HOUSE OF COMMONS

Treasury Committee

Oral evidence: Economic impact of coronavirus, HC 882

Wednesday 21 October 2020

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Watch the meeting

Members present: Mel Stride (Chair); Rushanara Ali; Mr Steve Baker; Harriett Baldwin; Anthony Browne; Felicity Buchan; Ms Angela Eagle; Julie Marson; Siobhain McDonagh; Alison Thewliss.

Questions 59 - 140

Witnesses

I: Professor David Miles CBE, Professor of Financial Economics, Imperial College London; Professor Gigi Foster, Director of Education, University of New South Wales, Australia; Tony Yates, Macroeconomic Policy Unit Research Associate, Resolution Foundation.

II: Dr Luke Munford, Lecturer in Health Economics, University of Manchester; Professor Philip McCann, Chair in Urban and Regional Economics, Sheffield University Management School; Dr Anna Valero, ESRC Innovation Fellow, London School of Economics.

Examination of witnesses

Witnesses: Professor David Miles, Professor Gigi Foster and Tony Yates.

Q59 **Chair:** Good afternoon, and welcome to the Treasury Select Committee inquiry session into the economic impact of coronavirus. Our first panel is going to be looking at the economics of lockdown and our second panel will look at regional impacts across the UK. I am delighted to be joined by an excellent panel of three for our first session. I am going to ask them to very briefly introduce themselves to the Committee, giving their name and organisation.

Professor Foster: My name is Gigi Foster and I am a professor in the School of Economics at the University of New South Wales.

Professor Miles: I am David Miles, professor of economics at Imperial College London.

Tony Yates: I am Tony Yates, an independent economist, but I have recently been doing some work for the Resolution Foundation and Fathom Consulting.

Q60 **Chair:** Welcome to each of our panellists, particularly Gigi, who is talking to us from Australia; it is very late in the day at her end, so that is particularly appreciated. The questions will come from members in sequence and will generally be directed specifically at one or more members of the panel. If you are not brought in on a particular discussion as a witness and would like to say something, do please raise your hand and I will endeavour to bring you in at that point.

One other point I should make, although it will probably not apply to the first panel, is that there is a strong possibility of a Division in the House of Commons this afternoon. We expect that at around 4.00 to 4.15. In the event that happens, I will simply suspend the Committee for 15 minutes if it is for one Division; if there are two, it could be for as long as 25 minutes. We will deal with that as and when it happens; it is just to alert our viewers and panellists to that as a possibility.

My first question is one that I would like to direct to Gigi and David. You have both carried out cost-benefit analysis of lockdowns, and I wondered if you could just tell us a bit about the approach that you took in each of your models and explain what they seem to tell us.

Professor Foster: For the Australian state of Victoria I prepared a draft partial accounting of the cost of lockdowns that could be compared with the potential benefits of lockdowns in relation to Covid. Essentially, I approached it as saying, "If we had one month of lockdowns, what costs would we expect there to be from those lockdowns?" I used what I thought were reasonable assumptions but were actually quite biased in favour of finding that lockdowns passed the cost-benefit test. In other words, they were saving lives on net. My analysis resulted in the conclusion that actually six weeks of lockdown, which is as long as the

second lockdown wave has been in Victoria, is three times more costly in terms of lives than it is saving. That was the basic conclusion and I have written it up in four pages for the Victorian Government.

Q61 **Chair:** What are the moving parts of your analysis? How do you go about coming to that conclusion? How does that work?

Professor Foster: You first need to nominate the various costs that are likely to eventuate from lockdowns. For that, you need to understand what is happening to people during lockdowns. One of the big things is a decline in mental health, which has been found. The UK has pretty good data on this. I am trying to capture that decline in a standard currency that can be compared to the number of lives or some currency that is potentially saved from a lockdown. That is the main task. That is one lockdown cost.

Other lockdown costs include the reduction in GDP and the longer-run impact of that in terms of reducing Government and private expenditure, both of which serve to promote human wellbeing, both now and in the future. Of course, some of that cost of the decline in GDP is due to lockdowns per se. Some of it is potentially due to responses of individuals who are fearful. There are then other costs as well: crowded-out healthcare, increased suicides, forgone wages, children whose schooling has been disrupted, et cetera.

Q62 **Chair:** That is interesting. It is quite a holistic approach to the benefits and costs. What is that common currency that you referred to?

Professor Foster: The currency I use is the QALY, the quality-adjusted life year. The reason it is appealing is that it back-translates to both dollars and something we call the WELBY, which is a reasonably new British invention and a better currency in which to estimate and tabulate the potential mental health costs than the QALY. The QALY is more traditionally used in the allocation of scarce resources and healthcare, for example, and the reason it can translate to dollar figures is that countries around the world, including the UK and Australia, in normal times will put a dollar figure on the potential QALYs that might be brought into the country via new drugs, new medical interventions, et cetera. That figure is somewhere around 50,000 to 100,000 Australian dollars. In the UK it is something like £30,000.

If we have that as a dollar figure that we are willing to pay for one more QALY, then you see how QALYs can translate to dollars. QALYs translate to WELBYs as well. The WELBY is essentially a one-unit change on a standard 0-to-10 scale of satisfaction, which is answered when the person is asked, "Overall, how satisfied are you with your life?" That is a standard currency which can be translated to QALYs, because when somebody in the UK responds to that question they typically will choose about an 8. The level of satisfaction on that scale at which people are generally indifferent between living and dying is around a 2. Eight minus two is six, so six WELBYs equalling one QALY is the conversion that I

have used. That is the appeal of using QALYs and also bringing in WELBYs and being able to talk about money as well, which is another way you can do the calculus.

Q63 **Chair:** It all sounds quite complicated, I suppose because it is, inevitably. Have you had any experience of taking members of the public through this approach and saying to them, "It suggests that we should have done this", or, "There was more of a disbenefit to doing that in this case"? If you have done that, does it pass that test? Do people sit there and say "Yes, actually that makes sense. The model is worth following", or do you just not know?

Professor Foster: I have presented the basic outlines of this to the Victorian Parliament at the Public Accounts and Estimates Committee; it went over reasonably well. The YouTube video of that has gone viral and there have been a lot of positive comments. I have also given dozens of public appearances at which I have referred to this concept of counting up the QALYs. It is something that people get behind, partly because we do it in normal times. We normally use QALYs to evaluate Government policy, and also because it is essentially capturing all human welfare and using that as the maximand, which makes more sense than just looking at human welfare that may be lost due to a particular disease. In this case Covid would be the obvious target.

I will also say that, for a variety of reasons not to do with scientific analysis of the problem, but much more to do with power, group loyalty signalling, fear and many other less noble motivations, some people are extremely reluctant to engage in this kind of an accounting. Sometimes it is really just because people do not want to face the fact that, if we are in a world of scarce resources, we must make trade-offs. There is no way to avoid that, and these trade-offs are inevitably in terms of money spent on things that will promote life. We have to think about putting a price on a life year, unfortunately, and we do it anyway in normal times, but this pandemic has brought to the surface the fact that it is useful to do that. That makes some people very uncomfortable.

Q64 **Chair:** David, can you talk us through the nuts and bolts of your cost-benefit analysis?

Professor Miles: This is a piece of analysis undertaken with a couple of medical experts and medical researchers. It is an analysis of a question where we recognise that there are absolutely no easy answers. There are formidably difficult trade-offs here. We tried to look at a particular episode—the lockdown in the UK starting in mid-March running into early June, so the three-month lockdown—and, without making a confident assumption about what would have happened in an alternative world, we considered many different possible scenarios, some of which where the health benefits and lives saved as a result of the lockdown were extremely large, as large as the largest possible estimates from any epidemiologists. Some of the scenarios were where the lives saved were significantly lower. We then looked at a narrow underestimate, probably,

of the negative side effects of extreme lockdown, both in terms of GDP and setting to one side some of the indirect but potentially very large future health costs of the lockdown itself. I hope and think we were careful not to overestimate the costs of the restricted lockdown, and at the same time not to underestimate the health benefits and the numbers of lives saved. That is why we had many different possible scenarios.

We followed a strategy in considering the trade-offs between the narrow definition of cost, which is GDP lost, and the most important benefit of the lockdown, which is lives saved, by also relying, as Professor Foster has just outlined, on values of QALYs, quality-adjusted life years. As was mentioned, the QALY rule used in the NHS in the UK—a rule established by NICE that has been in place in the UK for many years—is that medical treatments in the UK that on average are considered to save one quality-adjusted life year, a treatment that generates that kind of benefit, passes the test of, "Yes, we should spend resources on it if the resources are no more than £30,000".

Using that NICE £30,000 rule and various estimates of potential lives saved as a result of lockdown, some of which are very large and probably overestimates of lives saved, and estimates of possible scenarios for lost GDP, one then has a way of comparing the two numbers. It turns out that using that particular assessment—the QALY £30,000 number—it looks like a three-month lockdown was coming at an extremely high price relative to the health benefits.

Q65 **Chair:** What sort of value was a QALY costing?

Professor Miles: We uses the rule that is actually used in the NHS, and that is a powerful reason for taking the number seriously. It is not just an arbitrary number picked out of the air and it is certainly not a number that economists have thought up and cooked up. It is a practical-use number in the UK. Using that number, it is very difficult to find benefits exceeding cost. If, however, you value a quality-adjusted life year potentially—no one is sure—saved at four or five times that number, then it is a much more even balance between costs and benefits. One would have to value the narrowly defined health benefits of the lockdown, ignoring health costs of the lockdown, at three or four time the QALY number used in the NHS to make it look like we kept the lockdown in place for the right amount of time.

This was not an analysis that said there should not have been any lockdown. It was an analysis that looked at the impact of a three-month lockdown. A short, sharp lockdown might have been more favourable on a cost-benefit analysis, but at three months it looks like it went on too long.

Q66 **Chair:** Your analysis took into account the economic hit from the lockdown, quantified that and then you have this mechanism for comparing it to lives saved through the QALY. If I understand you correctly, it did not take into account, for example, the immediate health

consequences of the lockdown in terms of mental health problems and other issues, but the future health impacts of having a smaller economy as a consequence of the damage done by lockdowns, albeit that there would be damage done by allowing the virus to spread, of course. It is a difficult thing to pin down. Would that be broadly correct?

Professor Miles: That is broadly correct. There are potentially very large long-term negative health effects that have been generated as a by-product of the lockdown. We did not attempt to value those things, although recognising that they are probably significant. It is for that reason that we were trying to err on the side of not being seen to exaggerate the cost side of the calculation.

Chair: That is very clear and very helpful. It is quite technical but you put it across very clearly indeed.

Q67 **Julie Marson:** I would like to turn to international comparisons and focus on Sweden for a moment. Sweden did not have a law-led lockdown but its economy has shrunk nearly as much as its neighbours such as Norway—a bit more, actually—and it has had more deaths. Does that suggest that the Swedish approach was wrong?

Professor Miles: It depends whom you consider to be a natural comparator to Sweden. You are absolutely right that if you compare Sweden with its immediate neighbours, Denmark and Norway, it has had far more people infected and far more people dying. Some people would say that its economic performance is marginally better; some people would say it is very close to being the same. If you simply made that comparison, the Swedish strategy does not look particularly attractive.

There are two things. First, the Swedish authorities have always said that because of potential long-term negative health implications of lockdown, you will only really know how successful Sweden was in a longer timeframe than simply now, six or seven months after this terrible virus has arrived.

The other point, which I am sure is well known, is that if you instead compared Sweden with the average European outcome or particularly the outcomes in countries that have been very hard hit but had quite strict lockdown—the UK, Spain, Italy and France—then Sweden looks like a complete winner. It has had a much better economic performance. It has had lower death rates, lower excess deaths and lower infections than the UK and Spain, and probably France and Italy as well.

Q68 **Julie Marson:** Tony, we talk about international comparisons quite a lot. By definition, we are often looking backwards at what has happened. The economies are very different, as David has said. We can use some comparators—Sweden, Denmark, Norway—but you are talking about different makeups of economy, different demographics and different population densities. Population density is vastly different in the UK compared to Sweden. Do you think there is a habit we are picking up of cherry-picking some of these comparisons to make political points? We

use Norway to condemn Sweden and Netherlands to condemn Belgium. How much light do you think we shed by looking at international comparisons?

