example, building greater links between digitalisation and decarbonisation. For us, the two go hand in hand. Technology, data capture and analysis, for example, through smart metering is just one of the methods that manufacturers can use to reduce their carbon footprint. For me, the opportunities now and for our recovery are how we then move on to meet those net zero ambitions. There are a lot of growth opportunities for sectors such as manufacturing that can provide the solutions there.

Q59 **Mark Logan:** Verity and Naomi, on that point around the industrial



strategy, what parts of our economy and which sectors could benefit most from having an industrial strategy and from having the full force of Government behind long-term planning? I am thinking in terms of what our current comparative advantages are, but also where you think we are relatively quite weak at the moment, and perhaps where industrial strategy could help.

Verity Davidge: In the manufacturing subsectors, we are seeing quite a difference in where demand has now fallen and where there are winners, if you will, just thinking about the pandemic purely. We have seen huge collapses in demand in the aerospace and automotive sectors. Meanwhile, food and drink production and pharmaceuticals are picking up. All those sectors that you may have traditionally associated with manufacturing are the ones that probably now need most of that support. A fully fledged industrial strategy would have made sure that those sectors felt like they had that long-term support and strategy from Government.

Q60 **Mark Logan:** Thank you. Lastly, the same question to Naomi.

Naomi Weir: As part of our vision work at the CBI, we have been looking at where some of those opportunities lie. To answer your question, some of these will need strategic direction from Government under whatever guise it is called. For example, there are real opportunities based on the UK's strength in fintech. If the UK can close half the competitive gap with the US, this would add £36 billion in revenues by 2030. Take genomics. The UK is currently just 3% of UK pharma, but it could be worth an extra £16 billion by 2030 if we become as good at commercialising in that space as our peers. If you look at adoption, as we have already said, if we move from a quarter to a half of SMEs fully adopting readily available tech, this would add £45 billion to the UK GVA. There are lots of opportunities, some of them in specific sectors.

I know our start-up and scale-up area is another area where we are really leading. We are a really strong tech economy, but there is real potential to grow as well and a growing market share to capture. This is more a technology than a sector, but AI is an area where we have real strength and real potential for growth. There is potential for cost savings, for example, in manufacturing or revenue growth in manufacturing and sales, and that is right across sectors. Each of those areas, if given some strategic direction, will help businesses to invest alongside and really capture that growth as we recover.

Mark Logan: Thank you both very much.

Q61 **Rebecca Long Bailey:** Thank you both for coming today. It is really interesting to hear from you both. I wanted first to look at how public procurement can be used as a lever to drive private R&D and innovation. Starting first with Naomi, I know that the CBI has stated previously that public procurement can stimulate demand for new technologies but that it was underutilised, sadly. Do the Government need to prioritise the



extension of procurement to support innovation specifically? In addition, do we need to focus this by specifying the end result desired by Government—the mission, if you like?

Naomi Weir: Yes, we certainly agree with the assessment that public procurement too often reduces rather than increases the incentive for suppliers to innovate, but it is also a really powerful tool. For businesses, a customer's money is always the best money rather than any other form of investment. Looking to see how we can use the Government's enormous buying power to support innovation is an enormous lever in the Government's arsenal and will need to be used. We have seen that through the pandemic, but thinking about how we can use that well for innovation will be really important. Unfortunately, research we have done with businesses has shown that only 5% of businesses felt that public procurement currently incentivises innovation. So there is a real issue to address.

There is an issue around focus on short-term costs and processes being overly bureaucratic. There are opportunities from the Green Paper. Processes to streamline public procurement processes and boost dialogue and engagement can help foster more innovation. It has really been good to see a focus on the role that the private sector can play in delivering social value and innovation. I am particularly pleased to see innovation included within the national procurement policy statement.

Moving away from most economically advantageous tender to the most advantageous tender, thinking about value rather than just cost is really important and positive, as well as streamlining regulations and procedures and using a focus on flexible procurement.

There are continuing concerns around ensuring effective application of new rules and continuing progress on improving commercial capability and capacity in applying these rules. That is where there is real potential to deliver the promise of some of these new changes. I will probably pause there.

Q62 **Rebecca Long Bailey:** Thanks, Naomi. That is brilliant. Verity, do you agree? Do you think we need to extend public procurement, and do we need to specify the end result desired by Government to focus those innovations?

