



HOUSE OF LORDS

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The Select Committee on Science and Technology

Inquiry on

THE RELATIONSHIP BETWEEN EU MEMBERSHIP AND THE EFFECTIVENESS OF SCIENCE, RESEARCH AND INNOVATION IN THE UK

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Questions 62 - 68

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11.40 am

Witnesses: Professor Dame Julia Goodfellow, Professor Sir Peter Downes

and Professor Sir Leszek Borysiewicz

USE OF THE TRANSCRIPT

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Members present

Earl of Selborne (Chairman)
Lord Cameron of Dillington
Lord Fox
Lord Kakkar
Baroness Manningham-Buller
Lord Maxton
Baroness Morgan of Huyton
Lord Vallance of Tummel

Examination of Witnesses

Professor Dame Julia Goodfellow, President, Universities UK and Vice-Chancellor, University of Kent, **Professor Sir Peter Downes**, Convenor of Universities Scotland and Principal & Vice-Chancellor, University of Dundee, and **Professor Sir Leszek Borysiewicz**, Chair of the Russell group's EU Advisory Group, and Vice-Chancellor, University of Cambridge

Q62 The Chairman: May I extend a welcome to the three vice-chancellors who join us for our second session? We are most grateful to you for coming to give evidence today in our inquiry. We are being broadcast so could I invite each of you to introduce yourselves for the record and, if any of you would like to make a statement at this stage, feel free to do so. Shall we start with Sir Leszek?

Professor Sir Leszek Borysiewicz: I am Professor Leszek Borysiewicz, vice-chancellor of the University of Cambridge. For the record, just because this is about Europe, I am also chair of the Identification Committee of the European Research Council. That is a direct interest. From the perspective of a research-intensive university, the importance of engagement with Europe is paramount. A huge component part of our research income now is coming through the EU and therefore the issues that surround collaboration—dealing with large-scale projects and programmes, as well as the importance of the engagement with Europe to small and medium-sized enterprises as part of the cluster that surrounds Cambridge in relation to economic growth—are key elements that we debate and discuss on numerous occasions. This is a matter of great significance to the university, the region and many of the research-intensive universities of the UK.

Professor Dame Julia Goodfellow: My name is Julia Goodfellow. I am vice-chancellor at the University of Kent and I am currently president of Universities UK. Universities UK has spoken out for Europe because we feel it benefits students by having the best facilities to study and work in Europe; it benefits researchers and research per se; it benefits society as a whole because of the impact of that research; and from the university perspective, it also benefits the local community because of the considerable investment that comes from European students and research funds.

Professor Sir Peter Downes: I am Peter Downes; I am the principal and vice-chancellor at the University of Dundee. I am also the convenor of Universities Scotland and, in that

respect, vice-president of Universities UK. I am speaking primarily on behalf of Scottish institutions through that convenorship role.

I am very much in agreement with my two colleagues and the comments they have made, but if I could give a particular Scottish perspective and a Universities Scotland perspective, it is that we recognise it is not universities that will be voting in a referendum but the people of the UK. We believe strongly that it is the role of universities and indeed the leadership of universities to be both the source of informed evidence and the places where informed debate will take place. With respect to the vigilance of Universities Scotland, we are there to ensure that policymakers understand the implications of their preferred outcome within the referendum and the implications for Scottish universities. We will work to secure policy outcomes that ensure the sector's continuing success. In that regard, when we examine the evidence, we find that much of the relationship with Europe described by my colleagues is absolutely vital, in our view, to the future success of Scottish universities.

Q63 The Chairman: From those three opening statements, it is quite clear that, in your view, Europe is a great asset to you as universities, and indeed the written evidence spells out in some detail how you see that. Could you give further detail on how you feel about this relatively minor source of funding, if you look at the totality of research, to universities in this country? How do you see the impact on the scale of funding and the scientific impact? Do you feel that the impact would be much the same if we had associated country status?

Professor Sir Leszek Borysiewicz: First, I would challenge the view that it is a relatively minor source of funding. The total source of funding from all European-based funding is equivalent to having another research council. This is a very significant part of the budget that we deal with. In my own university, 17% of all research funding to the University of Cambridge comes from Brussels now, so our own academic staff, who are free to apply elsewhere, choose to apply to the European Union. It is not an insignificant amount; it is actually a very important component of the budgets we have. Suffice to say we would pay as much attention now—as a university, and as most Russell group universities would pay—to the policy directions and debates that occur in Brussels as we would to what is going on in London.

