

ROUNDTABLE REPORT *October 2020*

Unattributed summary of a Royal Irish Academy, Royal Society of Edinburgh, Learned Society of Wales and Foundation for Science and Technology Roundtable on the UK R&D Roadmap and research in the devolved nations, on 7 October 2020

Introduction

- 1 This roundtable brought together 20 Fellows with a wide range of backgrounds and research interests from across the Royal Society of Edinburgh (RSE), Royal Irish Academy (RIA) and Learned Society of Wales (LSW). It was convened to discuss how best to build upon the ambitions and commitments expressed within the 2020 UK Research and Development Roadmap¹ (‘the UK R&D Roadmap’) to enhance research and development (R&D) in the devolved nations of Northern Ireland, Scotland, and Wales.
- 2 The national academies of Northern Ireland, Scotland and Wales are working together to understand what would be required to build research capacity, productivity, and impact in the devolved nations, recognising regional variations within the nations themselves. The Chatham House Rule roundtable, chaired by Professor Graeme Reid, Chair of Science and Research Policy at University College London, built upon the joint response on the R&D Roadmap submitted by the RSE, RIA and LSW to the UK Government in August 2020.²
- 3 The roundtable welcomed the UK R&D Roadmap in particular its emphasis on delivering policy instruments through a place-based approach, its focus on scientific excellence and in supporting and developing people and talent. It was recognised that its emphasis on “place” offers a novel and exciting opportunity to develop the capacity, value, and impact of research within and across the devolved nations and UK.

Background to the discussion

- 4 The UK Government has committed to significantly increasing R&D spending by 2025 as part of its government-wide agenda of levelling-up prosperity across the UK. Despite R&D forming only a minor part of overall Government public spending allocations, there is sufficient evidence to show that growing R&D not only creates new knowledge and trains a skilled workforce but also leads to innovation, creates more productive industries and as a corollary, more well paid jobs and more tax returns to the government.
- 5 As part of the scene-setting for the roundtable, Professor Richard Jones presented on his recent work with Tom Forth for Nesta on harnessing R&D to redress regional economic imbalances.³ His presentation provided a compelling overview of the relationships between R&D spending, productivity, and economic performance across the UK.
 - As a general rule of thumb, UK public R&D investment is highest in areas with existing high levels of productivity primarily in the east and south east of England, and London.
 - Scotland is characterised by strong levels of public R&D investment and lower levels of business R&D. Public R&D spending per head is comparable to London/south-east/east average. An increase in private sector R&D funding of £1.5bn is needed to level up business R&D to the London/south-east/east average.
 - Wales is building its research capacity and base and seeking to increase levels of public and private R&D funding investment.

¹ Accessed at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/896799/UK_Research_and_Development_Roadmap.pdf, 03.11.2020

² https://www.rse.org.uk/wp-content/uploads/2020/08/RSE_LSW_RIA_BEIS_RD_roadmap.pdf

³ The Missing £4 Billion: Making R&D work for the whole of the UK, May 2020 <https://www.nesta.org.uk/report/the-missing-4-billion/>, accessed 03.11.2020

- Northern Ireland has grown business R&D investment very effectively in recent years. A key priority is to grow the level of public funding allocated to R&D.

Recognising the strengths and weaknesses of current R&D systems and funding in the context of the devolved nations

- 6** As a shared starting point, it was noted that **higher education institutions (HEIs) play a critical role in the research ecosystem of each of the devolved nations**. HEIs will be crucial to delivering the ambitions of the UK R&D Roadmap, including bringing together industry and others to develop and deliver regionally based, excellence driven, innovation, skills training, and knowledge creation.

