



HOUSE OF LORDS

Science and Technology Committee

Corrected oral evidence: Financing and scaling UK science and technology: innovation, investment, industry

Tuesday 20 May 2025

10.10 am

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Members present: Lord Mair (The Chair); Lord Berkeley; Lord Borwick; Lord Drayson; Lord Lucas; Baroness Neuberger; Baroness Neville-Jones; Baroness Northover; Lord Ranger of Northwood; Lord Stern of Brentwood; Viscount Stansgate; Baroness Walmsley; Baroness Young of Old Scone.

Evidence Session No. 7

Heard in Public

Questions 75 – 88

Witness

I: Sir John Kingman.

USE OF THE TRANSCRIPT

1. This is a corrected transcript of evidence taken in public and webcast on www.parliamentlive.tv.

Examination of witness

Sir John Kingman.

Q75 The Chair: Good morning and welcome to this Science and Technology Select Committee. We are conducting an investigation into the financing and scaling of UK science and technology. We are pleased to have as our witness Sir John Kingman, chair of Legal & General, chair of Barclays UK, former chair of UKRI and a senior Treasury official. Sir John, thank you very much for joining us. As you know, we are conducting this inquiry into the financing and scaling of UK science and technology with a familiar motivation: science and technology's contribution to productivity and growth. You led on government policy in this area for a long time, specifically in science and technology policy and areas such as universities and industrial strategy. What measures would you recommend the Government pursue? In your view, what areas need urgent attention?

Sir John Kingman: Thank you for having me here today. I should say first that I am a little out of date. As you say, I was responsible for this area of policy for a very long time in the Treasury but I left the Treasury in 2016, which is now nearly a decade ago. I was then the first chair of UKRI until 2021, which is four years ago. So please accept that caveat.

Starting with the really big picture first, there are three things I will highlight that I would love to see. The first and most immediate is the imminent spending review outcome, which will be of critical importance to everything you are talking about, particularly anything that has links to the publicly funded science base or public support for innovation.

The second is that I would love to see UKRI being able to deploy its funding in a broader variety of ways than it currently does. So at the moment you will know that UKRI rightly spends a great deal of money on core academic research, which it does through core processes of peer review, which have their strengths and weaknesses. It also does quite a lot through Innovate UK to support some of the areas that you are interested in in your inquiry. However, there is a big area in the middle, particularly in relation to the potential to deploy public support in a way that crowds in private investment in R&D. We started off down that road when UKRI was first created—we persuaded Theresa May to invest an additional £2 billion a year in that sort of area—but it all came to a juddering halt when it hit the countervailing force of Dominic Cummings, who was not keen on any of that. This is an area where, if resources are available, there is a lot that could be done. I think Patrick Vallance is interested in that, so we could perhaps talk about that.

The third area, which I am afraid I think is relevant to your inquiry, is that I am very concerned about the condition of the British university system. The funding system is now under extraordinary strain—effectively, I do not think it is working any longer—and there is a need for a much more first-principles look at how the sector can be taken forward in a sustainable way for the future. I am concerned that a series of

piecemeal interventions are making the situation worse, and there is a need to step back. Then there are things more relevant to scale-up and financing that I am sure we will come on to.

The Chair: Before we go on to further questions, you will know that one area this committee is really concerned with—in fact we recently wrote a letter to the Government about this—is the attraction of scientists and engineers, particularly the global talent that may well be being displaced by the current US Administration’s attitude to science and technology. Last week the Government published an immigration White Paper. What is your view of the need to attract global talent?

Sir John Kingman: This could be a moment of quite exceptional opportunity for the UK. What is playing out in the United States is a tragedy. I think we will see an extraordinary migration of talented people from academic science and from wider technology based-enterprises, including companies in the US—for example, in life sciences—and a lot of countries are thinking proactively about what they can do to attract that mobile talent. I think there are some announcements this week in relation to various funding schemes designed to help here, from the Government and from the Royal Society and others, which is fantastic, but that needs to be consistent with the scale of the opportunity.

That brings us, as you rightly say, to whether we will actually let people in. I do not pretend to be a specialist on the fine detail of the visa regime; at one point I was, but I am not any longer. I have read the White Paper, which has a section about there being some people in the world who we might want to come to this country to live and work, but that section is very short and rather grudging. My own experience of the Home Office is that their idea of the sort of talent we might want begins with Nobel prize winners. I am all for attracting Nobel prize winners, but by definition they did their best work 30 years ago. It is the young people and indeed their families that you want.

It is quite understandable that the Government are under enormous political pressure in relation to migration, but my perspective is that public attitudes to different kinds of migrants are different, and I would hope the Government could find a way in which to articulate a positive vision. They should do so really quickly because this opportunity is right there, right now, and we do not have time to dither.

Q76 **Lord Berkeley:** Sir John, your last remarks about immigration were wonderful, and we must hope we can follow them up. You know what our inquiry is about, and I will ask you how the research councils work with Innovate UK. They have two new CEOs now. You have given some helpful advice since you stepped down, but what advice would you give to the two new CEOs now about how they work together and what they are trying to achieve?

Sir John Kingman: My own experience was that there was, understandably, great debate about whether it was right to bring together the research councils and Innovate. I was unequivocally in

favour of bringing them together and, while I was involved in UKRI, I saw a lot of positive things flowing from that. The research councils are wonderful institutions but, not surprisingly, they are extremely academic. Innovate's mission and role helped to broaden out the work of the research councils and caused them to think differently.

To go back to the point I was trying to make about the scope for funding in a completely different way than we have traditionally, when we started off down that road in the Theresa May era, we set up a series of funding programmes all of which were collaborations between the research councils and Innovate UK. That was incredibly valuable, because the concept was bringing together the best of British science potential with an ability to reach out to a set of companies and judge whether there was commercial potential there. I thought that this was very exciting. We could return to that. I would be very surprised if Ian Chapman, whom I know a little, the new head of UKRI, does not want to explore that, but he will need the money to do it.