Tony Yates: It is very difficult because there are so many things going on. Economists and those working with epidemiologists at the margin are doing things not dissimilar to what David is doing. They are trying to grapple with that. There is a further difficulty as well, which is that different lockdown policies chosen are not chosen at random. It is not as though people have dispositions to do it or not. They are more likely to happen in areas where virus prevalence is much worse. That is something that complicates it and can give you misleading correlations between the two things. Unfortunately we will not have the evidence now; as we move on, we will get a clearer and clearer picture.

There is interesting research in the States looking at a very granular level, at the county level. There are lots of devolved differences between the restrictions that were introduced by county-level administrations, where virus prevalence, just because geographically the things are adjacent, is pretty similar, and you can start to measure it there.

If I can interject about the previous discussion, in doing these kinds of analysis, which I am absolutely in favour of, it is very difficult to know what would have happened or what will happen in the absence of a lockdown policy, if one were to gently let the virus do its work. It is extremely difficult to conceive of what such an economy would look like in the long term, particularly if one were to bear in mind that there may be repeated waves of infection if we do not have long-term immunity. That kind of cost-benefit analysis is extremely difficult to do.

Q69 **Julie Marson:** Following up on that, how much of the economic decline that we have seen in the UK and Sweden can actually be attributed to lockdown, given that Sweden, for instance, saw a slump in consumption, probably just due to fear of the virus and all the publicity about lockdowns anyway?

Tony Yates: It is very difficult to say. My inclination would be to say that most of it is due to what economists would call voluntary social distancing—the natural tendency of people to assess the health risks around them, change their spending patterns and also change their amount of spending in response to it. In particular, one often characterises Sweden as a country that had no lockdown or had a very weak lockdown, but there was a lot of encouragement, and it is confusing us here to some extent.

Q70 **Ms Eagle:** I want to explore the idea that there is a trade-off relationship between public health and the economy. They are probably more intertwined than these more esoteric studies are suggesting. We do have some experience of pandemics in the past, particularly the flu epidemic that swept the US in 1918 to 1919. There has just been a review of all of that, which basically showed that there is no evidence that cities that

acted more aggressively in public health terms performed worse in economic terms; if anything, cities that acted more aggressively performed better. With that in mind, do we think this trade-off between public health and economic activity holds up to scrutiny?

Tony Yates: Personally, I do not. We are in an evidential fog on this, but around the optimal degree of lockdown, I do not think there really is a trade-off. Obviously, one can overdo it; if we were to lock ourselves down forever, we would all starve and die. Likewise, if you do not lock down at all, economic chaos would be unleashed. Around sensible lockdown policies, those things would be beneficial both economically and in health terms, so in that sense it will not prove that there is such a trade-off.

Q71 **Ms Eagle:** In other words, we should not be expending too much energy dancing on the head of a pin when we are in the middle of a pandemic. Perhaps we should look at the morality of deciding, like the so-called Great Barrington Declaration announced, that we should somehow let the virus rip and the fittest will survive. It is not my definition of a civilised society. Is it yours, Tony?

Tony Yates: No, absolutely not. That declaration does not offer a way forward. It hinges on this idea that you could practically shield the vulnerable and let the virus do its work, which is a bit of social engineering. It would be so vast, costly and infeasible that it is not a serious proposition.

Q72 **Ms Eagle:** Do you think it is based on the social Darwinist idea that the fittest ought to survive, which actually does not take account of disease? It is almost like blaming those who get the disease for getting it.

Tony Yates: I cannot peer inside their heads. It might be a bit unfair to characterise them as being motivated by that, but I certainly do not agree with the proposal or conclusions.

Q73 **Ms Eagle:** Professor Foster, how do you think that Australia, particularly the different states in Australia, have been reacting to this? I know you have done work for New South Wales or Victoria, but are there comparisons in Australia between different states doing different things?

Professor Foster: Yes, there are. Victoria had a very extreme lockdown, a second-wave lockdown, which it began after their cases started to go up in around June. In relation to the previous question, I would just mention that the 1918 flu is a completely inappropriate analogy to Covid-19. The 1918 flu was far more lethal and it was also killing people throughout the age spectrum and the life cycle, whereas Covid-19 is very highly focused on the elderly and it is simply not killing as many. We lost something like 20 million to 30 million people from the 1918 flu; we have only lost a million from Covid-19 so far.

I would also say that the Great Barrington Declaration's intent was to be very moral, in fact. I was not part of the organising committee but I have signed it; it is not a question of saying that the elderly are not worthwhile

or that somehow we should be socially Darwinist about our approaches, but rather that we should value all human welfare. That is all.

Q74 **Ms Eagle:** Do you think that herd immunity from Covid-19 is just around the corner? Do you think it actually exists?

Professor Foster: I look at the data. I am not an epidemiologist, so I will not speak about the science behind it, but I am very much an empirical data scientist. Around the world the number of people who have been lost to this thing—or at least died with Covid—has ranged from between 0.05% to 0.1% of countries' populations. Even the WHO now says that something like 800 million people in the world have been infected and we have had just over a million deaths. That is basically an infection fatality rate of 0.13%; that is the percentage of people who are infected who have died. If you translate that number to the British population, it is only about twice the number who have already been lost to Covid. That number is very far off the initial estimates that were coming out for the UK, of something like 1.5 million people dead.

The initial modelling was very wrong and it has not been adjusted for the data that we have seen. Whether you think that is herd immunity or pre-existing T-cell immunity or something else, the fact is that the virus is not killing people as much. In places like Sweden and places that have gone through a proper first wave, the death rates are coming down substantially; there have not been excess deaths mostly anywhere in Europe since May.

Q75 **Ms Eagle:** Professor Miles, do you think that this lack of hospitalisation in the second wave, if we want to call it that, is about the fact that it was seeded by younger people who tend not to die but is now rising up the age deciles and therefore our hospitals are filling up, particularly in places like Merseyside? Is this a clear and present danger?

Professor Miles: I do not doubt that there is a clear and present danger. I suspect that you may well be right that at the moment the hospitalisations are lagging behind the rise in infections, maybe because a lot of the people at the moment are younger people who do not need hospitalisation. I would not want to suggest that we are in anything other than a very difficult situation.

May I just very briefly address some other interesting questions you raised? You were not saying this, but one needs to be wary of thinking of two policies as if they are the only two policies. One is a very strict lockdown: "Stay at home; do not leave your house". The other is, "Let it rip and it will sort itself out. Maybe some people will die, but we have to let the thing rip". Of course, there are huge numbers of points in between. A Government could advocate practising social distancing, wearing masks, washing your hands; they could encourage people strongly to avoid crowds, in indoor places in particular, and to be very careful around older people. There is a whole range of things you could do that are neither letting it rip nor complete lockdown.

If I may just say one thing very briefly on this economic trade-off, you used the phrase "dancing on the head of a pin" as to what the economic costs are. May I give you one illustration of why that is not a good way to describe it? One of my colleagues at Imperial is a professor of health economics, Carol Propper. She recently published very careful analysis about the longer-term health impacts of economic shocks. She estimated that if you were to lose a number of jobs in the UK on about the scale as they were lost in the few years after the financial crisis in 2008, the number of people who might develop chronic health conditions was 900,000. We are already on track to lose more jobs as a result of this pandemic. Working out if you could have lost fewer jobs with slightly less restrictive policies is not dancing on the head of a pin.

Q76 **Rushanara Ali:** Good afternoon. It has been fascinating so far. I am going to focus my questions on the estimated number of lives saved. Professor Foster, you mentioned the 1.5 million Covid deaths that were being estimated. The UK Government's own analysis indicates that mitigation including social restrictions has prevented that 1.5 million number of Covid deaths when you take into account deaths due to lack of NHS critical capacity. Would many of the 1.5 million deaths have been prevented anyway without a stringent lockdown due to greater handwashing and people avoiding social contact? You seem to be suggesting that number is not reliable.

Professor Foster: 1.5 million deaths is totally unrealistic based on the observed death rates in any country in the world that we have seen so far, and therefore it is very clear that the UK is killing many more people via lockdowns and suspended health services than it could possibly save from Covid.

Q77 **Rushanara Ali:** The UK Government's analysis—it is not my analysis—is saying that is the number: 1.5 million Covid deaths have been prevented. You dispute that.

Professor Foster: Absolutely I do. Pick any country in the world.

Q78 **Rushanara Ali:** Can I just probe you? Your points are made in relation to not having restrictions. The UK Government are arguing that the analysis shows they have prevented this by having the restrictions.

Professor Foster: Again, the key fallacy underlying your question and your line of questioning is the presumption of Government agency. That is that Governments can choose to keep death rates low by having lockdowns, rather than that death rates are actually largely a function of other factors. In fact, they seem to be largely a function of other factors. For example, look at Peru: very strong lockdowns and yet almost the highest death count in the world. Underlying agency for Covid death rates actually rests less with Government lockdown policies and more with other sorts of factors, like pre-existing immunity, T-cell resistance, the underlying health of the population, et cetera. Indeed, it is possible that

those kinds of resistance levels were higher in east Asia, which is maybe why they had not lost as many people.

Q79 **Rushanara Ali:** Are we not talking about lots of different variables here? In certain countries you have a younger population and in Europe you have an ageing population. I am not disagreeing with you about some of the points around demographics, for instance, but you are moving between countries and examples. Focusing back on the UK, you are saying that this prevention number had nothing to do with lockdowns.

Professor Foster: I am not saying it had nothing to do with them, but, again, take any country in the world. We cannot simply make these numbers up based on models that do not get updated when we observe real human behaviour. No country in the world, no matter the lockdown policy, no matter how stringent or relaxed it was, has lost more than 0.1% of its population; Peru is maybe up to 0.12%. 1.5 million British citizens is way above that. What we are talking about for Britain would be maybe 86,000 at the upper level. It is just way off.

Professor Miles: I recall very well, and I suspect you do as well, the very influential study produced by my colleagues at Imperial in the epidemiology department, not us economists. There was a calculation there but it was very careful to have a caveat. It said that if there were no behavioural changes at all in the UK then perhaps 500,000 people might die, but it was recognised in the paper that it was extremely implausible that, even if the Government did nothing, there would be no behavioural changes. You can imagine that if deaths were rising so strongly people would do all kinds of things. Therefore, they did not in any way suggest that the restrictive policies that we have seen in the UK have saved anything like 500,000. There was recognition that there would be these natural responses from people.

Let us suppose the Government response had been short of a total lockdown, or almost total lockdown, that we had in the UK but had been more along the lines of, "This is very serious. You should do this. You should do that. You must wear a mask". The interesting question is how many more deaths we might have had if, instead of a three-month almost complete lockdown, there was a short, sharp lockdown but strong advice that people should take care. It is very difficult to be sure of that question. That is why in the study I undertook I had very different scenarios that involved high estimates and low estimates of the extra lives you saved as a result of a lockdown, and it still did not look sensible to have a three-month lockdown.

Q80 **Rushanara Ali:** Picking up on that point, can you say a bit more about the issues relating to NHS critical care capacity? Obviously at the time of lockdown there was a heavy focus on protecting the NHS and the lockdown restrictions being motivated in part by that. Could you elaborate on that and how that motivation impacted it?

Professor Miles: My recollection—you will correct me if I am wrong on this—is that the very precarious situation in intensive care was very severe in the middle and towards the end of March and early April, but that situation was much less worrisome a few weeks into April, both as capacity came on stream and as the numbers of new infected people began to decline very sharply. I would not want to argue that there is overwhelming evidence that the short, sharp lockdown was a catastrophic policy. I do not take that position. It is that we kept restrictions in place for longer than was necessary and plausibly offsetting the ever-rising costs of doing it.

Tony Yates: I want to pull back a bit to what is still the big picture, as it was at the time that Ferguson and the others from Imperial did their work. The chance of dying from this if you catch it is something in the region of 0.6% to 1%, and that is if you get good care. Things have improved somewhat since then, we think, through better knowledge and one or two treatments. Whether there is voluntary social distancing or enforced social distancing, eventually roughly 60% of people—the so-called herd immunity point—are going to catch it. The amount of people that will die from it is the infection fatality rate applied to 60% of the population.