Professor Dame Julia Goodfellow: I absolutely agree with that. We think about £0.7 billion in funding from the last year of FP7 came to the UK. That compares with £3.6 billion through the Higher Education Funding Council for England and RCUK—yes, I have mixed up devolved administrations—for the UK. It is very significant for us. The impact of it is the ability to collaborate much more easily. It is much harder with national funds—and some of you will remember I did run a research council at one time—to collaborate across Europe with those funds, whereas with the European funds per se we can collaborate with the best in Europe. That is the impact and the added benefit of those funds.

The Chairman: Presumably, you collaborate with other countries outside the European Union equally successfully?

Professor Dame Julia Goodfellow: Absolutely, but there is not such an easy mechanism. There is no similar mechanism with America, for example, so it is very difficult to get joint funding there. Americans have restrictions on NIH money coming to the UK; there is a little they can do but there are a lot of restrictions. However, this is money for cross-country collaboration so, from that point of view, it is very important and perhaps unique in some way.

Professor Sir Peter Downes: I could add a couple of points which my colleagues have not mentioned. First, numerically, funding from the EU for Scotland is around 13% of the total research funding we receive. Again, I echo the point that it is a very significant figure, equivalent to any of the other major sources of funding we receive. Two specific points: first, what this does is fuel a qualitatively different set of relationships that support our research, and it is those relationships and their connectivity which are vitally important, not merely the numerical value of the research that it funds. We know that collaborative research is more highly cited and therefore more influential and has more impact than research done in isolation. That occurs whether or not that collaboration is with other groups within country—more significantly, internationally—and, very importantly, when some of that interaction involves working with industry and business. European funding promotes all of those things: connectivity and relationships with business as well as international collaboration.

Professor Sir Leszek Borysiewicz: It is very important that we begin to think and try to quantify what we mean by these collaborations, because they are things which are talked about. The best analysis of this we have been able to come across is an analysis of the framework programme 7 that completed before. If you take UK participation in that programme, 100,000 collaborative links were established as a consequence; 18,500 of those were with Germany; France was second with nearly 13,000, and then Italy with 12,000. Consequential on those framework programme 7 links, 10,000 of those links were made within the UK.

The net output of that is also important. If you look at publications where there is international co-authorship, the United States would probably lead that, but four-fifths of all of those internationally co-authored papers included an author from the European Union. These collaborations really matter now; they are an integral part of our academic system, and those collaborations are going to become ever more important as we move forward to try to get into the big, grand challenges that European Union funding will enable to happen. Some will happen bilaterally, but the European Union does enable this to happen much more readily than if we had to have bilateral negotiations with Germany and France, or tri-laterals—even more difficult—with individual member states in this way.

The Chairman: The particular point made to us time after time about the disadvantage of associated country status is that you are not there in the committee to set the agenda. If, with associated country status, you were making a bid to collaborate, even though you had not set the agenda, would you feel that your opportunity to collaborate would be inhibited by associated country status?

Professor Sir Leszek Borysiewicz: I think it would be. If necessary, you need to look very hard at those countries that are involved with associated country status at the moment, such as Switzerland, Israel, Norway and Iceland. There are several of them that hold this state. Colleagues in Lausanne and ETH, superb federal universities in Switzerland, at the end of the day, have no capacity to influence the nature of programmes that are undertaken. We have to understand these collaborations are about very big collaborative programmes that will involve scientists of all disciplines—arts and humanities as well as pure scientists—from many countries. It is essential to be at that table to be able to put the priorities that are important, not just to the European Union and to the solution but also to the UK.

Secondly, associated member status carries with it a huge disadvantage, particularly if we think of the outcomes of that research as they will pertain to the capacity of the UK to exploit them. If you are an associated country you have to negotiate that position on intellectual property in a separate way because you do not form part and parcel of those areas. Were we outside the European Union, it is quite likely that we might still be invited because of the quality of research that is undertaken in Europe, but there is no way that any discoveries would then be exploited necessarily in the UK because we would not hold the intellectual property; it would be held by member states. I believe that being there is a huge advantage. Frankly, I would say you may need to talk to ETH and the Rector of Lausanne to hear about the disadvantages they have and, particularly, the problems Switzerland has had as a result of its referendum on migration. I am very much of the opinion that being around that table allows you to have far more influence than we would otherwise enjoy.

Lord Maxton: Would there be a UK to even ask that question? Perhaps Sir Peter can answer that question better than anybody else. Scotland has made it clear that if it votes “yes” to staying in and the rest of the United Kingdom votes “no”, Scotland will hold another referendum on independence and may very well leave, which would mean there would be no UK to even apply for associated status.