Lord Berkeley: That is helpful. In terms of R&D, how much do we learn from the policies that are being pursued by other countries? We can leave the US out for the moment. It is important that we learn from what the other countries do in their R&D and whether they have measurable objectives that we could learn from. What do you think?

Sir John Kingman: I totally agree. When I left UKRI, I said that too much of British science and innovation policy over a long period had been based on the preferences of individuals in positions of power rather than on clear evidence of what works internationally.

Lord Berkeley: Would a gut-feel-based—

Sir John Kingman: Sorry to interrupt, but Stian Westlake, newish head of ESRC, is now empowered to have a team in UKRI that works on this. I have talked to him about it. He is trying to do the right thing. We created UKRI to think strategically about these sorts of things in a way that had not previously happened.

The Chair: Following on from Lord Berkeley's question, are there any R&D policies pursued by other countries that have struck you as being particularly worthwhile and relevant?

Sir John Kingman: One gets quite quickly into other countries that have a longer history of pursuing industrial strategy. We might come on to what a good industrial strategy might be, but for the UK it most certainly should make use of the extraordinary scientific assets that we have here. The US has lots of lots of things that we can learn from, including the long-established SBIR programme, which this country has several times tried and failed to emulate. I think that you have talked to previous witnesses about that. Really interesting things have happened over many years in, for example, Singapore. There is plenty to learn from. In the UK, we tend to start from what we have got and make small incremental changes, which does not help.

Q77 Baroness Walmsley: Can I take you back to measurable objectives? As you know, the NAO has been quite critical of UKRI this week in terms of not having any. DSIT will publish some metrics and objectives this summer. To an organisation with a long-term view, such as UKRI, what should a good set of measurable objectives look like?

Sir John Kingman: I do not have a set of objectives up my sleeve. It is always a good idea for organisations to know what they are trying to achieve. That is sometimes capturable in numeric objectives and sometimes not. UK science still punches extraordinarily above its weight on citations. In any measure of the pure quality of academic research, we score astonishingly well. Plainly, we have never managed to create a set of science-based companies, industries or economic activity around that, yet we ought to be able to do so. That should be at the heart of what UKRI tries to do.

UKRI should also have a very strong eye to the quality of talent in the UK. So much scientific talent is nurtured by institutions that are funded by UKRI. That should take it into a set of questions about how it can influence things that it does not control, including in schools, the visa issues, things that matter to people, things that UKRI cannot directly control but has a position to go out and advocate for.

Baroness Walmsley: Cross-government working, then?

Sir John Kingman: Yes.

Baroness Young of Old Scone: Would you like them to have a metascience objective?

Sir John Kingman: I would like UKRI to have a small team that is interested in what good science and innovation policy is. That is what Stian has been empowered to create, which is an extremely good thing.

Q78 Baroness Young of Old Scone: Turning to your very public criticism of the bureaucracy and controls that existed, and presumably still exist, around UKRI, you were uniquely placed to influence government around you, having been part of that.

Sir John Kingman: It did not feel like that, but keep going.

Baroness Young of Old Scone: Exactly, so what is the pushback? What is the problem? What should we do to remedy it?

Sir John Kingman: I shall give you an example. The Laboratory of Molecular Biology in Cambridge, a unit of the MRC, has produced something like 16 Nobel prizes. It is a fairly small organisation of astonishing distinction which is sufficiently trusted by the MRC to have a very unusual funding arrangement. It has a five-year settlement from the MRC, so it does not have to bid for individual project funds, and the MRC trust it to get on with it.

However, because it is part of the MRC, lots of individual pay decisions of mid-level scientists must go to a committee of Whitehall officials for

approval. I have no idea why this is thought to be a good idea. If the LMB was part of the University of Cambridge, which is next door, none of that would be the case. A lot of bindweed has grown up around the system, as with many things to do with Whitehall, that could and should be ripped out because it is not making the world a better place. Organisations should be held to account for delivery, but micromanagement by junior officials of things that they do not know anything about has never seemed to me to be a hugely good idea.

This was a particularly pressing issue in my time. Overlaid on that was a whole set of political decisions being made about scientific appointments, which felt to me extremely uncomfortable. You had this whole business of appointments, for example, to the research councils, being subjected to Whitehall special advisers going through their tweets to see if they had ever said anything negative about Brexit. That was never appropriate.

The Chair: How practical is it to rip out the bindweed?

Sir John Kingman: It is really practical. You can change the frameworks within which organisations operate. Whitehall has all sorts of different frameworks for different kinds of organisation. It has all sorts of different pay arrangements for different kinds of organisation. It is a choice for the official machine.

Baroness Young of Old Scone: It is a bit of a deadweight cost.

Sir John Kingman: It slows everything down.

Baroness Young of Old Scone: When you pushed back, what response did you get?

Sir John Kingman: To give you a flavour of the slowing down, in my time the role of head of Innovate UK was vacant for three years. It was not unusual for research council head roles to be vacant for two years. This is not a sensible way to run a chip shop.

Baroness Young of Old Scone: What sort of response did you get when you pushed back?

Sir John Kingman: It is hard work. Part of the key to it is having determined Ministers who are willing to say, "We should change the way we do this". In my time, because there was a lot of stuff happening politically, the Government kept changing and Ministers kept changing. I look back earlier in my career to when, for example, David Sainsbury was Science Minister for probably about a decade. As he will tell you, he sometimes ended up briefing his officials on things he knew more about. The great thing about that was that he really knew the space and was able to pursue agendas that he thought right and see them through. That was hard with Ministers changing a lot.

Q79 **Lord Stern of Brentford:** Thank you very much for coming, John. We have both been in the Treasury—you rather longer than me, and we know it has fine, talented people but not that many of them. How well

equipped is it to analyse and answer the really big strategic questions in this area around the scale of R&D, public funding and private funding, and how that takes place and intersects, which you have emphasised strongly, with public funding? On the sectoral stories where we are primarily a service economy—health, education, financial services, transport, retail, in addition to science, energy engineering, life sciences and so on—there are big strategic questions about R&D funding. There are the institutional questions that you have raised on universities and research institutes. We are doing real damage to them. I am a university professor and there is the damage that you refer to. Also, on the mechanics of the funding, there are big strategic questions, which are hard. We have some analyses. Jonathan Haskel and Frontier Economics show powerful rates of return to public R&D—40% and upwards, often even for those with fairly short-run time horizons. We know that the dynamics, the learning by doing, and the systemic effects cause returns beyond just the UK and to the world as a whole. So those are the big questions. Have we really got the analytical techniques and firepower in the Treasury to take on the big questions that we are struggling with?