That is what the current policy strategy is trying to avoid. It wants to try to suppress the virus, hopefully transit to suppressing it with test and trace, and we wait with hope for future treatments and maybe a vaccine. The alternative is letting roughly 1%—that is a slight overestimate—of 60% of people die, plus all of the other health costs from people who get long Covid. There is nothing that we have learnt since then to change that big picture very radically.

Q81 **Rushanara Ali:** The UK is now heading into a second wave, and obviously you can see we are all following the debates and discussions about localised lockdowns and the various tiers. Can each of you talk us through your perspective on what the Government should be doing? What are the key lessons that need to be learned from what has gone on before in terms of what we do going forward?

Professor Miles: The crucial thing is to really come back to this formidably difficult question about trade-offs. It is very clear that you could bring the infection rate down in the UK, and you could have an impact on the number of deaths that we face between now and Christmas with a return to a very strict lockdown and keep it in place for three months. It is also very clear that the economic and health damage of that would be absolutely enormous. You cannot get round this question, whichever way you try, of trying to evaluate and assess in some way the trade-offs. It may be that a short, sharp lockdown for a week or two will not cause enormous negative knock-on effects, but maybe it will not save all that many lives either, because once you relax it you will just be back on the track that you would. It is that trade-off that you simply cannot avoid trying to assess.

If I may say very briefly, one of the things that I find slightly puzzling—it is not a criticism, but it is slightly puzzling—about some of the very clear policy recommendations that come out of SAGE is that, although they seem to recognise these trade-offs, they also give advice that actually ignores the trade-off. I was very struck by reading the SAGE advice on 21 September, which was released very recently and said that essentially we need another lockdown in the UK. I will just read what they went on to say; it will not take more than 20 seconds. "The evidence base into the effectiveness and harms of these interventions is generally weak […] Nevertheless, non-pharmaceutical interventions will need to be in place for a considerable period of time and it is important, therefore, that studies are undertaken to evaluate the risks in different settings and the impact of different control policies […] Suggested data analyses and studies include […] studies on the impact of harm of interventions".

What is extraordinary about that in some ways is that it is advice that we should definitely follow our policy, but also admitting that we do not know what the side effects will be, and that it would be a good idea if somebody else thought about them. In some ways, it is rather a strange position for medically-minded people to reach: "We think there are some very harmful side effects, we do not know what they are but I am pretty sure you should do this".

Professor Foster: The main thing that is needed is a new Government message. One of the big mistakes of the UK Government and other Governments around the world during this period has been to fan the fear of the virus, rather than controlling the fear, dampening it and providing perspective for people. For example, in Australia we have lost fewer than 1,000 people to Covid, and we normally lose about 300 to 400 per day from all causes. That perspective has been totally lacking and Governments have just played into that fear.

What they should do now is pivot to a more human-friendly message, and that human-friendly message could be underpinned by recognition that what Governments really should be striving for is to maximise the welfare of their populations as understood broadly, not simply in relation to Covid deaths and suffering.

That could be done in the UK particularly well, since you guys are the inventors of the WELBY and have been using QALYs for a long time. Instead of focusing so much on Covid and even GDP, we should potentially craft a political message that is about having conquered the immediate effects of the virus, the immediate crisis moment, and moving forward in ways that are aimed to protect all of the people.

Q82 **Rushanara Ali:** Is the point that it is not either/or and it is not trade-offs? We have to act on those fronts simultaneously. It is tough for any Government to do that, trying to bring some compromise between the different perspectives, but it is not entirely helpful when we have constituents. I had the fourth highest age-standardised death rate in my

constituency during the height of Covid, so it is not something that is being imagined. At the same time, your point about excess deaths, the wider factors and the economic harms are well made. We need to act across the board on all of those fronts. Tony, do you want to just make a quick intervention and then I will have to stop?

Tony Yates: The one thing I wanted to add is that my concern about the way it has proceeded is that the epidemiological advice and the economic advice—this strikes something of a common chord with what Professor Miles said—have proceeded in a siloed fashion. In some senses I say this slightly unfairly, because the fashion in which the two things were fused together is something we are only doing now. You have had SAGE forecasting the epidemic without taking account of economics and you have the Treasury doing things in private without taking account of the epidemic, because they cannot. They have economists who do not know how to do this. The same is true of the Office for Budget Responsibility, the Bank of England and dozens of other economic outfits.

What one really would have liked to have had, which I think we should have—this is partly why I came on—is an institutional device that brings researchers and policy advisers together to build a set of fused analytical tools where one can study these things. There is not a trade-off in the long run, but there will certainly be difficult choices to make about who bears the costs. There are intertemporal trade-offs, and these things can be worked out, exposed, and even somewhat depoliticised so that there are a menu of things that are put on the table for MPs like yourselves to actually make intelligent choices.

Q83 **Chair:** Tony, when you gave your example of the population multiplied by 60% multiplied by the mortality rate, did I hear you use 1% as the mortality rate?

Tony Yates: Yes. That is a slight overestimate now, given the new knowledge we have about how to treat people, but it is not that far off. These things depend on demography.

Q84 **Chair:** By my calculation that leads to roughly 360,000 deaths for 60 million people, whereas, Gigi, the figure you gave earlier was 80,000. You seem to be using something like 0.1%, i.e. an order of magnitude of 10 times differences between your assessments of the mortality rate. Gigi, can you quickly comment on that? Why 0.1%, not 1%? It is an important point.

Professor Foster: I am using the WHO's estimates for the number of people now infected in the world and also the number of people who have died with the virus, and simply dividing one by the other. You get 0.13.

Q85 **Chair:** Tony, why is that wrong by a factor of 10?

Tony Yates: I do not know. I am using what the epidemiologists started out with, shaved by what they have told us about how they have got better at treating people, plus the limited use of this new antiviral

therapy that has been made. It has not been widespread but it has made a significant dent and could make a further dent.

Chair: This is an absolutely critical number.

Professor Foster: It certainly is. Can I just make a plea for using actual data for this situation rather than models? We have had models since March; they have been proven to be out by orders of magnitude. We now have data, and, as a data scientist and somebody trained in post-enlightenment thinking, I would implore everyone to look at the data. The World Health Organization is almost as authoritative a source as we are going to get on this.

Q86 **Felicity Buchan:** Gigi, did I hear you correctly that the highest incidence rate in the world is currently Peru, and that is only at 0.12%?

Professor Foster: Yes, to my knowledge Peru has the second highest death rate; I think San Marino or some place is first. I did a tabulation of all countries and I think Peru was right under San Marino.

Q87 **Felicity Buchan:** I must say that this evidence session is absolutely fascinating. I completely agree with what Gigi and David said: we need to look at the data, because too much public policy is being based on assumptions. I agree with you that we need to look at the total effects of the lockdown and what that means in terms of quality-adjusted life years. Gigi, I heard your point loud and clear that we are killing more people than we are actually saving during lockdown. What have you taken into account in your analysis? You said to the Chair that you have taken into account the impact on GDP and also positive and negative health benefits. Is that correct?

Professor Foster: Yes. The main costs that I tabulated are the costs in the short run from mental health decline and also the cost in the short, medium and long run from the decline in GDP that is brought about largely, if not completely, because of lockdowns.

Q88 **Felicity Buchan:** In terms of long-term health impact, have you taken into account greater incidence of cancer and cardiovascular diseases?

Professor Foster: I have not done an accounting of the crowded-out healthcare costs for Australia. One of the interesting things about the cost-benefit analysis I did was that I did not have to even tabulate those costs in order to easily come out with a conclusion that lockdowns were not worth it. Essentially that is an entire category of costs that I list in my document but that I have not personally tabulated. I believe that Professor Miles may have. I certainly know that Richard Layard and his group at LSE have tabulated those costs, and they seem to be extremely large for the UK.

Q89 **Felicity Buchan:** Can I ask you about a few other negatives? Clearly we have seen in the UK and Australia negative consequences such as domestic violence, loneliness, suicides and you mentioned an effect on

education and what that did to earning power going forward. Have you actually looked to categorise those costs or have any of your academic colleagues done so?

Professor Foster: On the question of education I have a forthcoming paper in the *Australian Journal of Labour Economics* that sets out a method of quantifying some of the costs of a disrupted schooling for our children. I focus there on forgone lifetime earnings due to the lower-quality education that they are receiving, but there are of course many other potential costs to children, including to their mental health and their long-run habits. These, like increased self-harm, suicides and domestic violence, are also regressive. It is those children, families and individuals who were already disadvantaged prior to Covid who will suffer the most as a consequence of wholesale lockdown policies.

Q90 **Felicity Buchan:** To play devil's advocate, could there be positive non-economic benefits such as cleaner air, for instance?

Professor Foster: Yes, there have certainly been some attempts to quantify these sorts of unintended health benefits of lockdowns. Again, Richard Layard and his team at LSE have calculated some of those. They seem to be reasonably minimal and modest in the grand scheme of things. Traffic levels quickly came back because people started to shy away from public transport, being afraid of going on public transport, and the effects of cleaner air in Europe seems to be minimal. There is also a lot more environmental pollution now due to the increased use of masks, packaging, little plastic bottles of hand sanitiser and that sort of thing. There is a new paper out in the *Lancet* by Giani et al, estimating that the welfare saved by reducing air pollution in China was much greater than in Europe. You would expect that, based on the initial starting levels.

The question is about what the goal was of imposing lockdowns in the first place? In name they were imposed in order to save Covid deaths rather than for any other reason, so if we wanted to reduce all-cause mortality without concern for the cost, we could stop all driving, smoking, alcohol-drinking, et cetera. The question is whether a Government are prepared to impose all of that on everyone in their domain via command and control. I do not think that they are.

Q91 **Felicity Buchan:** Again, just to pay devil's advocate, could a lot of the slowdown in the economy and the other negative effects that we are seeing be caused not by the lockdown but by fear of the virus?

Professor Foster: Indeed, yes. Some of that fear was certainly at play, but the problem is that fear is something that Governments have a hand in promoting or tempering. In some sense the effects of fear of something unjustified—something that is not as big a threat as it is perceived—really is the Government's fault as well. It is the Government's responsibility to try to contain that fear. In Sweden that was done much more effectively; if you look at the survey data on what things people were afraid of in Sweden, they were far less afraid of the

virus, even at the height of the virus's killing potential in Sweden, than people in almost any other country. That preserves mental health, it preserves perspective and, in the long run, it will allow Sweden to recover much more quickly from this crisis.

Q92 **Felicity Buchan:** I have just one final technical question. I follow your analysis in terms of the QALY and that being £30,000 for every additional year, and then you calculated the WELBY as being one-sixth of that. I got how you got eight minus two equals six, in terms of the standard quality of life versus the indifferent phase, but can you put how you get to that one-sixth into layman's language?

Professor Foster: The big thing to understand is how a WELBY is calculated. A WELBY is a one-point change on a standard 0-to-10 satisfaction scale, which is used for responses to the question, "Overall, how satisfied are you with your life?" It intends to capture life satisfaction, which is of course related to mental health and general thriving.

In a country like the UK, Australia or other developed countries, most people will answer fairly high on that satisfaction scale—about an 8 out of 10. In developed countries people have been found to think of a level of a 2 as being almost the same thing as being dead. If you are that low satisfied with your life you would almost just as soon be dead. If you imagine the difference between the standard, average satisfaction level in a country like Australia or the UK and a level that is equivalent to death, that six is essentially one healthy life year, which is a quality-adjusted life year. That is where six WELBYs equalling one QALY equivalence comes from.

Tony Yates: I want to very briefly make a point about the 1% versus 0.1% fatality rate. Let us suppose that the chance of dying from it if you caught it was 0.1%. A reasonable estimate of the number of people who have died so far in the UK is 60,000. If the chance that those people faced when they died of it was 0.1%, it would mean that 60 million people had already caught it. The herd immunity estimates vary quite a bit, but let us say it was 50%. We would be way, way over herd immunity, so one would have to ask, "Well, how did we get there?" There is no way we would have an explanation for why the virus is spreading as it is in the country at the moment, particularly in the north-west and other regions. For me, 0.1% is not a credible estimate of the fatality rate. It is out by an order of magnitude. 1% is probably an overestimate.

Q93 **Chair:** That is a very fair observation to make. Can I flip it back to Gigi, because this point is so critical? Is that not a fair point? If 60,000 is the excess death rate—and that is 0.1%—then 60 million people should have been infected, which is the entire population of the country.

