

Russell Group response to the Government Review of the Balance of Competences between the UK and EU: Research and Development

1. Summary

- EU funding streams are key to the continued growth of research excellence in the UK, and to innovation and the creation of economic value. They are an irreplaceable source of funding for UK universities, and for research intensive universities in particular. The EU provides a unique and highly competitive platform for international collaboration.
- The European Research Council (ERC) with its focus on excellence is fundamentally important for UK researchers, particularly as the UK is by far the largest recipient of ERC funding, contributing £1bn to UK universities. This funding enables researchers to pursue fundamental, applied and translational research into the grand challenges facing us, including healthy ageing, clean energy, and food security: research that underpins sustainable economic growth.
- Overall, investment in EU funding streams for research and development generates an excellent return for the UK economy.
- EU actions in relation to research and development complement the UK Government's continued investment in excellent research and innovation, and must not be seen as a substitute for the UK's own investment.
- The emphasis on investment in excellent science in the budget for Horizon 2020 and the simplification of the funding model should mean that the programme will continue to be successful in building a critical mass of knowledge in Europe. We recommend the Commission engage closely with research-intensive universities and their representative bodies when designing new initiatives and research programme themes.
- The impact of EU research and development funding can be increased through an enhanced focus on excellence, a more forward-looking approach to public procurement across the EU and linkage between structural funds and funding for research for newer Member States.
- Wider EU policies such as State aid rules impact on research and innovation as they restrict financial intervention by Member States, putting them at a competitive disadvantage to non-EU territories. However, within the rules, the UK chooses to invest less than the majority of Member States to support industry and services.

2. Introduction

- 2.1 The purpose of The Russell Group is to provide strategic direction, policy development and communications for the 24 major research-intensive universities in the UK; we aim to ensure that policy development in a wide range of issues relating to higher education is underpinned by a robust evidence base and a commitment to civic responsibility, improving life chances, raising aspirations and contributing to economic prosperity and innovation.
- 2.2 We welcome the opportunity to comment on the balance of competences between the UK and the EU in relation to investment in research and development. This is a critically important issue for the UK's future growth. Investment in high quality research is an indispensable component of the UK's economic competitiveness.
- 2.3 The research-intensive universities represented by the Russell Group deliver outputs that are crucial to the UK's knowledge base and innovative capacity, creating the knowledge and scientific breakthroughs essential to innovation, underpinning long-term economic growth and social well-being. They have also played a significant role in the UK's contributions to the Framework Programme's goals, particularly in enabling a 'critical mass' of knowledge in Europe, and creating networks and systems across businesses, universities and research centres across the continent.

3. The importance of EU funding streams in maintaining research excellence in the UK

- 3.1 Action by the EU to invest in research and development has positive impacts across Member States. It can help to build a critical mass of knowledge, expertise and capability across Europe, can add value to action by individual Member States, and provides the basis for addressing common (often global) challenges which we all face. The way in which EU funding streams operate provides a highly competitive platform for international collaboration, enabling Member States to access talent and expertise across Europe and in third countries.
- 3.2 Russell Group universities have participated in over 3,300 FP7 funded projects. Fourteen of the top 50 higher education participants in FP7 are Russell Group universities. In 2011/12, the 24 Russell Group universities received a total of £326 million in research grants and contracts from the EU, compared to £170 million to all other UK universities.¹
- 3.3 The UK benefits from a range of EU funding streams investing in research and development and innovation, in particular:
- 3.4 The ERC, funded through the Seventh Framework Programme (FP7) and soon Horizon 2020, supports 'frontier research' and is highly complementary to national approaches as it focuses on excellence and does not prescribe policy driven outputs. The UK's research-intensive universities have been extremely successful in attracting ERC funding leading to tangible impacts across a wide range of disciplines. The success of ground-breaking projects funded through the ERC has also prompted action by the UK Government; for example:

¹ HESA finance statistics 2011/12

- (a) Manchester University scientist Konstantin Novoselov received one of the first ERC starting grants in 2007 to investigate the “Physics and Applications of Graphene”. With fellow Manchester professor Andre Geim he won the 2010 Nobel Prize for Physics for his work. In 2011, the Chancellor announced capital funding of £50m for the Graphene Global Research and Technology Hub to connect UK researchers and businesses working to commercialise the super strong material. There are now Graphene centres of research excellence at Imperial College London and at Exeter, Manchester, Cambridge, Oxford and Durham universities.