Sir John Kingman: That is a fair set of questions. Possibly we disagree; I do not know. First, the Treasury is twice the size it was when I left. So is a lot bigger. It is very important not to end up in a world where the Treasury thinks it can do everything. It cannot and should not. It is a finance and economics ministry and should focus on those. I underline both. The most important thing the Treasury does in relation to science and technology policy is to decide whether to invest in it and, if so, how. I do not think it should be attempting to run every aspect of the system.

I certainly would not trust the Treasury to attempt to construct an industrial policy for individual sectors. I do not think the Treasury has the capability to do that. So if you take, for example, UKRI, which has a budget of about £8 billion a year, the Treasury should be equipped to advise Ministers on whether that is a good use of public money. It should be equipped to challenge UKRI on whether it is deploying its resources in the most imaginative way. I do not believe that you need an enormous team of Treasury officials to do that, and there is a danger. Remember, you have the Treasury, the department and UKRI. Already you have three bureaucracies. It is tempting for the Treasury to say, "Oh, that is a really interesting subject. Let's do lots of work on that." There needs to be a certain self-denying ordinance. The Treasury can and should try to add value but it cannot do everything.

Lord Stern of Brentford: That must be right. But at the same time, it is the place where departmental allocations are examined. That question applies also to R&D. It can give a remit to organisations like UKRI but it will also need to be in some way involved in that resource allocation.

Sir John Kingman: I completely agree.

Lord Stern of Brentford: The Green Book obviously cannot handle that, as such.

Sir John Kingman: If it is persuaded that investing in this area is good for the economy, which I hope and believe it should be—it certainly was in my time—then it should be equipped to say, “Are we doing all the things across government, including in relation to the tax system?”, for which it is directly responsible. UKRI, through the science department, is important but you have big programmes elsewhere. You have the defence R&D programme and, for example, environmental R&D. Only the Treasury has an overview of that. That is an area where the Treasury, for sure, can and should try to make sure there is a coherent push right across all the various levers available. But, in my experience, small can be better.

Lord Stern of Brentford: My question was not so much about size but about those big strategic decisions, and whether it has the right kind of policy-analysis approaches.

Sir John Kingman: It was an accident of history that you had two Chancellors of the Exchequer who were interested and sympathetic to this whole agenda. One was Gordon Brown; the other was George Osborne. The Chancellors were interested and the Treasury was then able to support that in reading the analysis, the evidence and so on. It is quite hard, particularly at a time when money is tight, for Treasury officials to batter on the door of the Chancellor and say, “You ought to be interested in this area. You ought to eat your greens.” I worry more about whether Ministers are up for prioritising this area than I do about the analytical capacity to support that.

Lord Stern of Brentford: I take that point but many Ministers—you saw more than I did but we both saw Ministers—take seriously the analysis of senior civil servants and the people who support them. You said the Treasury is persuadable but could it marshal that evidence?

Sir John Kingman: It absolutely should. I fully agree.

Q80 **Baroness Northover:** I want to ask you about the role of these, negative or positive, and how we potentially move on from where we are. What would you recommend in terms of rebalancing R&D funding, possibly away from tax credits and towards more targeted interventions in support of the industrial strategy that we have coming down the track?

Sir John Kingman: That is a really good question because R&D tax credits are a big fiscal cost. They should be subjected to exactly the same degree of rigour and scrutiny as any form of government spending. That said, I see you have had witnesses who said that there is this enormous R&D tax credit, and we could take that away and give it public support. I would be a bit careful about that, mainly because essentially every country in the developed world has an R&D tax credit now. We were quite late to introduce them in the UK.

Funnily enough, they were introduced following a long campaign by, of all people, the IFS, which is usually very against tax breaks. For exactly the same reasons that Nick was just alluding to, there was a good case for

them because of the externalities that they are designed to capture. Our tax credits in the UK are not particularly competitive internationally so, for a country that wants to attract and nurture a lot of science-based industry, severely to cut back or to abolish tax credits seems to me to be a very high-risk move that we should approach with great care.

That said, there appears to be evidence of abuse of the R&D tax credit regime, and HMRC should grip that hard. It is good at that, on the whole, so it should jolly well do that. Also, if you have an R&D tax credit, there is always going to be an interesting debate at the margin about which activities are eligible and which not. Historically, when the R&D tax credit was first introduced, it was most easily used for classic R&D in pharmaceuticals and manufacturing but was less usable in the more service areas of technology. Now, there have been a series of changes over the years and I am way out of date on this so I cannot give you detail, and whether that line is currently in the right place I could not tell you; that is probably a fair debate for informed people to have. However, I encourage you to be really careful about the notion that there is a huge thing that you can easily raid and it would be great for scaling up and financing the sorts of businesses you are caring about in this inquiry, because for the UK to make itself an outlier on the downside internationally would be a bit crazy.

Baroness Northover: So should we be looking elsewhere?

Sir John Kingman: There may be scope at the margin. As I say, if there is clear evidence of abuse then that should be tightened up. That may deliver some resources, although whether you can then take those resources and deploy them in public spending becomes a slightly tricky Treasury thing. Anyway, I am all for an R&D tax credit that is effectively targeted on what you are trying to achieve, and I am not all for getting rid of it.

Baroness Northover: And what you are seeking to address elsewhere—slow processes and all sorts of micromanaging, and then small results from that anyway—are the kind of things that you feel should be addressed.

Sir John Kingman: Yes, but having a properly funded science base and making sure the university system does not accidentally fall over are the things that really worry me most.