Professor Foster: I would simply draw back to the comment that the World Health Organization estimates that 800 million people have been

infected by this virus and we have seen about 1 million die. To me that is the best estimate we have.

In terms of how many people have been infected for sure in Britain, as with many countries we do not know that, because testing regimes vary a lot. People who may have the virus have not been tested. I do not put much stock in the estimates from individual countries of how many people have the virus—Australia is also quite off—but I do put a lot of stock in excess deaths and deaths with Covid, even if they may not be due to Covid. 60,000 is still under the 80,000, and remember that the initial figure we were talking about was 1.5 million. You cannot have your cake and eat it too; either it is somewhere in the range of 50,000 to 100,000 or it is way up north in the millions. I just do not see that the latter is at all in line with what we have actually seen in the data.

Q94 **Chair:** It does seem quite hard to argue with Tony's logic, does it not, whatever the number is? 60,000 seems to be the excess death number, and something around 44,000 is the published number that we believe have died with Covid playing a part in those sad losses. If you run those numbers you end up somewhere between 40 million and 60 million on your 0.1% having to have been infected to drive that mortality.

Professor Foster: Again, I am simply going off what I think matters, which is deaths and, to some extent, the associated extreme morbidities. The number of people infected should not be given as much attention as it is. In fact, infection of people who are healthy and unlikely to experience serious effects is something we should be encouraging.

Tony Yates: We are deliberately not using any numbers about the number of people infected. We are just saying how many people died because of it, and therefore using the assumption, if 0.1% of people have died of it, of how many people must therefore have had it. Using the 0.1% fatality rate you get to an unbelievable amount of people who must have had it, particularly in light of the fact that the virus is spreading and it is spreading rapidly. It should not do that if so many people have had it.

Professor Foster: Perhaps we have overestimated the fatality rate. The fatality rate in Britain is probably closer to 0.06% rather than 0.1%. Remember, 0.1% is basically the maximum in the world.

Q95 **Felicity Buchan:** On that point, clearly a big factor, if you are looking at the incidence of the disease relative to the fatality rate, is that it depends upon how many people you test and which people you test. That is clearly a very relevant factor.

David, given your data analysis, which seems very similar to Gigi's data analysis, what do you think the policy implication is of that if you were recommending to Government what they should now do?

Professor Miles: The policy recommendation is that a lockdown as harsh and strict as the one we had in the back end of March running through

April and much of May is extraordinarily costly. One would have to be convinced that the scale of lives saved would be enormous, and probably much larger than is plausible, for that to be a sensible policy. Government should therefore be wary of going down the road of thinking that we have to keep imposing very harsh lockdowns, try it for a few weeks, then maybe try it again in a few weeks and try it again a few weeks after that, particularly if the advice they are receiving is perhaps not paying enough attention on the cost side of what that does. I do not simply mean GDP.

Some people—not the sophisticated audience today—have a view of, "Oh well, it is money on one hand and lives on the other, and you cannot do that calculation. Lives are without price. They are so valuable, so we cannot worry about GDP". What strikes me as being overwhelmingly likely is that the mental health, welfare and other health issues that go with economic disruption are so large that this is badly characterised as, "It is money and GDP on one hand and something far more valuable, lives, on the other". That is not right. It is welfare and quality of life against welfare and quality of life. That is why Government need to think enormously carefully—I am sure they are—about the cost of at least lengthy lockdowns.

Felicity Buchan: Thank you so much for what I would like to say is the most fascinating session that I have sat through in my tenure on the Treasury Select Committee.

Q96 **Anthony Browne:** I echo what Felicity has said. This is the most fascinating discussion since I have come to the Treasury Select Committee. Indeed, it is a discussion we have been crying out for. I want to make one observation as a mathematician and a data-led person as well. Professor Foster and Tony Yates are probably both right: the mortality rate in the UK could be different from the global average. This is a disease that particularly affects elderly people over the age of 80, and we have a more elderly population than the global average, so you could have different mortality rates.

I totally welcome the point that Professor Foster made earlier. The objective of Government policy should be to maximise human welfare rather than just to minimise deaths. I would also make the observation that all Governments around the world, not just the UK Government, have only been able to make decisions based on the knowledge they had at the time. Given that this was a new epidemic, we have been accruing lots of knowledge and we are a lot wiser now than we were six months ago.

Having said that, I want to come to Professor Miles first. Given what we know now, how should the Government have responded from the beginning? Clearly, you think a three-month lockdown was too long. Given the knowledge we have now, what would have been the optimal way of dealing with the crisis to maximise human welfare rather than just minimising deaths?

Professor Miles: It is easy, with the benefit of hindsight, to say we should have done something sooner. That is easy to say after the event, and in some ways it is a slightly cheap criticism.

Once we got through the phase where the pressure on hospitals and intensive care units seemed to be under control, a careful consideration of the ongoing major negative side effects of such a strict lockdown should have perhaps been given more weight at that point. It would have led to the conclusion that some easing in restrictions earlier may have been in order.

This is very speculative, but I also believe that, had the very restrictive policy of, basically, "Stay at home" not been in place for such a long time—this is amateur sociology or psychology—the enthusiasm to go out, party and have a good time when the restrictions finally came off would have been less significant and might have meant we would not have had such a resurgence now in September. In some sense, people felt, "Thank god it is over", in July and August.

Q97 **Anthony Browne:** Professor Foster, I am particularly interested in the UK Government but you can make observations about the Australian or other Governments. How should the Government have responded from the beginning?

Professor Foster: I largely agree with what Professor Miles said. In Australia, we had the added advantage of being an island nation. I did support selective border closures early on from countries that were seen to be having very extreme epidemics. That might have been appropriate in the case of the UK as well.

I would add that in March we knew about the age-discriminatory nature of this virus. We knew it was particularly severe and dangerous for older people. That simple fact could have motivated a lot more mobilisation of resources to protect older people in aged-care homes and other places where they are in high concentrations; cruise ships come to mind. We have known that since the advent of the germ theory of disease. It is smart to practise good hand hygiene and to take reasonable precautions, possibly including masks, around people who are vulnerable.

What I would like to see coming out of this in terms of a silver lining is more awareness of how we take care of our elderly and more vulnerable populations. They will probably be more vulnerable in future pandemics as well. That is what I would have liked to have seen. Sweden also missed the boat on that one. They could have done a better job protecting the elderly. Again, we knew this virus was deadly for them even in March.

Q98 **Anthony Browne:** Tony Yates, if our objective is to maximise human welfare rather than just to minimise deaths, given what we know now, how should Government have responded to the epidemic?

Tony Yates: We should have moved earlier. The evidence that we should have moved earlier was already there before we moved. It was not entirely the Government's fault that we delayed. Having studied what was going on in SAGE, it seemed to be that the committee was in some sense anticipating that they might not have been able to sell the policy of lockdown to their customers and there was a worry about fatigue. We should have moved earlier.

There may be something in what Professor Miles said about relaxing restrictions earlier, possibly. Obviously, everyone has been talking about the failure that we have suffered in not building up the capacity to test and trace, which ultimately is the next destination after a lockdown. The messaging over the summer, particularly with subsidising activities that we had previously discouraged, like going into restaurants, was truly bizarre and damaging. We are already reversing that now, so that was a great mistake.

For me, there is no alternative to stumbling through these lockdown measures and hoping that test and trace capacity comes and that a vaccine comes. The only alternative is a regular harvest of about 0.6% of the population, and I do not see how anyone could subscribe to that.

Q99 **Anthony Browne:** I want to take the discussion forward now. I will come to Professor Miles first. Given where we are, with the second wave taking off, given what we know now and given that we want to get out of this somehow—there may or may not be a vaccine and, even if there is a vaccine, it may or may not be that much of a silver bullet—what should the response of the Government be now in order to maximise human welfare?

Professor Miles: I have an optimistic thought here. It is not about track and trace, which is very difficult to get right and enormously expensive; it is disappointing but perhaps not so surprising that it is really difficult to get it working. There is a more optimistic thought on the way forward, which is the development—some of them are in development, as you will know—of what you might call moderately reliable, quick, very cheap tests. These are the kind of tests that are in some ways analogous to pregnancy tests: you do the test and you wait maybe 10 or 15 minutes. They need not be as accurate as we are used to expecting from medical tests. Some people worry greatly, "What if you get a false negative? What if you are actually infected but the test says you are okay?" Some of these tests may only have an 80% chance of getting it right. In other words, there is a 20% chance that you are infected but the test says you are okay.

If they are cheap and they are quick and you can do them every day, or maybe you can even do two at the same time, an 80%-reliable test becomes a 96%-reliable test if you do it twice. You are a mathematician: the chances of getting it wrong twice are very small.

Q100 **Anthony Browne:** That is assuming there is not a systematic reason

why they are going wrong. We all want a test and hopefully there will be a rapid one. In terms of lockdowns, restrictions and so on, what should the Government response be in terms of getting out of where we are now?

Professor Miles: It makes sense to take into account the different speeds that infections may be rising in different parts of the country and also the different risks that different groups of people have. Therefore, the blanket lockdown of, "Everybody stay at home" is very unlikely to be the optimal response to where we are right now.

Q101 **Anthony Browne:** Professor Foster, you said you are a signatory to the Great Barrington Declaration. Presumably you think we should have targeted sheltering.

Professor Foster: Yes, indeed. We should direct our resources proportionately to those populations and areas of the geography that are particularly vulnerable. That is something we do anyway with all sorts of policies. We give money and resources to the places where it really hurts. To somehow cast that objective as impossible social engineering is really quite inappropriate. There are certainly many lessons we can glean from the way aged-care facilities have been managed in Sweden, in Florida and in other countries of the world. There are success stories; there are tips and tricks. That is where our energy should be focused.

I have been very disappointed not to see more research subsidised by Governments around the world into what it is that can best protect people in aged-care homes, such as the protocols for staffing, linen changing, how you test people before they come in, what sort of tests you use and all of that sort of stuff. That is where we should be devoting our resources.

Q102 **Anthony Browne:** Finally, coming to you, Tony, given what we know now and given the aim of optimising human welfare, what should we do going forward? You painted this rather dystopian future of a harvest of a certain number of people every few months or so, and clearly we want to avoid that. To maximise human welfare, what should the Government be doing in terms of restrictions?

Tony Yates: Relative to where we were in March, things are much more optimistic. First, on the count that Professor Miles mentioned, it seems very plausible that we could have cheap mass testing, in which case tracing does not really come into it. Secondly, the prospects for a vaccine are enormously more optimistic than they were in March. The history of vaccine development is that something like 95% of candidates would never get there and it would take 10 years for one to arrive. Now there seems a very good prospect of one in the next year at least. That makes the calculation of locking down much more favourable. I am in favour of redoubling our effort. Of course, SAGE itself seems to acknowledge that the restrictions in place currently are not adequate to quell the virus.

I would express some agreement with Professor Miles. It seems plausible that we could have region-specific lockdowns and not a return to a tight national lockdown.

Q103 **Anthony Browne:** Finally, I have one last provocative question. We have not used this phrase here today, and I must admit I am not a big fan of it, but the President of the United States himself used it and said that the cure must not be worse than the disease. That is something we can all agree with, but, as a one-word answer, I am interested in whether you think the cure has been worse than the disease. It has obviously not been perfect; we obviously could have done things better. Professor Miles, has the cure been worse than the disease so far in the UK?

Professor Miles: The first harsh lockdown that began in mid-March was kept in place for too long, which is a very roundabout way of saying yes.

Q104 **Anthony Browne:** Professor Foster, has the cure been worse than the disease, or has it not been that bad?

Professor Foster: Yes, it has been worse than the disease. I said so in late March on the radio here in Australia, and I continue to say it.

Q105 **Anthony Browne:** That is a clear answer. Tony, has the cure been worse than the disease, or has it not been that bad?

Tony Yates: No, we have not had enough of a cure, and it was not well timed. We will not know for sure for many years, but my answer is no.

Anthony Browne: Thank you all very much for a fascinating discussion.

Q106 **Mr Baker:** Thank you all very much indeed. No one will mind if I tell you that in our WhatsApp group we are all agreed about the quality of your evidence. I particularly want to thank you for your courage on both sides of the argument, which we saw at work with things like the debate over the infection fatality rate and what that means. I really want to say thank you.