Scotland

- 7** Scotland is characterised by a very strong university research base, a high ratio of public R&D investment and considerable success in winning competitive research funding grants. A key challenge for Scotland is to balance the existing high level of publicly funded revenue support for the research base with encouraging more translational research and business R&D investment and leveraging capital for research infrastructure development. Access to finance and capital for small and medium sized enterprises (SMEs) to engage in the translational research journey – from idea to delivery of a profitable product at market – was viewed as key to building business engagement with research and to the future unlocking of increased levels of Business Enterprise Research and Development (BERD) funding for Scotland.
- 8** Within Scotland, it was noted that there are very differing levels of research investment and activity between areas such as central Scotland which has major research centres of excellence and secures high levels of competitive public R&D funding and areas such as the Highlands and Islands, which do not enjoy the same levels of R&D intensity.
- 9** It was felt that Scotland should consider strategies to enhance business R&D to achieve maximum value and impact from its historic strong levels of public investment in R&D. It was noted that the Scottish Government aims to double business R&D between 2015 and 2025 through interventions such as increasing direct support for business R&D and creating a National Manufacturing Institute for Scotland centred around translational research and

skills. The establishment of the Scottish National Investment Bank, due to launch by the end of 2020, is another potential means of catalysing private sector R&D investment.

Northern Ireland

- 10** Northern Ireland is well placed to make a strong case for enhanced levels of public R&D investment to capture R&D spillovers from existing markets and sectors. It has a lower than UK average level of public R&D investment but a notably high level of business R&D investment and activity. Similar to Scotland, Northern Ireland's industry base is predominantly made up of SMEs. However, it has had real success in building business R&D investment in the past decade, and a growing track record of success in translational research in areas of critical mass including cyber security, secure information technologies, data science and scalable computing.
- 11** European Regional Development Funds (ERDF) were agreed to have played a fundamental role in building research capacity and translation research relationships across academia and industry and the critical role played by Quality-related Research (QR) funding in supporting research excellence across the research base was acknowledged. Future critical issues identified in the discussion include growing the level of public R&D investment particularly in translational research, developing, retaining and attracting talented researchers particularly early career researchers, and access to funding streams similar in objective and structure to the ERDF.

Wales

- 12** Welsh R&D capacity is building from a low base comparatively but with promising green shoots pointing to potential clusters of excellence. The contribution of ERDF funds in building the research base and enabling emerging areas of critical mass such as that of semi-conductor research was recognised. A replacement for the ERDF funds through the instruments of the UK R&D Roadmap is viewed as crucial to continue the momentum. It was felt that Wales would benefit from a multi-pronged approach to drive public and private R&D investment. A clear priority is to build its research capacity across the research base and to win more competitive public R&D funding. A key first step is to grow overall research volume by, for example, enhanced support to encourage researchers to develop bids for research grants.

From “blue skies” to market

- 13** It was felt that the balance between and, the effectiveness of, the different funding streams for research needed to be clearly considered in the implementation of the Roadmap’s policy instruments. Policy instruments to build diverse and excellent research systems in which building capacity across the base, supporting blue skies research, and achieving impact through translational research are equally valued were considered critical to achieving the ambitions of the UK R&D Roadmap.
- 14** There was strong agreement on the need for public R&D investment to build the future knowledge base and skilled workforce to meet future unknown and known economic demands as well as responding to existing or emerging areas of sectoral / business strengths. The point was made that for Northern Ireland and Wales, both of whom are very much in a capacity building phase, public funding delivered through QR plays a huge role in building research excellence and critical mass and this raises the question as to the nature of the future relationship between these existing streams of funding and those to be delivered under the Roadmap.
- 15** The discussion revealed how even within – as well as across – devolved nations there were differing “asks” from within the research community. Disciplines with well-established research bases and strong industry links would welcome a greater focus on translational research within public R&D funding bases. Measures to enhance industry-academia linkages are therefore likely to fall upon fertile ground.
- 16** However, each devolved nation has a very different starting point. Northern Ireland has well established areas of critical mass characterised by strong existing academia-industry relationships, but which need greater access to public R&D funding for translational research. There are hugely encouraging green shoots of critical mass in Wales for example, semi-conductors research, but to take advantage of these areas of emerging strength Wales needs public R&D investment in research capacity (e.g. researcher training) and access to translational research funds to grow the industry-academia interface. It was noted that despite its success in leveraging publicly funded support for R&D, Scotland performs well below the UK average in terms of securing Innovate UK funding, which again demonstrates the importance of increasing business-led R&D in Scotland. SMEs are a particularly critical enterprise sector across the devolved nations and careful consideration needs to be given to how UK-wide schemes, including the proposed Shared Prosperity Fund, can support SMEs engagement in R&D.
- 17** Areas or disciplines which have not yet achieved a level of critical mass emphasise the need for policy instruments to build research capacity and support excellence. There was general support for the Roadmap’s commitment to developing an R&D People and Culture strategy. The importance of additional measures to help retain as well as train early career researcher talent was emphasised in the context of all of the devolved nations.
- 18** Finally, it was felt that Covid-19 provided a clear example of the need for, and benefits of, a dual approach to R&D investment which supports the building of expertise and capacity across the full range of research disciplines and research activities from blue skies to translational. Diverse areas of knowledge and research across the sciences, humanities and social sciences will continue to need to be drawn upon and come together to help understand and address the substantial public health, economic, social, educational and cultural challenges that the pandemic is posing.