Baroness Walmsley: When we think about investment in R&D in science and technology in the national interest, we are talking about trying to embed long-term thinking and objectives, but there are also benefits that come in the relatively short term. Do you think the Treasury has the appropriate expertise to get the balance right between the shortish-term benefits and the long-term benefits in making decisions about investment?

Sir John Kingman: This slightly goes back to my answers to Lord Stern. I do not think the Treasury should be anywhere near individual decisions

about what research to fund because it does not remotely have the capability to do it. Honestly, I would also be nervous about politicians getting near those choices. Politicians have been kept away from those choices for a long time for good reason, partly because politicians change the whole time. It is fair game for the Treasury to be asking intelligent questions of the public funding bodies about the kind of work they are funding and whether they are doing that in the best way, but you do not want Treasury officials, who are generalists—hopefully, intelligent and well-informed generalists, but generalists—anywhere near those choices.

Q81 Lord Drayson: I would like to turn to the subject of scale-up capital, pension funds and Mansion House reforms, and your current roles as chair of Legal & General and Barclays are very relevant to this. We have repeatedly heard that the lack of scale-up capital for science and technology companies is a serious and worsening problem, leading to a number leaving the UK. We are interested in the reasons for big institutional investors choosing to invest UK wealth overseas rather than in the UK, and we would like your insights on why they do it. What are the incentive structures for pension funds that have led them from a place where 40% was invested here to single-digit percentages? In the debate that is taking place now, why is there such strong pushback from the sector to implementing the Mansion House reforms, which have been talked about for 18 months but have so far had zero effect?

Sir John Kingman: I am afraid the answer is a bit intricate, so bear with me. We are talking here about pension funds, which are our customers. There is a pool of defined-benefit money that is essentially all now invested in credit, not in equities. Those schemes are closed, their liabilities are known and fixed, and pension funds want to know they are going to meet their liabilities. That ship has sailed. Those schemes are closed, and I think it is unimaginable that those schemes will go back into equities because the companies that stand behind them do not want the volatility that would result from that.

By the way, some of that credit is good for the economy, to be clear. For example, L&G makes investments around the country in things that I think this inquiry would care about. The Life and Mind Building in Oxford is about to open; the L&G financing of that building is a loan, not equity, but it is a great thing for British science that we are doing it.

The much more interesting potential is all around defined-contribution money, which is a large and fast-growing pool of money, and how we can get more of that particularly into growth companies in this country. That is an agenda that the last Government and this Government have been absolutely right to pursue. Legal & General has been saying for years that for our defined-contribution customers not to have money in those sorts of assets is not good. We wanted the Government to make it possible for us to put some of that money into the sorts of businesses you are talking about, and we are pleased that the last Government changed the rules in a way that allowed us to do that. That was the first step of Mansion House. The last Government encouraged firms like mine to do that. We were the first in the market and that was great for us. We have the

assets, we are absolutely up for it and, as it happens, a lot of the assets that we will deploy in relation to that fund will be in the UK, because those are the assets that we have easiest access to.

The issue now is whether we can get our pension fund clients to take up those funds. I am afraid that some of our clients are enthusiastic but quite a lot are quite conservative. I would like to see the Government work with us to encourage our pension fund clients to use the funds that we have created, and we are ready to deploy them. The phrase I use is that we can and do take our clients to water but we cannot make them drink.

Lord Drayson: You have helpfully explained the issue of conservatism. How muscular do you think the Government need to be in addressing it? From the perspective of the companies this is a really serious here-and-now problem, but we are not seeing enough progress quickly enough.

Sir John Kingman: There is a debate about that, and it is a perfectly reasonable debate to have. To be clear, I think the fund managers, certainly at Legal & General, will operate quite happily under whatever regime the Government decide should be the regime. We do not really think that the Government should take the step of mandating our pension fund clients about how they invest their money. That is quite a tricky path for the Government to tread, but it is something the Government can choose to do. They are the Government and they can make a decision. We are seeing increased take-up. I would like to see the Government help us encourage our clients to rethink their approach to how their members' pensions are invested. We are totally up for that, and I think there is much more that could be done there. We do not believe in mandation, but that is a debate that is playing out.

Lord Drayson: What then alongside, or as an alternative to, mandation, would have an effect? For example, do you believe that the UK pension funds have the expertise to make good investment decisions?

Sir John Kingman: They do not need the expertise. We are there to help them with the expertise; that is the service that we provide. Our pension fund clients make choices about asset allocation; we sometimes help them with that, but they expect us to manage that money well. If they say, "We would like you to put X% of members' pensions into private assets", it is our job to manage that money well. That is what we are there for. We are completely equipped to do that, as are a number of our competitors.

I do not think it is an expertise problem; I think it is a nervousness about risk. It does cost a bit more to manage private assets than plain vanilla equities or bonds, and some pension fund trustees do not want to pay that cost. We take the view, first, that it is a sensible diversification, which is good for members and, secondly, that there is clear evidence of additional returns which justify the additional cost. I do not think it is a good argument, but it is an argument that is in some of our customers' minds.

Lord Drayson: So, to offset risk, improve the return. What, therefore, could the Government constructively do to help create an environment where the returns would change that aversion to risk?

Sir John Kingman: There is really good evidence that the returns are good. There is good evidence on returns from investment in illiquid assets in the UK and internationally and, over and above that, there is a diversification benefit, so I really do not think that is the problem. You then take me into the territory of all sorts of things that the Government could do to encourage growth, which get us into universities, planning, tax, visas, whatever.

Lord Drayson: You are a fantastic witness to ask about this specific problem relating to the decline in the London stock market in this space and the availability of scale-up capital to invest in UK science and technology equities. I hear what you are saying about not being particularly happy about mandation. You have identified the problem of too much conservatism and too much concern about risk. So what can be done to fix this? There is an urgent need to fix it.