3.5 The EU Marie Curie Action (MCA) programme, also part of the Framework Programme, is focused on the development of human capital, which is central to the future of the UK and EU. A strong base of exceptionally talented scientists and researchers who generate ideas and innovations is key to the ability of any country to compete in a global knowledge economy. Funding to the UK through the MCA scheme has enabled institutions to attract and retain excellent overseas researchers, conferring substantial benefits to the UK research base. Funding through MCA can also generate networks of research partners which become the core of longer-term relationships after initial EU-funded projects have finished.

- (a) The UK has been by far the most successful Member State in attracting Marie Curie fellows from across Europe and globally into the UK – with around 2,953 projects funded compared to our nearest competitor Germany with 1,588 projects.²
- (b) Queen Mary University of London coordinated a series of Marie Curie action funded studies on special ceramics that can function in extremely hot and hostile environments, where most sensors do not, making them very useful in aerospace, advanced industrial processes, the automotive industry, and power generation. This information will soon help produce more sophisticated sensors that enhance monitoring and safety as well as meet energy needs across several industries.

3.6 **EU funding streams are key to the continued growth of research excellence in the UK, and to innovation and the creation of economic value. They are an irreplaceable source of funding for UK universities, and for research intensive universities in particular. The EU provides a unique and highly competitive platform for international collaboration.**

4. Investment in EU research and development funding initiatives represents value for money for the UK

4.1 The UK leads Europe in the quality of our research, out-performing other European countries and ranking second only to the US in its number of world-class universities. The UK has been extremely adept at accessing EU funding streams.

- The UK has won over 16% of all FP7 funding to EU Member States and 20% of ERC funding - far higher than the UK contribution to the EU budget (c. 11.5%) or the UK share of overall EU spending (c. 5.6%).³

² UKRO data for FP7 up to and including 2012

³ Fifth FP7 monitoring report, EU Budget Financial Report 2011

- The UK received €3.7 billion in research and innovation funding from FP7 in 2007-2011, second only to Germany.
- UK researchers have won far more awards from the ERC than our nearest competitor: 841 compared with Germany's 540.⁴

4.2 **The ERC with its focus on excellence is fundamentally important for UK researchers, particularly as the UK is by far the largest recipient of ERC funding, contributing £1bn to UK universities. This funding enables researchers to pursue fundamental, applied and translational research into the grand challenges facing us, including healthy ageing, clean energy, and food security: research that underpins sustainable economic growth.**

4.3 **Overall, investment in EU funding streams for research and development generates an excellent return for the UK economy.**

5. The complementary nature of EU funding

5.1 Robust UK Government funding for research, development and innovation remains crucial to the health of the UK economy and to our future global competitiveness, but EU funding is complementary to this. For example, funding for research, development and innovation at EU level enables the pooling of Member States' resources to address global challenges such as climate change and food security, supporting researchers and innovators to work collaboratively to find solutions. The scale and multinational scope of such work could not be funded by the UK alone and provides added-value to EU involvement.

5.2 As well as boosting key areas of research and allowing activity at a larger scale than might be supported in the UK alone, EU funding can also help to sustain areas of research when funding isn't available at a national level. For example, research in fields such as heritage science and energy management in buildings was funded by the EU during a time when there was little available funding in the UK in these areas. The value of these fields of research is once again being recognised in the UK and, because of EU funding, we still have a core of excellent research capability and capacity on which to build.

5.3 The light touch approach taken by the EU in relation to research and development works well for the UK as action by the EU does not limit action by Member States. For example, the EU is active in areas such as the provision of 'proof of concept' funding through ERC grants in order to translate research results into commercial applications. At the same time, the UK has been free to implement initiatives in this area where the Government sees fit, allowing higher education institutions (HEIs) to expand their innovation and knowledge transfer activity, and to help generate even greater economic impacts.