Professor Sir Peter Downes: There are several layers of speculation in what I believe was a question. I am not quite sure how best to answer it. First of all, you are expressing a view that relates to the position of one party in Scotland, albeit the one that is currently leading, and it is not the only one. I was at a leaders’ debate last night held in our university which was quite interesting. That was not the view being expressed even by the Scottish National Party in that particular debate about the policy direction that they would pursue in the event of victory in May in the Scottish elections. There are too many layers of speculation to develop. I am quite sure that Scotland’s view about membership of the EU will remain positive, irrespective of its own direction of travel as a member of the Union or as an independent nation.

Q64 Lord Maxton: That leads into the next question. Is there a variation between the universities on EU funding? Do some universities get more and some get less than other parts of the United Kingdom?

Professor Dame Julia Goodfellow: Basically, it depends on where the universities are. The research-intensive universities, as Sir Leszek has said, are very, very dependent on the research moneys coming in, which means the majority of the funding tends to be in London and the south-east because that is where the majority of universities are. At the moment we are talking framework funding. Obviously, there is structural funding, which can go to certain areas with relatively low GDP, which I think would be Wales—we do not have a colleague from Wales with us—and possibly Cornwall. There is some variation there. However, as regards framework programmes it is basically going to the research-intensive universities. About 15% of academic staff in the UK are actually from continental Europe, but it is higher in the south and south-east; it is 22% at Kent, for example, and perhaps less in the north.

Lord Maxton: In a sense, you have answered the second question, which is, why does this happen, if it does happen?

Professor Sir Leszek Borysiewicz: Can I speak as a Welshman who does pay a fair amount of attention to where Wales sits on this? There is a very strong perspective that universities in

Wales do benefit from these funds being made available and, particularly, the Assembly Government do use them in a variety of ways to promote the academic well-being of their institutions. I think our colleagues in Wales would expect us to be able to identify that. Therefore, in the same way it takes a rather more positive view than many other parts of the UK.

Professor Sir Peter Downes: There is an overall regional variation with respect to Scotland versus the UK. We are about 10.5% of EU funding, a little bit less than our success rate for Research Councils UK funding, but still punching slightly above our weight by population. Our figures for EU staff are around 16%, so very much in line with UK figure.

The Chairman: Punching above your weight as a percentage of GDP?

Professor Sir Peter Downes: Yes, absolutely.

Professor Sir Leszek Borysiewicz: If you try to do the correlations, if you look at research-intensive universities by total research income, you will find the proportionality of distribution of European money more or less follows the trends of other sources of income in those universities; there is a very good correlation between that. The regionality we are observing is no different to the regionality we observe in relation to other sources of funding.

Lord Kakkar: If I may go back to Sir Leszek's earlier point about the strong case being made beyond funding for collaborations, networks and access to infrastructure to do major research, is the science community and the university community in the UK making that argument so it is more broadly understood by the population in general?

Professor Sir Leszek Borysiewicz: I think we do make that argument. It is a very interesting argument to make because we have to recognise there are many facilities, particularly physical facilities—I am talking about the physical sciences, which are very dependent on areas—and we have two different types of infrastructure funding available. There is funding by treaty, and I am sure Professor Goodfellow will wish to comment on that, as a member of Council of STFC. For example, CERN is an international treaty; we merely pay a subscription. Then there are EU-related activities, and here I would pick out EMBL with its laboratories in Trieste and Monterotondo; the Grenoble facility that we have; and, ultimately, the large terrestrial telescope being built in Chile.

These are all very dependent and are being built with funds in the European Union. Access to these can be negotiated, as certain other countries negotiate their position from outside the EU, but you would be doing this on a case-by-case basis instead of being able to have the right to engage with the underlying primary programme they undertake, and therefore giving priority to where British scientists believe they should be playing a part. It is a circular argument, but it comes back to the idea that you can influence and engage in that discussion with a freedom you would not have if you were constrained by individual membership on a case-by-case basis for these facilities.

Lord Kakkar: How do you think those arguments are understood more broadly by the British people in influencing their decision at a forthcoming referendum?

Professor Sir Leszek Borysiewicz: I suspect they are not at all and I doubt whether it will influence their individual decisions. We will make the case, but of all the factors that might influence voting, I suspect the impact of the large terrestrial telescope in Chile is not going to be the vote-winner in a referendum.

Q65 Lord Cameron of Dillington: I would like to go deeper into the structural funding versus the framework programme funding, which you were talking about just now. I am not quite sure what proportion of structural funds is focused on R&D, and maybe you know the answer to that. Bearing in mind structural funds are based on GDP earnings per head of population—and, as you have already said, quite a small part of the UK is in Objective 1 or 5b areas, so we do not get a lot of that—do you think structural funds should be included when considering the overall case for funding? We do very well under framework programme funding—but almost nothing under structural funding.