Sir John Kingman: I think the Government should do exactly what they are doing, except that I think we could do with more help with the key decision-takers: the pension fund clients who are making decisions about where they want their members' money to be invested. The pipes used not to exist because DC pensions could not be invested in these sorts of assets. I give credit to the last Government for changing that, and for changing the rules that made it possible for us to create, for the first time, the ability to do that. That is great. But I agree with you that the volumes so far are disappointing. So what we need to do is work on the decision-takers. Clearly, the Government could forget that and just instruct the decision-takers, but there are dangers in Governments deciding how people's pensions are invested.

Lord Drayson: So what works in influencing these decision-takers?

Sir John Kingman: The Government should get the big employers around the table and have this debate with them. We would be delighted to participate. By the way, I am not saying to you anything that I have not said to the Pensions Minister and others. They fixed the problem of the fund managers having the ability to do it. What we now have to fix is the client demand. That is my view.

The Chair: And that is a matter of persuasion around a table.

Sir John Kingman: I would personally rather have a serious go at persuasion than get into the business of the Government dictating how pension money is invested; but that is plainly something on which reasonable people could differ.

Baroness Neuberger: And they obviously do differ, so, supposing that persuasion does not work, would you then be in favour of mandating?

Sir John Kingman: I am the wrong person to ask. As I said, Legal & General will operate in whatever environment the Government choose. It is not for Legal & General to decide whether the Government should compel people. I think that is a matter for elected politicians. If you want our opinion, our opinion is that our clients should be free to decide how to spend or invest their money. I honestly do not think we should be the decision-taker.

Lord Stern of Brentford: Are you confident that the evidence can be marshalled to do that persuading?

Sir John Kingman: I am. If it could not be, we should be asking ourselves whether it is the right thing to do with ordinary people's money. To be clear, we have put our money where our mouth is. We have created this scheme. We have we have sold it to numerous clients. We are on the hook for delivering it.

Lord Drayson: I want to follow up with almost a cultural question, if I may. In your evidence today, and very often, we hear people talking about excellence in the UK science base and the confidence we have in our UK scientists. We do not very often hear people talking about excellence in our large science and technology companies.

Sir John Kingman: Agreed, although with some exceptions; AstraZeneca is pretty impressive.

Lord Drayson: My cultural question is this: do you see in the City a belief that the UK can create in the near future, not the AstraZenecas and the GSKs, but world-class science and technology companies located in the UK, funded in the UK, listed in the UK, built on UK science. Does that belief exist in the City?

Sir John Kingman: I think that is a very fair question, and not one that is easily solved. You are talking about a very complicated ecology of the analysts and asset allocators and all the rest of it, but it is a fair question.

Plainly, the UK has created some very exciting companies, such as, in living memory, DeepMind. They are not listed companies. I do not know whether it would be possible.

I chair a listed company. I think there is much more investing expertise in this space in the United States than there is in the UK; indeed, it is only really in the United States. The US has been doing this for a long time and, critically, people have made an enormous amount of money doing it. That has created incentives for people to do it both in the private space and in listed markets. So I think your question is a fair one, and I do not have a good answer to it.

Q82 **Lord Ranger of Northwood:** Sir John, we have focused in on what is happening in our markets, but how do we compete with those international markets such as the US? We are asking the question about what the Government can do, but what can we learn from those successful markets where the capital is being made available? Is there

something we can adopt? Are there some quick wins that we can take from this?

Sir John Kingman: No, I do not think there are. Inquiries such as the ones you are holding have been taking place for a very long time. There really is not a magic answer that I can easily reach for.

One thing we can and should do is be very open to those very sophisticated investors investing in this country. I know that it makes people uneasy, but I think it is a clear net positive to have the world's most sophisticated technology investors investing in businesses in this country. It is possible that some of them may move; some of them do move, but a lot of them do not. We should be blind to nationality of ownership, subject to security and so on, but I do not think there is some magic bullet.

The US has been doing this for a very long time. It has been uniquely successful at it, and that has created a virtuous cycle that you cannot magically replicate. You have to slog away at these annoying, difficult, hard-work things like persuading pension fund trustees to be open to investing in this space.

Lord Ranger of Northwood: I want to ask a bit more about the US culture. A lot of the time, the discussion centres on the appetite for risk and for entrepreneurship, and we have been touching on universities, Governments and models like tax credits. Do you think we need to look at all these things through a lens of how much risk and how we change that risk?

Sir John Kingman: Yes. By the way, tax is relevant here. The US has a very favourable tax environment for entrepreneurship and venture capital investing. We used to have. One of the best things that Gordon Brown did on this front was to operate essentially a 10% capital gains tax rate for this sort of investment. The Treasury hated it and HMRC hated it even more. I was disappointed to see that, in the first Budget of this Government, the capital gains tax rate was raised dramatically. That is an unfortunate step, although obviously I understand the fiscal pressures. What Gordon Brown did on that was very brave from a political point of view and unequivocally positive.

Baroness Walmsley: To go back to the persuasion point, if all this persuasion fails then do you think there is a role for either voluntary or forced amalgamation of some of these funds, so that you create a bigger pool of money and the percentage risk of any particular investment then becomes lower? Some countries have done that.

Sir John Kingman: The Government are interested in that topic, and it is a good topic for them to be interested in—removing barriers to schemes and tying them together. The most obvious opportunity lies in the local government pension scheme, where the Government have cranked up the pressure to bring some of the schemes together, but they are not going as far as they could. They could just have a single scheme,

which could be like the great Canadian schemes or whatever in terms of volume of assets. There are all sorts of political issues around the local government scheme, which I understand, but, other things being equal, you are much more likely to persuade big schemes, as you say, to think about diversification in a different way. They can be equipped to be an intelligent customer in a way that small schemes cannot.

Baroness Young of Old Scone: I sat in on the debate on the announcement on the Mansion Scheme voluntary commitments last week. The one thing that I was not clear about—this may just be my ignorance but it would be useful to get your view—is whether there is a risk that some of those who are volunteering are going to gently slide into choosing the least risky part of the spectrum to invest in, particularly infrastructure investment, rather than perhaps science and technology scale-ups.