I am now going to give you an opportunity to hammer a nail by asking you whether economists, as well as health specialists, should be advising Governments on lockdown restrictions and the general response to coronavirus? Should you be in there advising Government?

Professor Miles: Yes. The situation is that many economists are already having some input, but it has not in any sense been formalised in the same way as the SAGE advice, where there is formal meetings and minutes and we can all see, with a slight time lag, what it is they are all saying and people can then say to the Government, "You did not do what those experts said". At the moment, economists are trying to get messages across. Many of us are talking to the economists in Government and the Treasury, but it is all a bit unofficial and it does not get passed on more widely to a wider group.

It may be sensible to have, possibly running alongside SAGE or maybe even joining SAGE, though perhaps it is a bit late in the day for that,

more formal analysis of some of these wider impacts of the restrictions. After all, this is what SAGE itself is asking for. It says, "We think we should have a lockdown now. By the way, we are not too sure about what the side effects are. Please can somebody do some work on that?"

Q107 **Mr Baker:** That is very good. It is almost like you have read my brief, which is based on the excellent book by my friend Roger Koppl, about expert failure and the need to have challenge from other groups in a formal way. Perhaps we will come back to that when it is my turn to give evidence. Mr Yates, you particularly wanted to come in.

Tony Yates: Yes, we need economists joining this effort. Like David Miles said, they probably are joining this effort, but they are doing it privately, in a way we cannot inspect and scrutinise as a wider economic community. I went on record in an article in the *Guardian* to say that it would be good to fuse the two things together, so that you have economic models with epidemiology in them and vice versa, unlike the current situation where we have epidemiological models on the one hand and economic models on the other.

There is no reason at all why they should be different beasts now. The virus and the economy are one and the same. I suggested that one should formalise that in a quango, like the OBR or something. You could have a depoliticised set of menus and choices and you could observe what we think their consequences are, and then decide what to do about it.

Q108 **Mr Baker:** De-politicisation would certainly be a good thing. Professor Foster, what do you think?

Professor Foster: Yes, I feel that economists should be part of the debate, along with other experts such as psychologists and social workers, but only particular economists. This is where the issue of independent thinking comes into play. The crisis here in Australia and also overseas has shown that most economists are just as prone to groupthink as other humans are, or too inclined to please politicians as opposed to deliver the frank and fearless advice that we really need in crisis moments. We really need those truly independent thinkers willing to speak truth to power, and I think we know who they are.

There needs to be a mechanism to bring those people in. I have advocated in the past for a secondment or a jury-system model. That would probably be a good option, as long as enough different viewpoints were included. As I say, it should not be just economists or just health scientists; it should also include social workers and psychologists, particularly when you are talking about policy that impacts such a broad swathe of society at such a deep level.

Q109 **Mr Baker:** You mean multidisciplinary teams providing advice across the full spectrum of areas affected.

Professor Foster: Yes, exactly.

Q110 **Mr Baker:** Staying with you, you also mentioned the idea of juries there. That suggests a kind of red-teaming approach to challenge these groups. Would you also want competitive groups? How would you seek to reconcile or choose between competing sets of advice?

Professor Foster: One of the big problems during this crisis has been the affiliation of professionals, who in normal times would be sought after as independent advisers, with the common party line, which has been lockdown totalitarianism, continued pressing of that lockdown button in ignorance of the trade-offs. As I say, that has shown us that groupthink is a very powerful phenomenon.

When it comes to advisers in relation to other problems, including in the financial industry here in Australia, where there is a lot of corruption, I would like to see people coming into the system who are educated enough about the broad area they are speaking on but do not have links to and reasons to advocate for particular positions that are not about human welfare. You want people truly committed to the human-welfare maximand, who are prepared to take an independent viewpoint even if it is not necessarily what a politician wants to hear.

The jury system is a suggestion intended to promote that, and indeed that is what we go for with juries anyway. We rotate people in; we do not have life jury members. You could just see where that would go: it would be corrupt and we would have insider trading of opinions.

Q111 **Mr Baker:** Professor Miles, can I ask you this question? How would having joined-up economic and epidemiological analysis be able to resolve these different opinions about what ought to be done? Do you want juries? Do you want competitive teams? How do you see these opposing recommendations being resolved?

Professor Miles: We do not want to go down a road where, in a sense, you have epidemiologists on one side saying one set of things and the economists in another room saying, "No, you are not looking at the wider effects". We do not want a conflict relationship between the two.

Following on from what Tony Yates said, a much more positive way of this happening is for there to be real collaboration. It is beginning to happen but they are not advising Government in a formal sense. We need a joint group of experts who know about viruses and can make a rational assessment of the wider effects policies may have on the economy and on health in the future. The group then, like SAGE itself does, could come to a common view amongst themselves as to what the best advice for Government would be.

Q112 **Mr Baker:** Perhaps I could reframe the question. Of course, I am suggesting that we should have collaborative multidisciplinary teams. What we have heard from this evidence session has illustrated something that we have now all seen amongst epidemiologists: you, as economists, have disagreed with one another. In particular, if I may say so, Mr Yates

and Professor Foster have disagreed on the approach that should be taken. What I am really putting to you is this: if we had multidisciplinary teams, one could imagine that even multidisciplinary teams would take different approaches. How do you foresee multidisciplinary teams collaborating within themselves and coming to some kind of positive policy resolution that a Minister could pick?

Professor Miles: If there were a split decision amongst your group of experts, with epidemiologists and economists, the summary of their advice would be, "The majority of us think this, but there is a minority that make these rather significant points. They reached a different conclusion, but, on balance, the weight of opinion in the room was that this might be the best strategy". Ultimately, then, a Government Minister and the Government would need to decide how to respond to that evidence.

Tony Yates: I would agree with what David said there. The Monetary Policy Committee at the Bank of England provides a not unreasonable model. You could have a committee of people with economic and epidemiological expertise, and underneath them you would have technical researchers who build all the tools to study the consequences of the different policy options. You would get an opinion from the committee members. You would have a virus policy committee as well. Of course, I am not suggesting that they would take the decisions. That would be a step too far. It would be for people like yourselves to reflect on what the virus policy committee thought and decide what to do.

Q113 **Mr Baker:** I have one last question. I know it is not for me to give evidence in these sessions, but I will retweet the brief I gave the Prime Minister on how to solve these problems based on Professor Koppl's work, and I hope you will have a look at it. If you have any feedback, I hope you will get in touch with me as well.

Could I ask each of you, by way of finishing, how you might approach the question of what the price of the 10 pm curfew is? Professor Foster, how might you approach the problem of pricing the 10 pm curfew?

Professor Foster: It is a difficult question. The main cost that I would foresee is, again, in the area of mental health. After 10 pm, I am not expecting many of the people who are actually most vulnerable to this virus to be out and about. It is the people going to pubs and clubs and late-night drinking establishments, et cetera. Those are generally going to be the younger people. Of course, the people who are immuno-compromised or the elderly who would have gone will take action to protect themselves. There is just no world in which that is not going to happen now. The costs would mainly be in the area of negative effects on people because they cannot socialise; basically, they cannot be a normal human social animal.

How much of their socialising would have been done after 10 pm versus other times? You could look at time-use surveys. I would try to query

data on the top times of day when these kinds of social activities happen. I would not think it would be most of them after 10 pm, but there would be some. You then try to apportion the mental health declines to whatever the fraction was, to 25%, 10% or whatever it was.

Mr Baker: Thank you very much. I am so sorry, Mr Yates and Professor Miles. I have to tell you that time is up and I will not be able to ask you the exam question. Thank you very much again for a great session.

Chair: Alas, that brings us to the end of this session. We have overrun, but it was very justified that we did so, given how interesting it has been. It has been, as a number of members have said, fascinating, not just in the sense of being nourishment for the intellectually curious, which I guess we all are, but also because the questions we are trying to get to the bottom of have real, immediate and significant impacts, if we can get those answers right.

You have certainly elaborated in a way that has demonstrated the challenges to getting clear answers to the kinds of questions we are asking in terms of what you include in your analysis in terms of the impacts of lockdown or no lockdown and what the common currency is that allows us to compare one set of scenarios with another. Of course, there is a big question around what the counterfactual is. If we had not done something, if something had not happened, what would the world have looked like? There are a huge number of loose ends. There is an overarching sense—everybody agreed on this—that we need to bring economics, economists and a more holistic view into our analysis around these very important decisions that Government are taking.

Thank you very much for helping us some way along that path and for joining us today. That brings us to the conclusion of this panel.

Examination of witnesses

Witnesses: Dr Luke Munford, Dr Anna Valero and Professor Philip McCann.

Q114 **Chair:** In looking at the imbalances in the UK economy, I am delighted that we are joined by three panellists. I would like to ask them to introduce themselves briefly to the Committee.

Professor McCann: My name is Philip McCann. I am professor of urban and regional economics at the University of Sheffield.

Dr Munford: I am Luke Munford, a lecturer in health economics at the University of Manchester

Dr Valero: Hi, my name is Anna Valero. I am ESRC Innovation Fellow at the LSE Centre for Economic Performance.

Q115 **Chair:** As I mentioned earlier—I will mention it again just in case you were not with us at this point—we are expecting a vote or a Division in

the House probably in about 20 minutes' time, at which point I will suspend the Committee for anything between 15 and 25 minutes. We will deal with that when we come to it.

As with the previous panel, generally the questions will be directed specifically at you, but in the event that you are not brought in to any particular part of the discussion and you wish to contribute to it, do please put up your hand and I or the questioner will attempt to bring you in at that point.

Could I start with a question for each of the panellists? I will start with Philip. What do you see as the most significant regional imbalances within the UK at the moment that policymakers should be concerned about?

Professor McCann: The UK's regional imbalances have a particular nature to them that is different to many other countries. All countries have intraregional imbalances, very localised imbalances, even within cities or between cities and their hinterlands. We see that in every country.

To understand the UK, you have to compare the UK with a country such as Japan or a small country such as New Zealand or the Netherlands. In countries such as New Zealand or the Netherlands, or even large countries such as Japan, all of the major regions, even over long distances, are broadly equal on pretty much every economic and social dimension. There is very little variation. Where you get spatial or regional differences, they tend to be very local. All of the regional inequalities, if you like, tend to be very local over short distances. That is true of many countries.

The UK is different, because we also have very high interregional differences. We have high intraregional differences, along with other countries, but we also have very high interregional differences. This is where we are something of an outlier in comparison to most competitor or comparator OECD countries, in that our interregional differences are very high.

The second aspect that is also different in the UK from other countries is that we do not have an urban versus rural story. A lot of the narratives in the press and also in areas of politics are about big cities versus small towns or urban versus rural. Those differences in the UK are very small by international standards. The big differences are between the core of the economy—broadly, you can think about London and the very wide hinterland of London—versus the rest; that is really where the differences are. Of course, it does not mean that all places inside the hinterland of London are very prosperous and nor does it mean that all places outside of that are very poor, but that is broadly the pattern.

We have what we call a core periphery structure in the UK. Countries that would look a bit more similar to us would be, for example, Italy. That would be south-north; we would be north-south, the other way around. We do not look like the United States, which is big city-small town or

urban versus rural; that would be typical for countries like the US, Canada, Australia and even, on a very small scale, places like Austria and Sweden.

We have a very particular set of inequalities, and they are also very high by international standards. It does not really matter how you measure them. You can take lots of different measures. If you compare across all the OECD countries, we have very high interregional inequalities. It is this interregional and not just intraregional nature that is so characteristic of the UK.

Dr Munford: Personally, the biggest differences in the UK, and particularly in England, are in health and healthcare. This breaks down into three broad areas. We know people in the north of England tend to have lower levels of health, both physical and mental. We know there is less access to good-quality care in the north, with longer waiting times, and we know there is an underinvestment in health research in the north. 60% of all research and development funding for health in England goes to the golden triangle of London, Oxford and Cambridge, although that proportion of the population is much smaller. You have inequalities in health, healthcare and research and development in health, and these all interplay with each other.

The second important inequality is in terms of economic outcomes. We know the north tends to underperform when compared to the south and the rest of England. The difference in gross value added, a measure of national GDP, is about £4 per person per hour less in the north compared to the rest of England. This equates to about £44 billion a year in lost GDP because of the difference in productivity.