Professor Dame Julia Goodfellow: I think that is not quite the situation. It is quite hard to find out all the details of structural funding because there are several different tranches/streams of it. Under the research and innovation theme, we believe the UK gets just under 10%¹—and it is less than that. A lot of structural funding is about providing a basis for research. Where the UK does exceptionally well is where it is a free competition, because of the excellence of our science base. Certainly, when I have been in policy—and I think when Graham has been making policy—that is where we have wanted to be; we wanted to be able to go in and fight for European Research Council funding competitively, and we have not always been looking for the infrastructure funds going to countries that possibly are not as competitive as the UK and some of the leading science nations there.

Professor Sir Leszek Borysiewicz: If I could come in on this area, as chair of the Russell Group EU group which engages in this, we have engaged very closely in discussion with the so-called EU13 countries. These are the countries that receive the vast bulk of structural funds because of their relative positioning. There is a dual debate that goes on in these countries. The structural funds are there for those countries to decide how best to use them in creating the necessary infrastructure, but it is an argument also used within particularly ERC and Brussels to say, “You have been given structural funds to compensate for the fact that you may not have had the infrastructure or the capacity to develop. The choice is yours as a country to decide how you utilise those funds, but now do not come back and penalise the United Kingdom twice over by impacting on ERC and other grants which are given on excellence alone because you have not put that investment from resources made available”.

How we view science in the EU13—which is largely central Europe, by which I mean the strip of Poland, the Czech Republic and Slovakia going south and the southern part of Europe, where research is less strong and they are less competitive for ERC funds—and the balance of how much of structural funds should be used, is a topic of debate with those countries, country by country and member state by member state. Brussels is looking very hard to make sure they are putting in a significant fraction of structural funds in this area, rather relying on trying to interfere with grant allocation programmes by offering preferential treatment in these countries. It is a very important position that Britain takes in those discussions on the ability of those structural funds to be utilised, and the freedom to use them is the freedom of choice of those countries; they therefore cannot turn round and blame the fact they are not receiving as many ERC funds if they have not shown that investment themselves.

¹ For clarity, this figure (9.72%) refers to the proportion of the total European Structural and Investment Fund money awarded to the UK for 2014-2020 which has been allocated to the ‘Research and Innovation’ budget theme.

This budget theme has had €1.60 billion earmarked from a UK total of €16.42 billion.

This is a major topic within the European Union that goes to the heart of that debate—the competitiveness issue as opposed to the level playing field issue. These are two fundamental principles, and this particular theme often finds itself involved in a contretemps between those two ideals that Europe proposes.

Professor Sir Peter Downes: Just moving from the generic to the specific, in Scotland I can give two examples of ERDF funding and what they achieved: £6.5 million of funding from the ERDF was the essential component that led to Strathclyde University building its technology and innovation centre, which was overall a £90 million project; and there was a very similar ratio of leverage for the development of the Centre for Regenerative Medicine in Edinburgh, with £5 million of initial funding. In the context of our infrastructure environment in the UK, we can find additional sources of funding to match and leverage those ERDF funds in that sort of way. Nevertheless, they are a vital ingredient that leads to these very significant outcomes.

Professor Dame Julia Goodfellow: In England the funds are going to local enterprise partnerships and, again, it is very much up to each of the 39 LEPs to decide where they want to focus their funds. A lot of it has been on very basic infrastructure, not even science or technology based.

The Chairman: Indeed, there is no reason why structural funds should be. Last week we did have some difficulty in disentangling how structural funds and other research funding amount to a total support for research; that is something we need to have more information on eventually.

Professor Sir Leszek Borysiewicz: You will have to do this country by country as to policies, and the implications of individual country allocations for higher education and R&D funding has huge variability when you start looking at the EU13. Indeed, some of the smaller countries now subjugate all of their funding in relation to peer review processes conducted by the ERC. They say, “We will only support those things that have gone into the European Union and those that have failed but have got into the final area are the projects we will support”. There are huge changes where the centralised EU processes are seen to be better than national processes in some of the smaller countries of the European Union. It will be a very complex question you are asking.

Q66 The Chairman: It seems misleading, on the face of it, to put the two together and then draw a conclusion as to where we stand expressed as a percentage of GDP. Once you add the structural funds, far from being one of the best for outcomes, we are comparing rather unfavourably with most other member states.