Sir John Kingman: Maybe, but that is not the big risk that concerns me. The risk that concerns me is the pace at which you can get pension funds to embrace the Mansion House proposition. The big fund managers, including ourselves, will really want to focus on the assets they know about. That will be different for different fund managers, but for all of them it will certainly include venture capital and scale-up companies—I would be very surprised if it did not. I do not believe that fund managers have any incentive to avoid risk. Fund managers are trying to produce good risk-adjusted returns. The conservatism that I observe is in the trustees of the pension schemes.

Q83 Baroness Northover: This brings us on to the industrial strategy, which you have made brief reference to thus far. Obviously we have a new industrial strategy, which will be announced or be published fairly soon, and there is a concern that it should be embedded for the long term—that comes across to us very strongly—and it should be sufficiently selective, so it does not cover absolutely everything. We would like your comments on what lessons you learned from the past and what you would advocate in terms of how the strategy would drive growth and how it would support science and technology companies to scale up. In other words, what does it need, and what have we learned from the previous ones?

Sir John Kingman: I am a member of the Industrial Strategy Advisory Council so I should not comment on anything that I have seen as part of that work, but I can answer your question. What does a good industrial strategy look like and what can we learn from others that have successfully operated industrial strategies? What I think of as a good industrial strategy—some of my Treasury colleagues have a bit of a hang-up about this concept but I do not—is that it is a good thing for the Government and a sector to work together to have a coherent view of what an exciting future for that sector could look like, although that is completely meaningless unless the sector thinks that and buys into it. However, that immediately creates a set of specific questions about what, if anything, a Government can do to make that successful future more probable rather than less. Almost certainly, for any given sector you get a set of things that are very specific to that sector about bits of regulation

or whatever, but then when you do it in practice you immediately find that there are some issues that are very cross-cutting—skills, for example.

A good industrial strategy would present to the world a set of powerful visions for each sector that show the way to a plausible future of higher growth, higher productivity and so on, and say, “What can we do that makes that more rather than less probable?” As I say, some will be specific and some will be general. So if I were saying what we should be trying to do in having an industrial strategy, that would be my definition, and a number of countries have demonstrably done this.

Funnily enough—I made this observation once in a speech—the Treasury is supposed to have this great hang-up about industrial strategy, but look at the way that the Treasury has worked with the financial sector over a long time. I would say the Treasury has been covertly pursuing an industrial strategy for a long time, given everything the Treasury has done over many years in working with the financial sector, including the Big Bang. Most recently, and this is something that I was proud of, was everything the Treasury did with the fintech sector to ask, “What can we do to create a regulatory regime that works for disruptive business models in financial services?” To me, that is a pretty good industrial strategy.

Baroness Northover: When you say that some countries have been able to do this in a in an effective way and sustain it, which countries would you be looking to?

Sir John Kingman: Japan, Germany, Singapore—those are pretty obvious ones.

Baroness Walmsley: Some of our witnesses have suggested that there could be a greater role for public procurement in supporting innovation and indeed growth. For example, in the United States it is used as a tool—the example is DARPA. Thinking about our own UK Ministry of Defence and our defence industry, one might say that the unfortunate global situation at the moment gives an opportunity for growth in the defence industries, perhaps in particular the rather tentative agreement between the UK and the EU this week, although there is an awful lot of “We are working towards” in it. I think you get the point. Do you think our Ministry of Defence is an intelligent customer?

Sir John Kingman: That is a slightly leading question, if I may say so. Should it be an opportunity that defence spending and defence procurement will be increased? Absolutely, it is right to think in that way. Do I have a high level of confidence that that is what will happen? Honestly, no. I point to the long litany of unsuccessful procurement in the Ministry of Defence. I am sure that the Ministry of Defence is a wonderful body, but you get all the fights between the services over who gets what. You have the extreme slowness of MoD process. I would be nervous about just stuffing money into the top of that machine and hoping that it will come out in very exciting ways.

I believe that the Government are creating a new defence innovation agency, but I wonder when that will come into existence. As I understand it, it will be allocated only a small amount of money because, inevitably, there are large forces in the MoD which would like to have that money. I would be nervous. Left to my own devices, I would suggest thinking about the Kate Bingham model of procurement, as tried and tested for the vaccines. Go outside all these processes and entrust an individual. Lord Drayson knows much more about this than I do, but entrust an individual with the key choices and empower them to get on with it. However, I do not think that the MoD would be very keen on that.

Baroness Walmsley: Given the limitations of the UK market, we have a very lively defence industry in the UK. Are you suggesting that they should be selling abroad?

Sir John Kingman: I certainly think that the UK defence industry should be selling abroad. My concern is about the Government's limited ability to procure well in this space. Look at the pile of NAO reports over many years which raise legitimate questions about how the money will be spent.

Baroness Walmsley: Is it fixable in the relatively short term?

Sir John Kingman: I am not competent to answer that question.

Q84 **Baroness Northover:** Coming back on my original question, I realise that you are in a difficult situation, being on the group that is advising on the industrial strategy. What you have given me is incredibly general, so I will probe a bit more on what ought to be in an industrial strategy. Setting aside the specifics, you said that there are some cross-cutting general ones that you would be concerned about. Some of those ideas have come through in your earlier answers but, for our benefit and without undermining—

Sir John Kingman: The cross-cutting issues include skills; regulation; visas, which we have talked about; making the most of our R&D base; and issues which the Government are hard at work on regarding physical development and enabling much faster decisions on allowing businesses to build buildings. Where you try to pool things that are coming out of the sectors and think about what the cross-cutting themes, those are the main ones.

Lord Stern of Brentford: Do you include universities in industrial strategy?

Sir John Kingman: Absolutely. I would regard the universities as an industry, an export industry.

Lord Stern of Brentford: There are lots of "hear, hears" going on.

Sir John Kingman: The universities have an enormous role to play and are one of the greatest assets that we have.