Verity Davidge: Yes, I agree with a number of Naomi's points, so I won't repeat them. One other stat that probably seems to chime with what Naomi said is that over 90% of manufacturers disagree that it is easy to win procurement opportunities within their region. That impacts the Government's levelling-up agenda as well.

The recent procurement Green Paper, for us, ensures that measures such as meeting net zero, levelling up and supporting skills are also woven into all of that. In terms of that outcomes-based approach, do they all lead to



ticking all of those boxes as well? That is the only thing I would add to Naomi's comments.

Q63 **Rebecca Long Bailey:** Thanks, Verity. Moving on to the myriad tax reliefs that we do not have enough time to go through today, very briefly, both the Institute for Innovation and Public Purpose and the IPPR have been quite critical about the effectiveness of blanket tax reliefs in research and development and innovation. They suggested a more direct, funding-led strategy. What are your views on this? Does the current tax relief system work? How effectively can businesses use that to access the R&D funding that they need?

Verity Davidge: In terms of the myriad funding streams and incentives available to businesses in innovation support, the R&D tax credit scheme is the one most commonly used. To give you an example, 80% of our members regularly use the R&D tax relief scheme, yet 77% had never heard of the industrial strategy challenge fund. Businesses, and in particular small businesses, tend to want more of that tax-cutting approach. Anything tagged a grant or a fund is often associated with quite a long and complex tendering or bid process that does not always guarantee an outcome. For manufacturers, the preference has always been around the R&D tax relief scheme. It is still not perfect. It is embedded, and that is why a lot of businesses use it.

As I mentioned earlier, we would like to see it extended to include capital expenditure—that has gathered quite a lot of support from a range of stakeholders—and also for the system to be simplified. There are a lot of very positive agents that support companies in the space to help them access R&D tax reliefs, but that obviously comes at a premium. At a time when businesses are very cash-strapped, we want to simplify the system as much as possible. We definitely see it as a huge positive, a real benefit, and something that has become embedded and that companies are familiar with. We think we should build on what works rather than introduce new schemes that we have not tested whether they work or not.

Q64 **Rebecca Long Bailey:** Naomi, what are your views?

Naomi Weir: I very much echo Verity's comments. On your point about it being non-targeted, that is one of its strengths. It plays an important role within the policy mix. As a non-targeted policy instrument, it can encourage R&D investment across a whole spectrum of firms, so it really is valuable in that sense.

There is also the international picture to keep in mind. If other countries are offering incentives, we cannot afford not to. As businesses look internationally for where to start up, to locate activity, to grow activity, they often take a scorecard approach. The overall tax rate is one of those. As changes come in overall tax rates, thinking about the R&D tax incentive is a really important part of that mix for capturing globally mobile R&D investment.



On a global competitiveness point, simplicity and consistency is key, but also how it is operated. An increasingly aggressive approach towards claims has resulted in increased compliance burdens and complexity, and that is a concern around the offer. I would echo Verity's points around the expansion of scope, particularly thinking about how R&D is done now, things around including data or cloud activity within the costs of R&D, and making sure that the definitions of R&D keep up with how businesses are innovating is important. We would also echo that capital expenditure point.

Q65 Rebecca Long Bailey: One of the conundrums that I have struggled with is a statistic provided by the Institute for Public Policy Research a while ago where they stated that a small number of large corporations reap 95% of the Patent Box and 80% of R&D tax credits. Is this a question of how aware businesses are of the initiatives that are currently available, or is it the efficacy compared to the size of the business applying for them?

Naomi Weir: I do not have those specific facts, so it is difficult to respond directly. I think this alludes to perhaps the make-up of R&D investment within the UK. A large chunk of investment is concentrated in a small number of businesses. There are many businesses that invest in R&D, but looking at volume it is quite highly concentrated. Part of that is to do with our sector mix but also our business mix here in the UK. A large part of the innovation strategy and looking at the Government's target to increase investment to 2.4%, and to grow investment, has to be to get more businesses innovating, not just those existing ones spending more.

Measures to increase the number of businesses that can grow their R&D but also start investing has to be part of that mix longer term if we genuinely want to grow the UK as a science superpower and as a place where it is a great place to invest in R&D. Some of that will be attracting investment from overseas, but some will be thinking about getting more businesses involved in that. Part of that is probably to do with our R&D mix across the country rather than it being exclusive in terms of the mechanism.

Q66 Rebecca Long Bailey: Thanks, Naomi. Verity, is it a question of how aware businesses are of the available initiatives or is it the efficacy and that such initiatives do not work for certain businesses?