In a report in 2018 for the northern Health Science Alliance, we found that these two things are inextricably linked. 30% of the difference in economic outcomes can be explained by differences in health, and that is a direct effect. We know that health is such an important prerequisite for every part of our life, as having individuals and societies with better health means we can have better jobs, be more productive and get higher levels of education and skills. That is purely the direct effect. We think that is a conservative underestimate when we account for these indirect effects of unequal distribution of health as well.

My key two points are unequal health outcomes and unequal economic outcomes. We cannot get away from the fact that these two things are very closely linked to each other.

Q116 **Chair:** That is very interesting. Very quickly, on that, you have taken a north-south prism through which to see those two issues. Where does the north outperform the south? What are the metrics you point to in order to say, "Actually, you are better off living in the north than in the south"?

Dr Munford: That is difficult. Based on all the data we have looked at, there are not many. I am struggling to think of any specific examples of

any indicators where the north would outperform the south at an aggregate level. This is looking at an average within the north, which is the northern Powerhouse definition, essentially the north-east, the north-west and Yorkshire and the Humber. On average, they tend to do worse on almost every aspect than the rest of the UK.

Obviously, these averages mask a lot of variation. There are very affluent and highly performing areas in the north and there are some very deprived unhealthy areas in the south. If we look at pure averages, the north lags behind the south in almost every domain, if not every domain, that we have looked at.

Q117 **Chair:** Anna, I would ask you the same question. Would you agree with the specific point that the north is lagging on every metric you look at when it comes to imbalances?

Dr Valero: The main measure I tend to look at is productivity, which tends to be correlated with most other measures of economic wellbeing but not all of them. We know there are significant differences with a broad north-south pattern to them and that these disparities have been growing over time. Some of them have been maybe narrowing a little bit, depending on the measure you are looking at, since the financial crisis, but they have been growing over time significantly. They are at similar levels to the early 1900s.

While there is this broad north-south divide, we have issues around the coast as well. There are lots of coastal areas that tend to have particularly low productivity and poor health outcomes, largely due to declining industries and their peripheral location, which matters in terms of their accessibility to the rest of the country. Some rural areas, for example in Wales, particularly have low productivity. We also have massive variation within regions. When you look at more disaggregated levels, for example, at the NUTS 3 level, within NUTS 1, the larger regions, you see real variation. In the north-west, you will see Cheshire East, which does particularly well; Greater Manchester and the north-east do worse.

Something to be particularly concerned about is that some areas that were doing relatively better are now slipping behind. If you look at the time series of productivity relative to the UK average, within Greater Manchester you had Manchester City and Greater Manchester South West, which were actually above the national average in the early 2000s and now they are around 90% or in the mid-90s of the UK average. These are things to worry about. Fundamentally, there are massive inequalities within areas as well. Even in Kensington, a very rich constituency, there are pockets of deprivation that are particularly high even on a national level.

In terms of what we should be concerned about, we need to be concerned about alleviating suffering and providing better opportunities. Skills and education are key to that. Fundamentally, the reasons for this,

the dynamics, whether they are industrial decline or change, will differ for different places. A combination of national and local policies are relevant when thinking about this.

Q118 **Chair:** That is very interesting. To what degree, Anna, is COVID and the health crisis going to change any of that? Is it going to exacerbate any of these things or is it going to level things up by levelling the south down a bit more? How is it going to play into that picture you have painted us?

Dr Valero: What we have seen already is that the economic impacts and the health impacts of COVID have disproportionately affected less well-off people, less skilled people, women and ethnic minorities. That is the short-term impact. In some cases, those will coincide geographically with areas that were already struggling, but not in all cases. It really depends on sectoral mix. Areas where there is a high proportion of hospitality, in-person retail or recreational or cultural services have particularly suffered economically.

Looking forward, we are going to have a number of uneven impacts. The impacts on educational disruption will be felt much more by people from poorer backgrounds, who may be less able to access good internet and technology to do remote learning and who have other issues that put them at a particular disadvantage anyway, even pre-COVID, and have been exacerbated during the crisis. The short-term impacts and the longer-term scarring from labour-market and educational disruption are what is important.

Of course, there might be a levelling down of places like London. This really depends on how things are going to play out. We know the centre of London is suffering in terms of lots of those in-person services, but then lots of people in London can work from home. There are many in London who have not been so severely impacted by the crisis. The future of London as a city will really depend on a number of factors: how we exit this pandemic, the impact of Brexit and a number of other shocks and changes over time, like technological change and automation, which affects different places in different ways.

Chair: That is very interesting.

Q119 **Siobhain McDonagh:** Can I thank Dr Valero for recognising the education inequalities, particularly with regards to having access to the internet and devices at home? Most of my questions are about health inequalities. They are particularly to Dr Munford, but if anybody from the panel would like to come in, that would be great. Can variations in coronavirus death rates be explained by existing health inequalities? For example, is the variation in life expectancy a factor in the areas and regions with the highest numbers of cases and deaths?

Dr Munford: We are currently doing a report, which will be available very soon—I will be happy to send it to you—looking at exactly that question. Can pre-existing inequalities in health help us explain the

unequal impacts of the pandemic that we are seeing, both in terms of contemporaneous health outcomes and predicted future economic outcomes?

We think the short answer is yes. Deprivation and growing gaps in health inequalities really drive some of this variation in the way COVID is affecting different parts of the country. As you have said, there are huge variations in life expectancy. It is about two years on average between the north and the south. Each of the 10 shortest life expectancy areas are in the north, and out of the 10 longest, nine are in the south and south-east. There is a difference in life expectancy of up to 10 years. These areas are very strongly coming through as being the worst and the least affected areas in terms of COVID-19 mortality and all-cause mortality, so, yes, we really think that pre-existing health inequalities are a major factor in what we are seeing coming through at the moment.

Q120 **Siobhain McDonagh:** There is a nine-year difference in life expectancy between my own and my neighbouring constituency of Wimbledon. That is just how London is. Could the coronavirus outbreak widen existing health inequalities in the UK? To what extent do other factors such as poor housing play a role in explaining the regional variations in fatalities in the UK?

Dr Munford: Yes, there is a genuine concern that the widening gap we have been seeing over the past 10 years could get even wider as a result of coronavirus. There is higher mortality, but we have also seen significantly large reductions in mental health in the north compared to the rest of the country, even in the short period up to May. We are expecting this to get bigger as different localised lockdowns are imposed in different parts of the country.

There are obviously very strong differences in other factors such as housing conditions. Deprivation is probably the catch-all term for the differences we are trying to investigate. What is interesting is that these regional inequalities still persist even when we account for the unequal deprivation in the north. In the south, there are unequal housing conditions and differences in education. There is still something that is almost unobservably different between the north and the south, and this probably links back to years of difference between the two areas. Pre-existing health inequalities and socioeconomic differences are very important, but they do not tell the full story. There is something else going on that makes the north and the south different in terms of what we are seeing up to now with respect to COVID-19.

Q121 **Siobhain McDonagh:** My area of south-west London is expected to be the location of one of the Prime Minister's promised new hospitals, but it comes at a cost: the downgrading of a hospital in an area of poor health and low life expectancy to enable the opening of a new building in an area of better health and higher life expectancy. What is the most effective way of improving health outcomes in deprived communities in the UK? Do you agree with me that the biggest factor in determining the

location of any new hospital should be the area with the highest health need?

Dr Munford: I completely agree. We should be building and improving existing services in the areas where they have the biggest capacity to provide good-quality healthcare and improve the health of the population. There is a well-known law called the Tudor Hart law or the inverse care law, which essentially says, "We know that the best access to the best care is in the areas that least need that care". In terms of a solution, we need to ring-fence and look to increase the deprivation weighting of the NHS allocation formulae.

It is good that they are there, so there is a deprivation element to how NHS budget get divided up, but we can go further and faster in terms of putting in place better access to care in the most deprived areas. The NHS plays such a vital role, particularly in deprived areas, because it improves people's health, but there is also this phenomenon of the NHS being an anchor institution, so it regenerates local economies by providing employment, and the money then goes through the system. There are a lot more advantages, beyond better health and better access to healthcare, to building or improving hospitals in potentially deprived areas. I completely agree with that point.

Q122 **Siobhain McDonagh:** A recent ONS study suggested that ethnic minorities' higher risk of dying from COVID-19 is linked to where they live and the jobs that they do, rather than pre-existing health conditions, which is a bit of a challenge to what people originally thought. Would you agree with these findings?

Dr Munford: It is incredibly difficult. I have seen both sides of the argument, and these two things are so intertwined that it is really difficult to pick them apart. It links back to entrenched inequalities and the differences between different groups and strata of society, which goes back generations. Trying to pinpoint the exact causes of some of the inequalities we have seen due to COVID is increasingly difficult. We need to know more about that before we can definitively say what we think the strongest effect is up to now.

Q123 **Ms Eagle:** Professor McCann, is the dominance of London part of our centralised system of Government? Is the lack of a proper industrial policy within the institutions for regional policy over the years what has caused that problem?

Professor McCann: They are all connected. You are completely correct. They are connected, but they are connected through so many myriad routes. Broadly, the dominance of London in the UK in part reflects the fact that we are a centralised society. If you look across the OECD, more centralised societies in terms of their governance systems and governance structures tend to have larger dominant core cities. If you think about countries like Japan, for example, or France, they are largely

centralised societies, although both of those countries have been decentralising for nearly 25 years.

Across all the data of all comparable countries, what you see is that London is about one and a half times bigger than you would expect given the population structure and the size of our economy. London is already bigger, and then, if you do it in terms of GDP, it is bigger again. Clearly, London is an outlier when you look at the overall urban system.

Ms Eagle: I am sorry, Professor McCann. We are going to have to stop to vote, I am afraid. I will hand back to the Chair.

Chair: We will come back to you, Angela, and we will come back to you, Philip. I am now going to suspend the Committee for between 15 and 25 minutes. Can I ask the panellists, please, to stay logged on? Do not log off. Go and have a well-earned cup of tea and we will see you in about 15 minutes' time. Thank you very much.

Sitting suspended for a Division in the House.

On resuming—

Chair: Welcome back. Thank you to our viewers for bearing with us while we had a Division. We just had a question that Angela was in the middle of discussing with Philip.

Q124 **Ms Eagle:** I was asking Professor McCann to talk about the reasons for the regional imbalances that we have and asking him whether that was partially about our over-centralised political system and also our lack of a regional policy and an industrial strategy.

Professor McCann: Yes. When you compare the UK with other countries, we know the UK is a very centralised society. In the last four decades, in terms of governance, it has become much more centralised. The reasons for the imbalance are what I term the three Gs: geography, globalisation and governance. The geographical structure of the UK is very strange. The political capital and the economic capital are the same place, but they are also the centre of pretty much all the trade networks, if you look at the geography of our road system, our rail system and the way our air transportation system is organised. There are so many examples of this.

Basically, when the modern globalisation shocks of the late 80s and early 90s came on board, there was a great deal of gravity in the sense of trade routes all going into the same places, and that of course created bottlenecks as well, which affect land prices locally in London and so on. That was the first thing. Secondly, a lot of the deregulations and changes that happened in the 1980s in London, ex post, looking backwards, were just very lucky. They were fortunate. We saw the growth of the financial markets building on the eurodollar markets of earlier eras and so on.

When modern globalisation really happened in the late 80s and early 90s, London was just very well positioned to take on board a lot of these

things. If you go back to the 70s and early 80s, London was struggling. There was a general consensus across Whitehall, academia and policy circles that, at a national level, we had to get London working.

Q125 **Ms Eagle:** You are probably saying this, but I was just wondering whether the big bang and the huge growth of our financial services sector has transformed London's prospects, which, as you say, were worrying in the 1970s. Now London has acted as a kind of magnet. Many people who wish to get jobs in particular sectors or whatever gravitate down to London. Because there is no regional strategy and no positive attempt to do anything to combat the market forces with regional or industrial strategies, it means that everybody gets sucked down into London, including a lot of the people from regions who might well, in other circumstances, have stayed local and helped build their regional economies.

Professor McCann: I take a different view. When you look at the data on mobility, particularly of university graduates, who are by far the most mobile cohort in society, movements into London from other parts of the country are basically stable over 30 or 40 years. They have hardly changed, and the numbers are actually not very big. It is around 50,000 a year, which is two-thirds of the number of people working at Heathrow Airport on a normal day. The numbers are actually quite small and they are fairly stable.