Q85 Lord Drayson: I would like to follow up on the interesting comment that you made that the Treasury has effectively pursued a stealth financial sector industrial strategy since the 1980s. I completely agree with you. Can you give us some insights as to how that has managed consistently to survive changes of Governments and changes of Chancellor and how the Treasury organises internally to deliver the expertise, clarity and alignment with the financial services sector? What could the Department of Health, the Ministry of Defence and the Department for Transport learn to create a sector-specific industrial strategy which will survive the political ups and downs?

Sir John Kingman: That is a good question that deserves more thought than I have given to it. The Treasury is naturally close to the financial sector. When I joined the Treasury, it was not responsible for regulation of all the financial sector. That was largely done in the DTI, but then it moved up. However, it is naturally close to the financial sector for obvious reasons—the banking system is hugely important to the economy, and so on. Certainly, all the Chancellors that I have worked with have been interested in the financial sector and have had relationships in the financial sector. For most of my career, there was a very senior official, usually a second Permanent Secretary, part of whose job was to have a set of relationships in the financial sector. I did that job twice.

You have a natural link to the Bank of England, which as well as being the central bank is the regulator of much of the financial system. Therefore, that relationship with the Bank of England is probably closer than the relationship that any government department has with any regulator in terms of the relationship between the Chancellor and the governor, the senior officials and the senior people in the Bank.

It has changed, though, inevitably, because you had the global financial crisis in the middle. Until 2008, the Treasury did not have a lot of official resources to devote to the financial sector and the mood was very much deregulation and light touch. Then catastrophe ensued and the Treasury had to learn the lessons of everything that had gone wrong, which meant a massive re-regulation of the sector. Suddenly, hundreds and hundreds of Treasury officials were working on the financial sector.

However, throughout that there has been a basic recognition that this was an important part of the economy and that we wanted to see it flourish. Also, the industry was very well placed to lobby because of the natural relationships that exist with the Treasury.

How do you then transpose that and think about other departments? This has got much better. Certainly, the Department of Health thinks much more about the life sciences than it did 15 years ago. The relationship used to be a one-dimensional one about drugs pricing in the NHS. It has steadily broadened out over the years in a good way. The Department of Health is capable of thinking about the health of the sector. I have said many critical things about the MoD, but it certainly understands the

defence sector well, so there definitely are departments that have those relationships.

In defence of the Treasury, deep in it somewhere is a belief in competition, which is a good thing. It has always been a bit conscious not only to listen to the big incumbents but to understand the potential power of disruption and to be on the side of the disruptors even if the incumbents are not happy. I gave the fintech example. Also, Gordon Brown set up the Cruickshank review, which was very challenging to the big banks, which were not at all happy with that. He did that because of a general belief that competition would be good for the sector. Some government departments are less naturally inclined to listen to the disruptors.

Lord Drayson: Which ones would you highlight?

Sir John Kingman: The Department for Business and Trade. Perhaps inevitably, if you are the Business Secretary, you talk to the big beasts, but it has a habit of relating to the sectoral representative bodies while the Treasury tends to go more to the actual businesses.

Lord Drayson: Do you think DSIT is looking to—

Sir John Kingman: Honestly, I have not worked with DSIT. It did not exist when I was at UKRI. I do not know it at all well.

Q86 **Lord Ranger of Northwood:** Yet again, Lord Drayson has pre-empted exactly what I was going to ask, but I have a couple of elements on the Industrial Strategy Advisory Council—and without disclosing anything on the actual work you have been involved in. I have looked at the terms of reference of the council and the monitoring of growth that is driving sectors. I am interested in just a little bit of how that is done by the council. I have a couple of points on that. There is an annual mandate letter that the Government propose. Considering that we have been talking about consistency over a long period of time, does that direction enable the consistency to carry on, because it could change as you are trying to do things? I just want to get some light on that. The final point on this is: considering that we are looking from a science and technology perspective and where we see huge growth coming from, how is that relationship with DSIT, because the reports are to the Chancellor and the DBT Secretary—the Business Secretary?

Sir John Kingman: Let me try that. First of all, on monitoring, we have been in an intense phase to date in the run-up to the publication of the strategy, giving advice on things the Government have asked us to look at as they develop the strategy. We have not really moved into the monitoring mode yet, but we have had some discussions about how we will do that. Some of my colleagues on the council are really engaged in that: Diane Coyle, for example, who is very authoritative and has been heavily involved in this; there is also a distinguished academic at the LSE, Henry Overman, who you will know well. They are involved in trying to think through what is a sensible framework for the council to be, as you

say, monitoring and, in a sense, holding to account for the delivery of the strategy. But I suppose that it is sensible that you do the strategy first and then work out how you are going to monitor it. That is the honest answer to your question. I apologise; I have forgotten your second question.

Lord Ranger of Northwood: It was about the annual mandate letter. How is that providing consistency?

Sir John Kingman: What I would say to that—I think Greg Clark said the same thing to you when he was here; he is on the council—is that, actually, I do not think it likely that the Government are going to publish a strategy and that is somehow the tablet of stone that answers all questions for all time. It is just not possible to do that, and I do not think other countries have tried to do it that way. The strategy itself will develop and evolve. In particular, it is likely that the Government will want to deepen their thinking on individual sectors. And, of course, the world changes. The world changes quite fast. I do not think there will be a document and in five years' time we will simply be looking back to one document. The strategy itself will evolve. So, no: it is sensible for these things to grow and be kept up to date.

Lord Ranger of Northwood: Is that not the exact tension that sometimes causes these strategies to end in the sort of treacle of dispersal and divergence from exactly what they are trying to do? The very effort I have seen is that, if you can focus the strategy and stick as much as you can to it, it does enable you sometimes to get more success in what you are trying to achieve. I am just trying to understand how much variance there can be.

Sir John Kingman: Doing this well is really hard. To articulate a vision for the future of a part of the economy that is compelling, that brings the sector with it, that the Government can meaningfully do anything about—that is not a small ask. The Government are going to attempt to do it for eight sectors. That is eight big asks. Inevitably it will do it better for some than for others, and each of those sectors will themselves evolve; the world does. It would not be fair to expect the Government to produce a document which answers all questions in a way that we could sensibly just nail it there and operate off it for years. It will not work like that.