Verity Davidge: I think it is a little bit of both. As a manufacturing sector, we are responsible for 65% of R&D investment. We are big players in this game, if you will. There is an awareness piece, definitely, and awareness always tends to be around the new initiatives and schemes. This is not isolated to innovation support. This is the same for any kind of skills education training support. Awareness is always problematic.



HOUSE OF COMMONS

There is the accessibility point that I referred to. For a lot of businesses, something that cuts their tax bill is a lot more palatable than something that requires a grant from someone else of whom they are unaware. There are great players and stakeholders in the innovation scene, but it also makes it very complicated. It is extremely challenging for a small business to know who to go to for what, which is why I think we see a lot of them default into things like an R&D tax credit. The other thing that I always get asked from our members is about increases to the annual investment allowances, things that they can almost do themselves that do not require having to enter into what is a very supportive but indeed very complex landscape.

Q67 **Rebecca Long Bailey:** Thanks, Verity. Naomi, did you have your hand up to respond?

Naomi Weir: On that point around navigation, in the report we did last year, when asked to name one thing that would have the biggest impact on their ability to innovate in the next 12 months, 12% of large companies and 10% of SMEs said being able to better understand and navigate the existing offer was the one thing, and that included things around additional funding. The one thing they chose for 11% of businesses on average was better navigating the system. Constant chopping and changing the system increases complexity. That navigation point is really important.

Q68 **Rebecca Long Bailey:** Thank you. I have one very final and brief question on the super-deduction. Verity, you have mentioned the super-deduction already in the short window that it is open for. As we know, most businesses set out long, patient research and development strategies rather than a short-term spurt every now and again. Realistically, how much do you think the potentially huge amount of tax that will be saved by some companies under the super-deduction will actually be transferred into innovation and R&D?

Verity Davidge: As I mentioned earlier, we have asked members this question, and a quarter said they will bring forward their plans, a quarter said they will increase their plans, and the remainder mostly say their investment plans are too rigid. Like you said, they are long-term plans particularly around R&D and innovation. They do not tend to be things we can quickly tweak in order to take advantage of a two-year model. I think we will see exactly what you say—a short spike in investment but potentially then a huge dip, because all those companies are going to bring forward those investments and then probably think, “Okay, no more cash, no more investment. I am going to take a pause.”

It is great that we have this initiative. Could more of a longer-term strategy of keeping the investment allowances higher for longer have been more beneficial? Probably. It goes back to this long-term investment long-term strategy. I think we will see a spike, and I think that is great. Our slight concern is if that is followed by quite a significant dip.



Q69 **Rebecca Long Bailey:** Naomi, what are your thoughts on this?

Naomi Weir: I echo Verity's characterisation of that. If it is a two-year window of bringing forward existing investment, we now have an opportunity in the UK, with a spending review coming up later this year, with an innovation strategy and a plan for growth. As those get articulated, we need to make an exceptionally strong case for investing in the UK so that they are not short term, one-off measures. We need to make sure that we actually get to £22 billion by 2024-25 and have a real concrete plan for how we will do that so businesses can invest alongside. We need an innovation strategy setting out the sectors and technologies that we are going to invest in and prioritise, so that businesses can invest alongside and make those five to 10-year plans, to avoid the start-stop nature of investment and offer to businesses.

Rebecca Long Bailey: Thanks, both. That is really helpful.

Chair: Finally, Zarah Sultana.

Q70 **Zarah Sultana:** First, I want to say how great it is to have an all-women panel—just to put that out there.

My question is around R&D and how it is concentrated. Naomi, you made reference to how it is concentrated within a small number of firms. We know that, regionally, 41% is spent in the golden triangle between Oxford, Cambridge and London. What are the benefits and drawbacks of local and regional strategies for R&D and innovation in business? Do you also think there is enough understanding of local and regional strengths and weaknesses?

Naomi Weir: I was listening in to the last panel. We were talking lots about small pots here and there. If we are genuinely going to be a science superpower and use that to level up the UK, we need to stop tinkering at the margins and really go for it. We need a long-term and ambitious overarching strategy, with a genuine plan that delivers on these targets. We have a destination, but we really need the actual concrete plan and fuel to get there. The spending review and the upcoming innovation strategy have to deliver on that, including for regions.

This question about levelling up is hugely important, and innovation has a big role to play, but without that overall level of investment going up it always comes back to tinkering at the edges, which will not deliver the transformation that we need to see particularly around levelling up.