Let me move on to ask about freedom of movement of people within the European Union. How does this affect the science and research community in the United Kingdom? Could you also tell us your views on schemes such as the Marie Skłodowska-Curie research fellowships and the Erasmus Plus exchange programme? How do you see these contributing to research activity in this country?

Professor Sir Peter Downes: I think we all have very similar views. The principle of freedom of movement of people is not only one of the most important principles of the EU but one of the most important benefits of EU membership to higher education in the UK. I have already mentioned that 16% of academic staff in Scotland are from the European Union, and that figure goes up to 23% for research-specific staff. They really are an integral part of our

research teams and the talent base for research in Scotland and the UK. In Scotland, 33% of EU country staff are in the STEM subjects. We are disproportionately recruiting people in the important STEM disciplines, which are vital for innovation, to ensure we have that talent base alive and well in the UK.

I have also mentioned the fact that collaborative research is generally more highly cited than research done in isolation. That is a vital part of it as well. In Scotland, around 48% of collaborative research is internationally co-authored, with a substantial fraction involving European co-authors. On student flow, in Scotland 24,000 students come to Scotland currently from European countries, bringing a substantial economic benefit but also enormously enriching our campuses and enhancing the experience of Scottish-based students, who have access to a broader cultural understanding as a consequence of those relationships. I will stop there and let others fill in some of the other gaps, I am sure.

Professor Dame Julia Goodfellow: Sorry, we are going to be very boring. Across the UK 15% of academic staff come from continental Europe; at Kent it is a little bit more, 22%, across all disciplines. We have a lot of European students especially coming to the south-east of England. From the Marie Skłodowska-Curie point of view, we all have examples from our own institutions where we have seen students come and benefit from the excellence of research in the UK. We can also bring in American students, for example, through some of these collaborative schemes, whereby we can have an American student come in and collaborate with Kent and a university in Italy, for example. The UK does incredibly well in European PhD students who want to come and study and have fellowships in the UK. We are a key part of developing young science talent. We are less good at encouraging UK-domiciled undergraduates to go and study in Europe. However, at Kent we call ourselves the UK's European university; we are absolutely adamant that it is good for all undergraduates to have some experience of studying and working overseas. Therefore, the Erasmus programme and Marie-Skłodowska-Curie give them opportunities at different stages to do that.

The Chairman: Perhaps you have a geographical advantage there.

Professor Dame Julia Goodfellow: I need some advantages in this job.

Professor Sir Leszek Borysiewicz: The numbers for the Russell group universities as a whole is that they won 27% of all Marie Skłodowska-Curie grants awarded in the EU, which gives you some idea of the strength of this collaboration. Currently, Russell group universities employ a third more academic staff from EU countries than from the rest of world. Undoubtedly, one of the reasons is the fact they come from the EU, which means you do not have to get through the tier 2 immigration processes, and therefore they have become more and more attractive as potential areas where we would go to look for world-class individuals.

For undergraduate and graduate students, the numbers for the Russell group are 55,000 EU students, roughly divided 50:50 between postgraduate and undergraduate, and that is despite the issue of fees which have to be paid here and elsewhere. It is roughly 10% of all students within Russell group universities. That has increased, despite fees, from 6% to 10% of the population. We have to understand that, particularly in research-intensive universities, we are not in a parochial United Kingdom game; we are in a global game, and it behoves every single institution that aspires to be research led to recruit wherever the talent is. If that talent is in the European Union and it is easier to recruit it because of issues surrounding immigration, then we have to go there to help to ensure our institutions remain

right at the forefront, remain competitive and help not only in the development of the academic area but, as a consequence of these individuals being in the UK, help drive economic development of the regions which associate themselves with research-intensive universities.

For Cambridge, that is very simple and straightforward; our unemployment levels are such that we need trained manpower from overseas and the European Union, particularly Germany and Italy. These are the countries where we are able to recruit particularly well—and, latterly of course, France. We are able to recruit exceedingly well from those countries, and these, I believe, provide a net asset to the UK in the longer term.

The Chairman: If we are in a global game, as clearly we are, and you make a very powerful point there, is there any evidence that this freedom of movement within the European Union inhibits or discourages scientific talent from other countries outside the European Union?

Professor Sir Leszek Borysiewicz: No, I would have said there is very little evidence for that. I cannot give you objective numbers on that, my Lord Chairman, but the impression one gets at every single university I talk to is when you look to recruit staff, you seek to recruit the best you can. The bigger issues for recruitment from overseas are not made easier by the current immigration restrictions, particularly the fact that tier 2 is very full, and we recruit most of our post-docs and PhDs under that tier. That, undoubtedly, causes some ructions.