Lord Ranger of Northwood: I appreciate that. Having not worked in Government but worked at City Hall and on the *London Plan* and the mayor's transport strategy—having led the work on that, which is a 10-year strategy that looks to manage this city—I understand the challenges, but we do try and hold to it, and through change as well.

Sir John Kingman: Of course there should be consistency. If you are going to have a strategy, you then need to try and stick to it, for sure. I am not saying we should not but, on developing a strategy, I am trying to discourage you from thinking that there is going to be a moment at which all these questions are going to be answered, because I do not think it is going to feel like that.

Lord Ranger of Northwood: What about the relationship with DSIT?

Sir John Kingman: And indeed UKRI. There are very strong links in some of the sectors. Life sciences is one of the eight and is a very obvious one. You could not have a strategy without the close involvement of DH, DSIT, UKRI, MRC and so on. I have seen a lot of engagement of the creative industries with DSIT and some of the research councils and Innovate on that. So, yes, there is plenty of that going on.

The Chair: We are drawing to a close, so we will have to keep our questions as brief as possible.

Q87 **Viscount Stansgate:** My question is not exactly short, but it does deal with Innovate and the Government's role in near-market R&D. One of your reflections was that you felt that Innovate UK was better off as part of UKRI and given key roles in delivering on the industrial strategy through the industrial strategy challenge funds to encourage collaboration between Innovate and the research councils. Now, Greg Clark, whom you have just mentioned, told us last week that Innovate had become too much like the research councils in terms of bureaucracy and risk aversion, and you recommended yourself in 2021 that the Government should develop "the business-facing aspects of UKRI", where we would also expect Innovate to lead. So my question is: what advice would you have for Innovate specifically? Are there examples of good initiatives during your time where UKRI really successfully enabled that collaboration? What role do you think the Government should have in near-market R&D? That is a lot to cover.

Sir John Kingman: I do think the Government should be involved in near-market R&D. That was one of the disagreements I had with Dominic Cummings, which led to his closure of the industrial strategy challenge fund. I have not actually had any dealings with Innovate for the last four years so I am probably out of date, but I would note that UKRI has increased Innovate's budget to something like £3 billion a year. We would have to check that figure, but it is something like that. I do not believe that would have had any chance of happening if it had not been part of UKRI; that is worth remembering.

In lots of areas, it was obvious to me that the most powerful model was the research councils and Innovate working together. That was this whole middle territory that I talked about at the beginning that I would like to see funded, which is not currently funded—the Government deploying resource in a way that crowds in private sector R&D. When we developed that programme, our early experience of it was that we were able to crowd in something like 3:1 private to public money. That is incredibly powerful. I do not think you will be able to do that without the research councils and Innovate working together.

One thing I do observe—I may be slightly out of date on this, but it is a legitimate challenge to Innovate—is that there are businesses around Innovate that have learned how to operate Innovate's processes to get money. Some of those businesses are repeatedly funded by Innovate. I

would urge Innovate to be really quite disciplined. If, in the end, a business cannot attract private money, that is not a great sign, and there comes a point where you have to have a bit of tough love. Innovate has a sort of perennial challenge, which is to reach out beyond the businesses who go to its conferences and know its people and know its processes. There is a big pot of money, and businesses are not stupid; if they think there is money to be got there, they will learn how to get it. Innovate has to be quite brutal, if necessary, about making choices about who it funds. Some of those businesses may not be good at filling in Innovate's forms. I may be out of date, but my hunch is that I am probably not.

Q88 Lord Lucas: You and Paul Nurse advocated emphasis on research establishments. Is more such change needed? Do you share my concern that universities seem not to manage research as a long-term profit centre? I think this leads to a lot of research money allocation where there is no hope of any return, including most of what PhDs do when they are training.

Sir John Kingman: I am not going to sit here and say that most PhDs are wasted. But to your first question, the concern I have is specifically this: we have a funding system that creates a very strong incentive for everything to be based in a university. If you are trying to operate outside a university and you are getting research council money, you do not get 100% of the cost. You get significantly less, whereas the university does get broadly 100%.

I do not think there is any good defence of that unlevel playing field. There are some exceptions in the British system, such as the LMB we mentioned earlier—the Laboratory of Molecular Biology—and the IFS, but they are extremely unusual. I think there should be a level playing field.

Also—this goes back to the point about the university funding system—the whole system worked for a long time on cross-subsidies from international students. That is drying up fast and it is creating a major problem again about the sustainability of research funding in universities.

There needs to be a reset, both in relation to funding of students and the funding of research. That will raise questions about the size of the sector and how much of this activity we can fund, but I would rather have a smaller amount funded sustainably than a larger amount funded unsustainably, for obvious reasons.

Baroness Neuberger: You have given us an enormous amount of food for thought, and I am very attracted by the idea pulling up the bindweed, I must say.

Sir John Kingman: Good luck with it.

Baroness Neuberger: Yes, that was brilliant. My brother-in-law was deputy director of the LMB so there are quite strong family feelings about that.

You are in our position, and we have got to put a report to government

so that there is at least some chance that they are going to take up some of our recommendations. Clearly, the universities point that you have just made is one of the key ones. What would be your absolute key points?

Sir John Kingman: I go back to what I said at the beginning: fund the science base sensibly, have a proper look at the university system and how to put it on to a sustainable footing, and, if you possibly can, essentially refund this area in between the academic and Innovate.

To that I would add the point that I was discussing with Lord Drayson about the pension funds. The Government have made good steps. We can have a debate about mandation, but before you get to that, it would be sensible to have a big push on the decision-takers in pension funds who are trustees and the big employers, and encourage them to think a bit more imaginatively about asset allocation. I think there is plenty to go after there.

Baroness Neuberger: And the Kate Bingham model should be there?

Sir John Kingman: Yes, the Kate Bingham procurement role, for sure.

Baroness Neuberger: Thank you very much.

The Chair: Sir John, thank you for answering all our many questions and for sparing your time. We will now pause for a few moments to bring in our next witness.