5.4 However, there are instances where EU initiatives could add greater value by making more effective use of existing centres of excellence and researchers in Europe, rather than investing resources into EU structures. For example, the Joint Research Centre which provides 'independent' advice to the Commission to underpin policy could work more closely with existing centres of excellence such as Russell Group universities in order to tap into expertise and knowledge, rather than focusing on internal institutions.

⁴ FP7 Project and Participants database, released 1 March 2013

- 5.5 We would not support moves by the EU to introduce legislation on the European Research Area in its target to achieve a single market for researchers, knowledge and technology in Europe. For example, intervention to ensure ‘symmetry’ between funding recipients may distort the movement of researchers and ideas and may in the long term harm the research potential of all countries.
- 5.6 **EU actions in relation to research and development complement the UK Government’s continued investment in excellent research and innovation, and must not be seen as a substitute for the UK’s own investment.**

6. Future EU initiatives on research and development

- 6.1 The EU – like the UK – recognises the importance of investment in research and development for growth and international competitiveness. One of the key targets of the Europe 2020 growth strategy is for 3% of the EU’s GDP to be invested in research and development. We welcome the allocation of €70.2 billion for Horizon 2020, the new iteration of the Framework Programme, a 27% increase on the €55 billion budget for the current FP7. The emphasis on investment in excellent science within the budget, with €11.58 billion having been allocated to the ERC (17% of the total budget), is particularly welcome. The Industrial Leadership pillar will also provide opportunities for the UK’s research-intensive universities to enhance industrial engagement and SME collaboration on an international scale.
- 6.2 The Erasmus+ settlement will be beneficial for HEIs across Europe encouraging the sharing of cross-cultural and cross-institutional learning. Students at Russell Group universities benefit in particular from Erasmus, as they make up 50% of all students from UK HEIs taking part in the programme. On a separate note, Russell Group universities are concerned that the EU-backed university ranking system U-Multirank may impact on future eligibility for EU research and mobility programmes, such as Erasmus+. We urge the UK Government to oppose any future linkage between U-Multirank results and eligibility for EU funding initiatives.
- 6.3 The new funding model for Horizon 2020 is a positive change from the FP7 funding model. The reimbursement of 100% of direct research project costs plus an additional 25% to cover indirect costs will simplify the funding mechanism, improve the financial sustainability of the institutions delivering Horizon 2020 actions, and mitigate the risk of underinvestment in infrastructure which would be highly damaging for the UK’s research base. However, the inclusion of PhD tuition fees as eligible costs would be a welcome development.
- 6.4 Following a pilot study on the open access provision of research on a voluntary basis for those in receipt of funding under the FP7, it is proposed that Horizon 2020 will oblige institutions in receipt of EU funding for research to provide access to their research on an open access basis, either via the ‘green route’ with embargos of six or twelve months in place or by reimbursing the costs of publication via the ‘gold route’. The Russell Group is supportive of the principles of open access publishing to ensure that publicly funded research is freely available where possible. However, universities should not have to bear the burden of the costs, which would be prohibitive, and research funding should not be re-purposed to deliver open access policies. We are pleased to see that the Commission is providing the option to publish through a ‘green’ as well as ‘gold’ route, as it is a simple and cost effective way of delivering open access to research publications. It is important that recipients of funding have as much flexibility as possible in how they achieve open access to their research.

- 6.5 It would be useful for the Commission to consult and liaise with the Russell Group more extensively on new initiatives and research programme themes. Involving centres of excellence such as Russell Group universities more directly in the decision-making process would allow Commission officials to take advantage of research expertise and ensure that the priorities of the EU and of Europe's leading universities are more closely aligned. For example, one of the concerns of Russell Group institutions is that there is a problem in accessing proof of concept funds in order to allow universities to develop research into pioneering products. We would like to see proof of concept funding through ERC grants increased and expanded across all areas of Horizon 2020, such that EU funded research can be more widely commercialised.
- 6.6 **The emphasis on investment in excellent science in the budget for Horizon 2020 and the simplification of the funding model should mean that the programme will continue to be successful in building a critical mass of knowledge in Europe. We recommend the Commission engage closely with research-intensive universities and their representative bodies when designing new initiatives and research programme themes.**