Thinking about how we might do that, the clusters approach has real benefits. There is extraordinary innovation and research strength right across the UK already. Universities are an extraordinary regional policy in many ways. You have real expertise and investment rooted right across the country, but, as you say, it is uneven.



HOUSE OF COMMONS

If you look at where business investment is—and Verity can possibly speak to this as well—particularly more at the development end of the spectrum, it is much more concentrated in areas not traditionally seen as high research spending. If you look more at the development end of the spectrum, there is a real business investment that is not matched by public investment. Arguably, that is because public investment is highly skewed towards the earlier end of the spectrum. In the UK, we have a large amount in our applied research territory, but if you look at the balance of investment it is not there in the experimental development. A shift in our overall profile of spend and support from a public perspective towards the later more development end of the spectrum would match business investment in parts of the country where we want to see greater investment.

There is also real potential to build on a clusters approach. The CBI has put forward a proposal around Catapult Quarters. It is about looking at existing strengths and building on them with co-ordinated support. That needs to be done at a national Government level that enables regional or devolved nation Governments to recognise a strategy, invest alongside and do things designed in a way that they know builds on their local strengths. Without that overarching strategy, you will end up with a lot of duplication. We are relatively geographically small and that can be a real strength as we look to level up innovation.

Q71 **Zarah Sultana:** Thank you, Naomi. Verity?

Verity Davidge: We hosted a range of regional workshops to explore innovation and digital adoption, and the majority of manufacturers felt that a regional approach with a lead partner co-ordinating activity and funding was the best way to proceed. We know that there are a lot of stakeholders active in this space and it is important that all of them feel engaged and consulted as each programme is developed and implemented. We see almost a case for some formal regional board to be established involving all those relevant stakeholders to oversee and co-ordinate delivery and agree the work programme by that lead delivery partner.

We think this could be built on a similar model to Made Smarter that we have seen in the north-west with digital adoption. It has been hugely successful. We are really pleased to see that it has been rolled out in three regions. We would also like to see it rolled out across the whole country. This is how we are going to meet that levelling-up agenda. We see there is widespread enthusiasm and commitment to increase the pace and scope of these national efforts to really promote the adoption of technology and be that world leader in innovation.

Q72 **Zarah Sultana:** Thank you, Verity. On the question of regional boards, we have entities like LEPs that operate regionally. Do they need to be given more power, or would the creation of new boards be most effective?



Verity Davidge: We do not want to duplicate efforts. If there is an obvious delivery partner that can co-ordinate that activity, that should be the nominated lead delivery partner. If there is an area where the LEP or other body is a little bit weaker and perhaps does not have that strong business engagement—we know that there is quite a variation across business engagement with LEPs—that is potentially something new. I am always quite resistant in adding a new board, if you will, when we know we already have those stakeholders. It is someone to convene them and everyone knowing that that is the delivery partner and that is the funding stream. Making sure we have that business engagement and a really simple model can be really effective.

Q73 **Zarah Sultana:** Both of you have touched on that regional approach. I am an MP in the west midlands. We have the West Midlands Combined Authority. What role would it play in this approach?

Naomi Weir: The West Midlands Combined Authority has been a vocal supporter of, for example, the automotive sector deal and its impact on the west midlands. For the past few years we have had an approach around local industrial strategies and science and innovation audits. There is an urgent question of how that expertise, that body of work and that bringing together of businesses and other stakeholders will be built into the plan for growth and the Government's approach for levelling up. That is certainly a question that needs to be asked.

There is a real diversity in terms of places across the UK and the capacity at the moment they have to deliver this kind of work. As you know, some areas have very strong combined authorities with good track records in this space. Some are just having some new structures. Others might need more support. As part of this, making sure that local and regional areas have the appropriate tools and capabilities to deliver this involves a scaling up and support so that they can make those decisions and implement strategies locally and regionally. Combined authorities have, for example, much more scope to do that in quite a few places across the country.

Q74 **Zarah Sultana:** Verity, do you want to come in on that?

Verity Davidge: Just to add to Naomi's comments, they definitely have a role. If we look to the West Midlands Combined Authority, they are having a really influential role in the roll-out of Made Smarter. They were very strong advocates for the adoption of Made Smarter in the west midlands and they have been successful. That is one of the regions in which it will apply. For me, they play a really key role and are almost that perfect convener, bringing together the right players, including industry. I have referenced the fact of the challenges for SMEs in navigating quite a complex system. Having combined authorities and mayors that they can go to as almost a one-stop shop is a really good move and a positive one.