What has happened is that, at the same time as the positive shocks around, for example, financial services impacted on the London economy, a lot of the negative shocks related to the manufacturing industry adversely affected other parts of the country at the same time. We had very asymmetric shocks in different parts of the country. We had a very global and geographical concentration of activity moving towards one particular part of the country, and we had no governance system that could play any real role to try to counter that or shape it.

When you look across the OECD, what you see is that countries that are much more devolved in terms of governance have much more equal growth across the country. Their inequalities are much lower and they do not grow to the same extent. There is no national cost associated with being more devolved in terms of growth and being more spread out, with more even regional growth. There is no growth advantage in terms of having inequalities spatially. If you go back 15 or 20 years, that was the dominant view in academia and in think-tanks: "You have to allow these imbalances to happen, because what we call agglomeration processes and clustering will generate growth nationally". Actually, the evidence on that is that this is not true; it did not happen. If anything, the core part of the economy, which basically got a big step up at the time of modern globalisation in the late 80s and early 90s, has increasingly decoupled from the rest of the country.

This is now the problem in terms of governance. We have almost the most uniquely ill equipped and ill designed governance system for the challenges we face interregionally. That is the big problem for us.

Ms Eagle: That is interesting.

Chair: I am sorry to interrupt. Anna wanted to come in; she had her hand up.

Q126 **Ms Eagle:** Could I just ask you to answer this as well? How can we best position the regions from a governance point of view, to try to start rebalancing? By "rebalancing" I do not mean making London poorer; I just mean strengthening the regions.

Dr Valero: I wanted to add a few points to what Professor Philip McCann said. When you look at the data on London, there is some analysis that Henry Overman, Steve Gibbons and colleagues have done, where they looked at the disparities in wages and found that human capital skills explain 90% of the differences. When you look at the data, the latest data from Eurostat shows that in London the share of people of working age with a degree has risen to 60%, which is by far the highest across Europe. The second highest region is Île-de-France, containing Paris, which is at 50%.

This has been to do with this virtuous cycle that London entered for a lot of the reasons that Philip was mentioning. You have more skilled people going there, which leads to agglomeration economies and more people come. There has also been a rising graduate premium over time, so people with degrees have been earning more over time. London has entered this virtuous cycle.

At the same time, you were alluding to industrial policies and regional policies. We have done a lot of work on this at the LSE. There has been so much chopping and changing in these areas, with constructing institutions, breaking them up and making new institutions. All of this has meant that we have not had a proper long-term either regional policy or industrial policy. Now there is even more of a need than ever for those things.

When it comes to finance, look at the share of the population working in finance in London. Obviously, finance has contributed to London's and the UK's growth, but it is not that all of the growth we had up until the financial crisis was a finance bubble. There was a lot of growth in business services, many of which are in London but are actually quite spread across the UK. We did some analysis where we looked at different types of sectors in the UK, and we found that there is some finance outside of London; there are business services outside of London.

The growth in London has not just been a sectoral issue; it has been within sectors. Some ONS analysis shows that, when you compare the productivity between different places within sectors, London tends to do a lot better. A lot of this comes down to understanding, at the firm level,

what the drivers of productivity are. They tend to be adoption of the latest technologies, management practices and processes. That is why there is a very large discipline within economics that is trying to understand this, both in the UK and internationally, explaining the disparities between firms even within the same regions and sectors.

Q127 **Ms Eagle:** We could certainly do with some explanation around lagging productivity. Finally, Dr Munford, did you have any observations on these areas? How might we rebalance and bring prosperity and opportunity to the regions in a much more coherent way than we have managed in the last 40 years?

Dr Munford: There is no obvious reason why we cannot do that or try to do that. An example would be the Northern Powerhouse scheme of George Osborne, which tried to bring greater economic prosperity to the northern regions of England. That gained a lot of initial momentum, but it seems to have fizzled out recently. Bodies like this but with more power and control over some economic levers could help us to address some of the imbalances that we know exist.

As you said, we do not want to take everything away from London. We want the regions to improve without detracting away too much from some of the other areas, because we know, on average, across the world, that societies that are more equal do better than unequal societies in almost every domain. It is in everybody's interest to reduce these inequalities in terms of GDP, health and almost all outcomes we can think of. More equal societies do better than unequal societies. Thinking about the measures we can use to bring this prosperity to the north is really crucial.

Q128 **Ms Eagle:** Does that include more devolution of power, particularly the power of economic decision-making, to the north?

Dr Munford: Devolution in its current form is focused on health and social care. In our report from 2018, we show that health is a really strong predictor of future economic prosperity. There is no reason why, if devolution works and improves the health of people in the north, economic outcomes will not follow behind very quickly.

Devolution is a very good idea. It remains to be seen whether it is working, because it is still relatively new. The powers only really started in 2016, and health takes a long time to come through from the ideas to behaviour changes to the actual changes in health. All the early indicators suggest that it does seem to be improving the health of the people in the Greater Manchester City Region, so that is one potential avenue that is worth exploring more, depending on how Greater Manchester continues to do.

Professor McCann: The devolution steps that we have had so far are small steps in the right direction, but do not underestimate how small they are. To understand the scale of the challenge, if you look at the

devolution deals, for example, for city regions, the finances involved relative to the size of the economy are absolutely minuscule. The level of powers that goes with those deals is generally very small. They are steps in the right direction, but there is a lot of conversation as if to say, "We have done devolution now". In comparison to countries that really are devolved, the steps along the route we have made are still absolutely tiny. We are still ultra-centralised by any OECD-wide standard.

Ms Eagle: I agree profoundly with that. The money given to Liverpool City Region over 30 years did not cover the money that had been cut in the austerity budget cuts in two.

Q129 **Harriett Baldwin:** In response to Dr Munford's point earlier, I visited the Soviet Union when it was still the Soviet Union. It was an equal society, but they were all equally miserable. I am sure what you aspire to is what I aspire to, which is to level up and increase prosperity and productivity.

It is on that subject, Professor McCann, that I wanted to start. You have made a big play on the importance of devolution, but if you were to choose one thing that would level up productivity specifically in cities outside London and eliminate that lag, what would be the one thing you would choose to do?

Professor McCann: I cannot answer, because there is not one. The whole problem with this is that there are multiple interrelated factors. While I favour devolution, devolution itself is a double-edged sword. Devolving in the wrong way can cause more damage than not devolving or can at least be as damaging.

The situation we are in today is not new; it is not recent. It has taken pretty much 35 or 40 years to get where we are. To move the dial and move away from the situation we are in is going to take a very long time. It is not the life of a Parliament; it is going to be multiple Parliaments, and there are multiple elements involved.

I will just throw out a few things: the governance structure is absolutely critical; the land-use planning system; how we think about infrastructure; the structure of our education and skills system, particularly how it relates to things like innovation and entrepreneurship, which operate in different ways in different places; and the rethinking of the financial system. If you just look at civil society activities and civil engagement, the UK ranks very low by international standards on civil society engagement in terms of how we make decisions.

The problem is that it is across the board. It is what sociologists call a wicked problem. There is not a single solution. It is lots of pieces of a jigsaw that need to be put in place. I am happy and excited that this is very much on the political agenda now and that people across all political parties are talking about it. If you go back only a very short period ago, you would hardly ever see these discussions even in the press. At least now there is a widespread engagement and widespread discussion in all areas of society. Hopefully, that is a big start.

Q130 **Harriett Baldwin:** Can I ask you perhaps to order your top three, then? I appreciate that asking you to pick one is perhaps a bit extreme, but could you order your top three?

Professor McCann: One is a complete reform of the fiscal system, but that is something that cannot be done politically. It has to be considered by having a proper independent advisory panel to do an investigation. We have to look at the opportunities for devolution and how they work in different countries, both in terms of the strengths and the drawbacks. That is one element.

The second one would be a rethinking about a lot of public investment around things like research and education. The third one is also about things like infrastructure and land use. We need to rethink that, particularly the role of planning. We have to have proper planning strategy to shape and reshape these issues. Those would be my top three.

Q131 **Harriett Baldwin:** I was asking specifically about cities there, but if you were looking at towns and rural areas, would you change that list in any way?

Professor McCann: The key thing is that we have to have a much more regional way of thinking. Off the top of my head, if you take somewhere like Barnsley, we have to think about Barnsley in the context of Sheffield and the Sheffield City Region, but, if you go further out to other places, you have to think about relationships between smaller towns and the hinterland areas of bigger cities. We need institutional systems that can also link places.

The idea of the city region is absolutely correct. The underperformance of our big cities outside of the south-east is basically what describes the UK productivity problem. It is a very longstanding problem. We are a very highly urbanised society. We have to turn it around, but we have to do it in a way that connects with all of those smaller places that are in the hinterlands of cities. We need a complete rethinking about how we structure industrial policy in a much more regional sense.

Harriett Baldwin: If you get the city side right, it helps with the towns and the rural areas.

Dr Valero: I would echo that this is such an interconnected problem with so many things that need to be done at once. Any one in isolation is unlikely to be effective. In some recent work on what a growth or recovery strategy might look like, we set out how we need large-scale investments across five types of capital, which are human capital, knowledge capital, infrastructure, natural capital and social capital. All of those things interact together.

If I had to pick one to prioritise, it might be that, because that is investing in people, their opportunities and their resilience to shocks. We have seen that there is continuing to be a premium to people having

skills, not just university degrees but technical degrees, technical skills, retraining and reskilling. That is absolutely crucial, given the current crisis, given the zero-carbon transition, which is going to affect some areas more than others, given Brexit and given, again, as I said before, general technological change. We have needed a lot of this reskilling and upskilling even before the current crisis, and we need it even more now.

Q132 **Harriett Baldwin:** Dr Valero, you are on the record as saying that you think that perhaps more uneven development across northern cities may be necessary if we want one of these cities to provide the opportunities available in London. Are you arguing in favour of Government themselves picking a winner in terms of the northern cities?

Dr Valero: I do not like picking winners in general, because Governments are not best placed. What Governments can do is work with industry to create the conditions for growth, and then you see how things develop. You make sure people have opportunities; you make sure they are living in clean, liveable cities with good living standards, access to health and access to education.

The only reason we said that in our submission to last year's inquiry was because you cannot physically have every single city in a region doing the same. It is impossible to achieve that. When you try to allocate resources in a way that is jam-spreading, you are unlikely to create some of the benefits you are trying to achieve. We do not seek that, but we have to acknowledge that it is likely to happen, given the way economies develop.

Q133 **Harriett Baldwin:** I just have one topic that I want to ask Professor McCann and Dr Valero about, which is this change in terms of remote working, the big shift we have seen, with the hollowing-out of cities as a result. Do you see that as a permanent trend? Is it something that will lead to the flourishing of towns? How will it affect broadband? Does it mean that distance matters less? Is there much less of a benefit to that regional or city concentration than there was previously? What are your thoughts on that?

Professor McCann: The best estimate on this would be that, because of a huge shift in this type of online working, when we come through the crisis it is probably likely that around an additional 20% of office hours for office workers, for example, will permanently shift to home. At the moment, around 20% is a fairly typical number. That may move up to about 40%. You are looking at one and a half to two days a week being quite normal for people to work from home. In manufacturing-type industries, it is going to be around a day a week or something like that. It might be one and a half days.

This is a double-edged sword, particularly for weaker parts of the country. For many people, the number of commutes they do will fall. That makes it more attractive for people in more remote locations to look for jobs in the more prosperous, bigger places. It weakens the smaller cities

that are trying to get back on their feet. Suddenly they are in competition with, for example, London. In the current conditions, where people are commuting pretty much every day, they are segmented markets. If anything, my guess is that the long-run effect will be to make the more prosperous cities relatively more prosperous, because their hinterlands will get bigger. Even though at the moment the core cities are largely like ghost towns in many cases, once we are through COVID, if you look at any of the history of shocks to cities of all different forms, within no time they come back.

The real danger is for the weaker cities that have relatively smaller hinterlands. They will lose a lot of the high-value human capital of the form that Anna was talking about. Those people could be potentially switching to even more prosperous places.

Dr Valero: Yes, there is a lot of uncertainty about this. Max Nathan and Henry Overman recently wrote a really good piece that sets out different scenarios for exiting the pandemic and what they might imply for the future of big cities.