There are other issues in countries such as India, where the rules we apply are not necessarily different, but there is a perception that we are not a country that is willing to entertain those—but to disentangle that impact from the impact of the EU numbers coming in is extremely difficult to do objectively. Frankly, I would say the most important issue is for British universities to remain right at the forefront and to be hugely competitive in the research they are capable of delivering. It is a case of that US film saying, “Build it and they will come”. If we are the place that is seen to be the best, most academics around the world will choose to work in those places where they can best achieve the goals they would want to. At the moment, Britain is an extremely good place to come because our institutions are doing so well in that international perspective.

Professor Dame Julia Goodfellow: From the figures we have we think international academic staff number slightly fewer than those from continental Europe; at Kent, for example, it was 22% EU and 18% international, and it looks to be very similar across the UK. We have had tables out on international universities in the world. Kent and a large number of us are in the top 100 because of our ability to attract international staff and students. We are a place people want to come and work; they really add to the location.

If I could add to the point you made about Cambridge, if you take a very different city, Canterbury, one in ten jobs, directly or indirectly, are due to the University of Kent alone. Therefore, the investment we get from the EU, modest as it may be compared with Cambridge, adds tremendously to the region. We will definitely have less money to invest in the region if we cannot have access to EU funds and EU students and staff.

Q67 Baroness Manningham-Buller: That is a pretty consistent piece of evidence; thank you very much. I want to pick up on a comment in the Russell group evidence to this Committee. There are a few things you would like reformed, notwithstanding the thorough support of all of you for avoiding a Brexit. In particular, we would like to understand what you would like

to see better in the way universities benefit within Europe. If we remained within the EU, what reforms would you particularly like to see which would affect what you are trying to deliver in your universities?

Professor Sir Leszek Borysiewicz: That is an extremely good question. From my point of view, there are three things and they are rather large scale. First, for the European Union to recognise that being cemented to the common agricultural policy, the policy of others, is not good because in reality it has to become a more competitive region internationally, and therefore increasing support for knowledge-intensive industries and activities is absolutely key. A big step towards this was made and supported by the UK Government in relation to the fraction of the total European budget that was committed to competitiveness in the last round of budgetary negotiations within the EU, where I understand we improved the competitiveness from about 9% to 11%.

These are slow gains because you are not going to make substantial changes within Europe around the common agricultural policy. Nevertheless, despite a falling budget, there was this extra emphasis on the importance of competitiveness. That is where Britain has an edge within Europe: to work in that knowledge-intensive set of universities I believe it is important we keep the trade links open. Personally, I believe it is important we subscribe to a single intellectual property around Europe to ensure that intellectual property is not challenged in 28 jurisdictions every time it is made. This has a big impact on small enterprises that have limited budgets to defend the intellectual property they have.

Lastly, there is the need to make sure that British companies, particularly our small and medium-sized enterprises, benefit from simplification of the rules by which they can access European funding. In fairness, if you look at the negative side of Britain's performance, our performance by small and medium-sized enterprises has not been good, and universities are big creators of these enterprises. There is a lot of work to be done to enable that support, so that European Union funding not only benefits the academic institutions but it can genuinely contribute to economic growth in the longer term. Those are the changes I would like to see.

The big challenge, for me, is probably nothing to do with the questions the Prime Minister asked; the overriding question is not the one everyone picks, on migration; it is how you ensure that a 15-member eurozone does not trump every majority decision that has to be made. Probably that is the key question, ultimately, Britain will have to address.

Baroness Manningham-Buller: Thank you very much.

Professor Dame Julia Goodfellow: I agree mainly with what Sir Leszek has said. It was interesting a couple of years ago, when the then Government looked at competencies within the EU, that they did actually see that UK industry does less well as regards funds received, and that is obviously an area we should be looking at and, I think, should be worried about, as you have said. The responses to the competency review from this industry group were largely positive, particularly with regard to the forums and networks the EU provides for collaboration. They thought it was important to be in there and discussing the priorities, which is something we have come back to before. We want to be in there, being able to argue and change. Any organisation has to change. Sir Leszek led a delegation of vice-chancellors earlier this year to the EU because we were unhappy taking money away from Horizon 2020 for basic research and putting it into innovation and changing the goalposts. We debated it ourselves, and had a partial victory.

Professor Sir Leszek Borysiewicz: We had a very good victory inasmuch as at least the component parts of the ERC and Marie Skłodowska-Curie programmes, which could not conceivably benefit from the European Investment Bank in the way it was constituted, were protected.