Q75 **Zarah Sultana:** Thank you. We often talk about R&D together. Should we have the same approach towards funding research and funding



development activities in local areas and regions, or should there be different approaches to both of those?

Naomi Weir: That is an interesting question. I do not think we currently have the same approach to funding R&D. We obviously bucket them together, but there is a real profile within that of what investment looks like. We do not fund university basic research in the same way we fund innovation, even within UKRI, or whether we are looking at contracts. There is quite a lot of difference in how we fund that already. There is a lot of benefit to having some of that funding at a real national level, but making sure that the strategy is sustainable and long term means that local areas can then build their strategies alongside so that they complement rather than duplicate what is happening at a national level.

When you get to development, it is really engaging with businesses and giving local areas enough flex to think about how they can support that within their local area. They know their industry mix. They know some of the big anchor institutions. Making sure that areas have enough flexibility to exercise the knowledge and understanding they have of what works in their area would be really important.

Q76 **Zarah Sultana:** Verity?

Verity Davidge: I think Naomi has articulated that perfectly so I would be saying stuff for the sake of saying it. I completely agree. There is that research element. When it goes to the development element, that is when you see that wider area engagement with others. I would steer clear of not complicating it any more by breaking things down and down. There is definitely that need to ensure that local economies are also driving this agenda, and that has been very much the core narrative of the work we have undertaken on rebalancing local authorities by really backing manufacturing and supporting it as a high-growth sector.

Q77 **Zarah Sultana:** My final question is on universities. I have two in my constituency, both Warwick and Coventry University. Both of you have touched on the role that they can play in these regional strategies. What more can the Government do to use that expertise, investment and policy agenda, and what can universities be doing as well to support this?

Verity Davidge: Many of our manufacturing businesses have great things to say about their local universities. They tend to keep to local universities, whether it is engaging with them through a knowledge transfer partnership—that model works very well for many manufacturers; they adopt it, and we would probably want to see more of it—or whether it is recruiting a graduate or postgraduate. It always tends to be more in the local area. They do not tend to go national.

In terms of what universities can do more, they can try to reach out to SMEs. We know they are a hard target market. It is quite hard for us even as a manufacturers' organisation always to reach out to every SME. They are very busy. If I want feedback on a policy area, I know I might have to wait a while to try to get a date in their diary. That is where the



potential is and that is where we need more support. I think it falls more on the likes of Make UK as a manufacturing organisation to work more closely as well with universities to articulate what the needs of SMEs are, where they do not potentially have that time and resource both from the perspective of businesses but also universities to potentially bridge that gap. As I say, R&D and innovation is all about collaboration. We, even as a business organisation, have a role to play there.

Q78 Zarah Sultana: Thank you, Verity. Naomi?

Naomi Weir: Thank you. Innovation is a team game. We have seen that more than ever in the crisis. We have seen what we can do through collaboration with Government, business, universities, individual experts, research and technology organisations, catapults, critical infrastructure, all working together to deliver on innovation. Universities play a critical role in that. In the levelling-up agenda, universities are universities of a place. Their name is in their title. They play real roles as anchor institutions within regions. There are other bodies that do that as well.

To Verity's point, looking at how we can encourage collaboration through our levers and policy tools will be really important. We have a highly competitive research and development funding and institution environment in the UK. Some of that is helpful. Some of that is a barrier. Looking to make sure that we remove unhelpful competition from within and between our institutions and our regions would be really helpful: for example, things around restrictions that make it really difficult for a university, a catapult, a business and an SME to work together. There are financial disincentives around some of that. Let us look at what can be done to improve collaboration so that each of those organisations can play their part in that recovery.

Chair: Thank you very much indeed. Thank you, Zarah. Zarah's questions are a good curtain raiser to the next phase of our inquiry, because we are very conscious that science, innovation and technology, even in a world of meetings on Zoom, tends not to take place in the abstract but in particular places. The Committee will be taking evidence all across the country from, I hope, some of your members and some universities, colleges and other institutes over the months ahead.

Thank you very much indeed for your evidence today. It is good to hear that there is some reaction to the pandemic and the crisis that has galvanised support for innovation. We obviously want to make sure that there is the ability to take advantage of that in the future. We are very grateful for your evidence today. That concludes this session of the Committee.