7. Ways in which the EU could increase the impact of available funding

- 7.1 The success of the ERC demonstrates the value of focusing EU funding on excellent research. This research is likely to have the greatest impact in the long-term, providing the underpinnings for major shifts in technology and innovation and the basis for whole new fields of knowledge. Excellence as the benchmark for funding should be adopted more widely across EU programmes for research and development and innovation.
- 7.2 Similarly, a greater appetite for risk would be helpful. In some cases EU programmes appear to operate at a level where they can almost guarantee no failure from investment in order to ensure the use of funding is controlled, but this also limits the ability of programmes to explore what could be quite significant opportunities at the boundaries. We welcome developments under Horizon 2020 with the introduction of the 'Fast Track to Innovation' pilot scheme, to increase the participation of industry, SMEs and first time applicants in Horizon 2020, and the expansion of the Future and Emerging Technology programmes, which promote high risk research, to all areas of research and innovation. This should help to enable greater research risks to be taken and innovative approaches that might not be funded at a national level to be developed.
- 7.3 In order to further promote scientific and technological progress and innovation, the EU could take a more forward-looking approach to its public procurement processes. Governments across the EU are the largest customers of goods and services in their own countries and the more that they can become intelligent customers for innovative solutions to their public procurement needs, the more this will help to pull innovation from the research base. In turn, this would catalyse further private sector investment in research and innovation, stimulating the whole research and innovation ecosystem. Providing a 'first customer' for ideas that spin out of EU-funded research would ensure that the value of research investments is captured in the EU.
- 7.4 The promotion of strong research capabilities and capacities across the EU is essential to its ability to compete on a global scale. 1% of the Horizon 2020 budget will be spent on helping institutions boost their capacity to compete for mainstream funding via initiatives such as partnerships with stronger institutions. New 'Teaming' and 'Twinning' initiatives aim to enable the creation of new centres of research excellence and support new partnerships between emerging regional institutions and international research partners. We welcome this development and recommend that the new

'Teaming' and 'Twinning' initiatives focus on the coordination of awards from structural funds with funding for research to ensure that newer Member States are able to build their research capacities in order to reach the level of excellence required to access research funding.

- 7.5 **The impact of EU research and development funding can be increased through an enhanced focus on excellence, a more forward-looking approach to public procurement across the EU and linkage between structural funds and funding for research for newer Member States.**

8. The impact of wider EU policies on research and innovation

- 8.1 EU competences in other areas of policy have indirect impacts on the effectiveness of research and development funding. For example, State aid rules restricting the nature and level of financial intervention Member States can make in relation to industrial support put them at a competitive disadvantage globally with the US, China, South Korea and others investing intensively where EU Member States may be constrained.
- 8.2 For example, the US announced a \$787bn 10-year economic stimulus package in 2009, with the bulk to be spent in the first three years to have maximum impact. Whilst we are not arguing for changes to the rules, which ensure fair competition within Europe and allow aid to public functions such as fundamental research and higher education, they can impact on universities 'economic' activities such as contract research services and spin-out companies. There is also a wider indirect impact on the environment for research and development and innovation through the restriction of State aid across other areas of the economy.
- 8.3 It is worth noting that within the EU, there are significantly different approaches to State aid provision with the UK ranking only 23rd out of the EU 27 on the amount of State aid the Government invests to support industry and services as a proportion of GDP.⁵ There is therefore scope within State aid rules for more targeted investment to particular industries in order to create a business environment conducive to investment in R&D and innovation.
- 8.4 **Wider EU policies such as State aid rules impact on research and innovation as they restrict financial intervention by Member States putting them at a competitive disadvantage to non-EU territories. However, within the rules, the UK chooses to invest less than the majority of Member States to support industry and services.**

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⁵ European Commission DG Competition data
http://epp.eurostat.ec.europa.eu/tgm_comp/table.do?tab=table&plugin=1&language=en&pcode=comp_ncr_08