This is very important, because we keep talking about the EU in its totality but we have to remember there are parliamentarians who now show an ever-increasing interest in the science and technology side and the way in which budgets are set for the Commission. It was a salutary exercise for me to realise not just how much support there has been from the UK MEPs, but their capacity to engage those in other countries to rally in support of knowledge-intensive activities and the freedoms under which the European Research Councils, which are seen as a very big positive within the EU, actually operate. It is a complex structure; it is not a single structure. We are dealing with the Commission, at one end, endlessly proposing change, and the parliamentarians who scrutinise the budgets ever more carefully and have their own committees that engage in science and technology, and we also have the member states.

Our relationship with how we use funders in the UK, particularly the research councils taking a leadership role among national funding agencies, is of real importance. We need to bear in mind that EU funding directly is only 11% of the total R&D available within the European Union; the other 89% is managed by individual agencies. The greater cohesion we get, the more the likelihood that Europe as a region can adequately both compete and collaborate with North America and China in this regard. There are real reasons to be able to pick up on this and to ensure we use all the tools available to us. It comes back to that question of how we can exercise the influence that we get from being inside this organisation, rather than outside.

Professor Sir Peter Downes: I could say “I agree with Borys”—that might not be the best comment to make—but there are two additional points. I do not think anybody mentioned VAT and its impact as an unhelpful barrier to improving collaboration in some circumstances; developing cost-sharing groups within our collaborative programmes of activity as a concept that would limit VAT liability would be very helpful, and there is a model for how that is done in Scotland. Otherwise, I agree. The context of this is that our enthusiasm, strong support and commitment to the EU and its value to the UK higher education system is not dependent upon the reforms we are talking about; these reforms would enhance our relationship and all the things we have been discussing.

Professor Sir Leszek Borysiewicz: I would hate the Committee to take away the idea we have such a rosy-eyed view of the European Union that it can do no wrong; we certainly do not. There are good examples of where considerable difficulties have been posed by directives and issues within the EU. I just pick on one, and that is the directive about intellectual property related to embryonic stem cell development. That is forcing an institution like Cambridge to look for exploitation in California or India in relation to these areas. It is not that everything that comes out of Europe glows and is brilliant—there are the issues with clinical trial directives and the welfare of animals in relation to experimental work—but the important thing is that we do have allies within Europe and we can engage in that discussion and debate.

Some of these directives, whether we like it or not, would apply regardless of whether we were in or out because we would not be able to collaborate with programmes on an

individual basis, and they would still apply to us. The strictures might still be there even on a case-by-case basis, even though we play no part in setting those rules because we are then controlled by the rules set by somebody else.

The Chairman: I quite appreciate you are saying that, insofar as some of the directives are far from perfect, you would rather be able to influence than not.

Professor Sir Leszek Borysiewicz: Absolutely.

Q68 Lord Kakkar: I just want to turn to the question of the European Union's role in fostering university-business collaborations in the United Kingdom. We have seen and taken evidence on the Dowling Review of Business-University Research Collaborations in the UK. Does the European Union have a significant role in this area, driving business to work more effectively with universities here in the UK?

Professor Sir Leszek Borysiewicz: If I could start on that, the answer probably is yes. Could it do it better? Very much so. What we are seeing within the European Union and Horizon 2020 is that a bigger fraction of the budgets are going to be directed particularly at small and medium-sized enterprises, and there is more innovative thinking going on than happened under framework programme 7 about how large-scale industries can engage. We have the European Institute of Technology, based in Budapest, which is one area where Imperial College, for example, plays a very important part in leading the climate change agendas, and many institutions across the board participate in that in partnership directly with industry. We have mooted whether the European innovation grouping will have a similar area. That is in discussion at the present time. These are areas where we could foster that.

Where I would say we have a failure and we could do better—and it may not be Europe's fault in its entirety—is that our SMEs do not see the opportunities there for European funding and do not apply for it. The number of applications from British SMEs is very low. I have taken this on board in my own university and we have debated this at the Russell group board, actually asking the question whether universities that are well-versed in the mechanics of application could do more to support our local enterprises in enabling and supporting them on issues surrounding the management of EU contracts and elsewhere. I would say the onus is on us, as universities, to work with our local industry sector to help them extract more value out of Europe. The fact is if you do not apply you do not get, and it is important that we promote the capacity to apply. There certainly is resource there; the issue is that we are not bringing that resource adequately back to the UK.

Lord Kakkar: Do you think, beyond the universities helping SMEs, there is also an argument for the European Union to make its processes less complex in driving business-university relationships?