There are a lot of unknowns. We do not know how we are going to exit. We also do not know what the permanent productivity effects of remote working are. While many people are quite positive about it, that is often with existing teams. We have not seen how that necessarily works when we are recruiting new people and training them up. For younger people at the early stages of their career, there are many more benefits from learning in person and networking within and outside their companies.

In terms of the academic evidence and what we know about the productivity impacts of remote working, it is very hard to say. They are either in very specific situations or there is a lot of selection into it. How this pans out will depend on whether specific firms or sectors find that it is profitable for them to continue working in this way or not. In cities like London, we are going to see a report from the City of London setting out a new vision and plan for London, perhaps seeking more SMEs and creatives back in the centre of London again, which actually, as Philip said, might attract some people who were outside of London or in other towns. They might think, "We can go into London now". Assuming that London continues to have various benefits due to amenities, et cetera, it could have that kind of impact. It is very uncertain currently.

Harriett Baldwin: It is a "watch this space" issue in terms of the impact.

Q134 **Julie Marson:** May I go back to Dr Valero and ask you about transport investment, please? It is fairly obvious that transport per-head spending is much greater in London than it is in, say, the north-east. If other cities in the north-east had higher rates of public investment in transport, could that boost them as much as London?

Dr Valero: Based on the literature I have referenced before, the simple answer would be no. If you just invested in the transport and did not do

any of the other things you need to do, you are not going to achieve the same success London has had. You need the co-ordinated investment in skills and innovation. As Philip said, we need both the invention—having new inventions and innovative businesses—and the diffusion of innovation through the economy. We need to build local institutional capacity and other areas of infrastructure.

This is not just transport; we need to think about housing and broadband infrastructure, particularly in today's economy. While London has had more transport spending per head, the lived experience in London is not necessarily of having great infrastructure. Pre-COVID, congestion and bottlenecks often put off many people from London. When you look at the population statistics of people moving in and moving out of London, there has been an increasing exodus of people once they have young families. In part, this is because of congestion. There is also air pollution, the disamenity of air pollution. Transport infrastructure is important for well-functioning cities, but it is not sufficient for success.

Q135 **Julie Marson:** You mentioned agglomeration earlier. How does Government and public investment insert itself into that cycle? It is almost a chicken-and-egg situation with investment and agglomeration. What can come first? Can one come first?

Dr Valero: This is the massive question. If people knew the answer, then everyone would be doing it. From the evidence, when people look at specific cluster policies, it is very rare to find ones that have specifically set out to create clusters that have actually worked. That is why, at least in economics, you tend to look for individual policies and whether they work. Do specific ways of thinking about skills work? Do specific programmes of trying to stimulate technology adoption work? You look at those.

In conjunction, you would think that an effective policy would be to have a good evidence-based mix of all the things that matter and adapt over time as we learn what works and what does not.

Julie Marson: I do not know whether anyone else wants to come in on that, because I find that quite interesting.

Dr Munford: I did not want to come in specifically on that. This is more to the transport infrastructure point from before. I completely agree with what Anna has said. At an individual level, we know that if people's commute to work decreases due to external factors such as better or quicker transport, their mental health improves and their productivity measured in terms of wages improves as well. If more investment in public transport leads to quicker commutes, from what we know up to now we can assume that their mental health will improve and their productivity at work will improve. While transport is not the only answer, it can help people's health and economic outcomes, so there are some benefits that we know about better access to quicker and more efficient transport.

Q136 **Julie Marson:** I will turn to Professor McCann and ask about housing policy. How could Government policy in housing be changed to work better for the north?

Professor McCann: One of the things we need is more flexibility about language policy. There is a combination of factors here. We do not have any planning strategy, particularly. We do not have a land-use planning system such as countries like Germany, the Netherlands or the Nordic countries have. It is very hard for us to articulate or orchestrate anything over the medium or long term anyway. Everything is dominated by development control, which tends to be very ad hoc.

At the same time, we have centralised rules in terms of our land use management or land use rules or regulations; I will not use the term "land use planning". It seems to me that this is part of the governance devolution agenda. In response to Harriet's question, this is not a single thing. Part of that broad governance thing should be the opportunity to have more flexibility at a local level so that localised solutions can be found regarding land use. The heterogeneity in the land market in the UK is absolutely enormous. You cannot look at a model of what goes on in central London and infer anything about what is going on in Glasgow, Liverpool or Hereford. It does not work like that. Having much more discretion around local land use would be very important, as long as it is done in a planned manner.

I worked in the Netherlands for a long time, and I have worked in Japan. This is how these countries work. They have proper planning systems that bring all the evidence and the discussions together, but they also have a lot more flexibility at the local level to try to find solutions for the challenges they are facing. Part of the land-use story and the integration of proper planning would also be part of a really holistic approach to devolution. As I say, it is one element amongst many. Of itself, it is not going to solve these problems.

Q137 **Alison Thewliss:** I would like to ask a little bit about the effect of regional authorities and devolution around coronavirus. First of all, does the Mayor of Greater Manchester being shown on his phone live on television that his region is being put into tier-3 lockdown epitomise the weaknesses of devolution in the UK?

Dr Valero: This whole experience has exposed a lot of the strains in the devolution system. As Philip said, it is not particularly devolved compared to other countries. It is an area where there are so many differences between different areas. Many people have not particularly understood these differences, and now that they matter so much in terms of dealing with a public-health emergency, they have been exposed. We have certainly seen that there could have been better communications between central Government and local governments or the devolved Administrations throughout this.

While local areas should certainly have more local control in terms of both COVID response and economic growth and industrial strategies, there is also merit to having some shared frameworks across the UK on which the relevant leaders agree with the Government. That can create much more effectiveness when we look at the population, at us. We will understand and be able to comprehend: "Okay, our region is going into this and we understand why". If the local leaders understand why, they can then communicate that and improve local buy-in.

The experience of all of us over this time has been confusion. You see announcements at different times from different administrations saying different things. Sometimes in your mind you cannot remember if the rule of six includes children or not. Was it Scotland where it does not include them? It has exposed those weaknesses. With a more streamlined, co-ordinated and better communicated system, we could have achieved more success in dealing with coronavirus. Certainly, in dealing with productivity, economic growth and levelling up, we need that as well.

Professor McCann: I agree entirely with Anna. I am not a health expert at all, but, to me, watching what has happened reflects a more general problem the UK faces in pretty much every area of economic development, economic growth and economic management.

If you take a country where all parts of the country, as I referred to earlier, are sort of the same—countries like the Netherlands, Finland and New Zealand, and also very big countries like Japan and, to a large extent, Germany—if you have a policy, whether it is in education, aerospace, skills training or innovation, whatever policy you come up with, because the country as a whole sort of looks fairly similar, if it works in region A it is likely to work in a fairly similar manner in regions B, C and D, because all the parts of the country are quite similar to each other.

The problem in the UK is that our country is so incredibly heterogeneously internally that if you have a national policy for anything—this is not just about coronavirus; it is a more general problem that covers areas such as skills training—whatever you roll out nationally, from my perspective, the chance of it working anywhere is very small, because everywhere internally is so different. Nothing looks like the average; there is nothing that is representative of most places. Coronavirus, in a sense, reflects that challenge: we do not have a governance system that is designed to deal with heterogeneity inside the country.

It is a more general class of problem. So many of the productivity problems of the last 35 or 40 years go back to this basic problem. How to step forward and change that is also extraordinarily complicated. That is why my view is that we have to step carefully, but we need some sort of

independent advisory panel to reflect on these things. The dangers of getting it wrong are also very big.

Q138 **Alison Thewliss:** Would it make sense to devolve more financial powers rather than just responsibilities?

Professor McCann: Yes, because otherwise it is not devolution. It is just centralised management, which is decentralisation. That is not devolution.

Dr Munford: I completely agree with what both Anna and Philip have said. Better communication would have made some of the problems we have seen avoidable. On the face of it, pre-existing inequalities mean a national one-size-fits-all policy probably will not work. We need some regional control, and devolution is the best vehicle to allow that to happen, but we need central, regional and local governments to work closer together to enable this to happen in a more coherent way and avoid some of the ambiguity and inconsistencies that Anna has mentioned. Different messages from different bodies such as local governments and national Governments are just really contradictory; they really dilute and almost nullify the public health message that is key to the whole coronavirus pandemic we find ourselves in at the moment.

Q139 **Alison Thewliss:** Is there anything particular that you feel the English regions could learn from the devolution experience in Scotland, Wales and Northern Ireland?

Professor McCann: One is scale. If you look across the OECD, the optimum scale of serious devolution—this is not decentralisation; they are fundamentally different things—is between about 3 million and 5 million. This is the case for multiple countries, including small countries like Belgium. Why is that important? Having an ultra-centralised system maximises the degrees of separation between everybody, because the Government are too far away from local citizens and stakeholders, so people do not come forward with ideas or suggestions; they are not willing to engage. A lot of people are simply disincentivised, so the centre does not learn from the local.

In terms of devolved societies, Scotland would be a case in point. This is not just the Scottish Parliament but, long predating that, goes back to the Scottish Office period. The decision-making in Scotland is sufficiently close to civil society groups, businesses and business organisations that people are incentivised to come forward with suggestions, ideas and recommendations, to get around the table, because they know they have a pretty good chance of getting a hearing. What happens is the governance system learns from the day-to-day experience of citizens, and it works in both cases. This is why small countries often work, like the Netherlands or New Zealand, because they are small enough to do it. Large countries, such as Germany or Canada, solve the problem through a federal system. Most of the engagement is at that level.

The difficulty in the UK is that the steps towards devolution we have made within England are still very small by OECD standards. They are about the scale you would expect from countries like Austria. We are still doing this at a very small scale. They are very small in terms of the money involved; the powers are tiny; the geographical scale is very small. Why is that important? It is important because, as Anna said earlier, you cannot spread things too thinly and you also do not want to fragment things. If you make a policy, it has to have a remit, a polity or an area that is big enough such that, if it is a well-designed policy, it has a chance of working. If you always go local, local, local, you just end up fragmenting everything and you never get any growth-scale effects.

Devolution within England is still at a level that is too small. It is getting there in terms of the functional urban areas of Greater Manchester or the West Midlands, for example. This starts to make sure, but it also does not deal with the point about the outer areas, as Harriet mentioned—the outer towns that link in. We have not got there yet. It is more possible at the scales of between 3 million and 5 million, which is generally the OECD-wide experience.

Q140 **Alison Thewliss:** How would you propose that England gets from here to there?

Professor McCann: You have to start with a genuinely independent commission. It cannot be political in the sense of being party-political. It is far too complicated. We can do it, because other countries have done it. If you look at the UK, the city regions of the UK were built by the local communities. They were built by local industrialists and local philanthropists. They were building not just the businesses but the art galleries, planning the parks, the sewerage systems, the road systems and the training colleges, and founding the universities. We have gone away from that, but we have to move back. To devolve, when everything is relatively equal, is relatively easy—it is not easy—in comparison to trying to devolve from a situation of extreme imbalances. That is much harder to do.

Dr Valero: I agree with what Philip said. The whole devolution agenda has somehow stalled recently. We have now seen that there are lots of issues that need to be dealt with urgently. An independent commission sounds like a good plan. Having some kind of roadmap for how we are going to proceed would also be good to provide some certainty about the processes and the direction of travel.

Chair: Thank you very much to our panel. That brings us to the end of this session. Can I thank you very much indeed? You have given us some very informative answers to our questions in this part of the session. Thank you for bearing with us during the Division we had, which has delayed our finish a little bit. It has been worth spending the time with you.

We have discussed two huge issues today, both coronavirus and

lockdowns and now regional imbalances. It is fair to say that both are extremely complex; both have no easy or obvious solutions. There are a number of things that have to be done to get both areas right, but there is a big prize in both cases if we can answer the kinds of questions we have been posing today, certainly around imbalances, productivity, better health outcomes, better economic performance and wellbeing and so on.

There is a big difference, of course. COVID is a fairly recent phenomenon, whereas the problem we are discussing today has been around at least since the beginning of the last century. It is important that we keep at it. It is important that you keep doing the very good work you are doing in this area. We would like you to keep in touch with the Committee. It is not just a question of appearing before us. Where you have ideas and thoughts, please contact us and pass those through to us. Once again, thank you very much indeed for your contribution today. It has been hugely appreciated.