Professor Sir Leszek Borysiewicz: I think we would all say “amen” to that. It is one of the three avowed pillars of Horizon 2020 which Commissioner Moedas has made very clear—simplification remains one of those areas. We have put forward the case that the real onus comes with its contractual nature; that you sign a contract, in essence, with the EU. This is then audited by EU processes as you would audit other contractual arrangements; it is not a grant in the way you receive from a research council; it is a very different process.

The nature of audit procedures is onerous, if you are unluckily chosen for one of these. If you sit in front of one of the European Union application forms, they are substantial and you need support groups. Those universities that are well versed have the support structures to

be able to do that, and our academics have overcome this, as you can see, by the success rates that they enjoy. Can it be made easier? Yes, it definitely can. Yes, Britain should push for simplification of EU processes, particularly for SMEs. I am aware that if you are running a small and medium enterprise, you have the manpower of seven or eight people; you do not have the manpower of Cambridge University that is capable of overcoming this. For somebody running an SME, this is not a Sunday afternoon pastime; this is why we have to engage in providing greater support, and thinking how we can support those enterprises to make the case that they should be successful participants in the European project.

The Chairman: There are SMEs throughout Europe and throughout the member states. You have already said, Sir Leszek, that SMEs in this country are doing less well than some of their competitors.

Professor Sir Leszek Borysiewicz: Yes, that is correct.

The Chairman: Can you confirm that industry as a whole in the United Kingdom, whether SMEs or larger businesses, is not getting the degree of funding that comparative countries in Europe are getting? Given that simplification is an overriding requirement, can universities make a contribution in any shape or form to help industry as a whole get what we might think an equitable share of European funding for research?

Professor Sir Leszek Borysiewicz: I will also leave it to colleagues to comment, but from my point of view I think we can because we have the expertise and experience; we have the track record to show we can do this very successfully. The issue here is about getting local engagement with LEPs and other areas. As to the issue of how well British industry does as a whole compared to the EU, it is important that we do not just look at the overall sums coming in, but consider whether British industry may necessarily look to Europe as a source of funding that you would seek as a primary area. You need to look at the way and frequency of application from Britain. One certainty in this life is, if you do not apply you will not get. The question is whether we can get enough people knocking on the door to obtain more of this resource.

I believe British universities have a role to play in trying to enhance our capacity to win. This is a competitive game with partners in Europe, but we do need to remember that many of the large-scale industries are multinational and therefore have access to sources of funding from different budgets within the European Union, not necessarily from Horizon 2020 but, for example, loans from the European Investment Bank and other sources. It is important for large-scale industries to choose the most appropriate area, and we have to be careful not to just use Horizon 2020 as a surrogate but to look at the totality of benefit that companies enjoy.

Professor Dame Julia Goodfellow: In one area, space, UK industry has won out a lot and it might be worth the Committee exploring why the UK space industry has benefited perhaps more than others.

Professor Sir Peter Downes: I think it is important that we do not imagine that European collaboration and European funds are the only ways in which we can support an innovative economy and innovation within our industry and commercial base. One of the fundamental problems in the UK is that the expenditure on R&D by business—and this is more extreme in Scotland than other parts of the UK but it is a familiar feature throughout the UK—is low by comparison with any OECD competitors. Therefore, some of the base in R&D that you

need—R&D awareness and the value of R&D in creating innovative elements of your business—is not as well developed in the UK. Therefore, the starting point for interaction, claiming funds and working with the universities is not as strong as it needs to be. We have work to do there alongside encouraging and supporting industry of all scales, but particularly SMEs, to engage in co-funding opportunities. Universities will become horribly stretched if they try to do all of these things, so I think there are also roles for local enterprise partnerships and other things which create regional infrastructure to support all of these activities, in which universities play their part but are not seen as the only means by which this expertise can be developed.

Within the Scottish context, the Scottish Government are currently refreshing their economic strategy. John Swinney, who is responsible for that, is very keen to see innovation at the heart of the Scottish economy, and all the things we have been talking about as a UK-wide issue are writ very large within current Scottish objectives. Both the positives, seeing Europe as a source of collaboration, a source of interaction between universities and businesses and some lessons on how to do that better, will be very important messages for Scotland in the near to medium-term future.

The Chairman: Sir Peter, Sir Leszek and Dame Julia, thank you very much. You have given us very clear evidence today. We are in no doubt about your views now, if we ever were before. There will be a transcript sent in the usual way for minor corrections, and if there is anything you want to add as a result of the questions we have posed today, please feel free to submit that. Thank you very much for your help.