Research governance and structures

- 19** The manner in which public research policy is developed, implemented and assessed through selected policy instruments was a strong theme within the discussion. The complexity of existing research governance and implementation structures across the UK was much noted. It was felt that the devolved nations lack adequate representation on UK-wide decision-making R&D bodies. There was general agreement that the membership of these structures should be characterised by widespread representation and inclusion from across the four nations of the UK. For example, it was suggested that the current UK Research and Innovation (UKRI) governance structure could be usefully broadened to include not only Research England but also the principal research funding councils/ agencies of Scotland, Wales, and Northern Ireland in addition to representation from the administrative structures of the devolved nations.
- 20** The suggestion was made that a R&D Levelling-Up Commission with full representation from the devolved nations’ governments and English regions should be established to contribute to and monitor the UK Government’s progress in achieving the ambitions of the R&D Roadmap.

21 It was agreed that careful consideration was needed on the potential channels through which new and additional UK research funding streams should be delivered to best support research activity and enhance the wider research base within the devolved administrations. Further consideration should be given to the use of forums to cross-connect UK and regional initiatives wherever possible to amplify learning and knowledge exchange. Greater use of place-based funding instruments and devolution of R&D funding to the devolved nations should be considered. However, the point was made that the devolved nations do not share a common structure for research funding administration, including different funding formulae for awarding QR (Research Excellence Grant in Scotland) funding. It was also noted that QR funding and ERDF support are considered particularly critical to building future research capacity across the academic base in Wales and Northern Ireland.

22 Consideration should be given to identifying the principles that would inform place-based funding instruments, the institutional capacity and knowledge needed and the representation of local and regional research, industry and society within the governance structures overseeing devolved funding instruments. Reference was made to the recently agreed Northern Ireland City Deals and the City Region Deals in Scotland as examples of potential mechanisms through which to implement additional funding for academia-industry R&D within the context of an agreed strategic framework. They are also a means of enhancing collaboration among a range of institutions, organisations and funders including through the establishment of shared infrastructure which can help build critical mass.

The importance of political and scientific leadership in the devolved nations

23 Examples offered within the discussion of successful R&D clusters and centres of excellence from within the devolved nations clearly spoke to the importance of local leaders in building political and public support and buy-in to the need to invest in research to deliver economic, societal and cultural impact for the community. **The scientific leadership within each devolved nation must continue to build strong relationships with their respective**

political and administrative leaders to develop awareness of the value and impact of public research and how it can contribute to local and regional prosperity. The Northern Ireland City Deals in Belfast and Derry-Londonderry were pointed to as an example of a framework for strategic investment developed and agreed by the major political, social, industrial, and academic leaders across these regions.

Next steps

24 This roundtable was an initiative of the Celtic Academies Alliance, a partnership of the Royal Society of Edinburgh, Learned Society of Wales and the Royal Irish Academy. Our Alliance aims to promote cooperation and collaboration and inform public policy, especially in the fields of higher education and research. It also seeks to strengthen understanding of devolved issues and arrangements and the interconnections between reserved and devolved policy.

25 As multidisciplinary national academies, we are well placed to support the development of the UK's future R&D strategy. This includes drawing upon our extensive networks so that the R&D strategy is informed by, and meets the needs of, the devolved nations as well as the UK as a whole. We can also play a valuable role as independent brokers, including facilitating and supporting dialogue between the different levels of government. We will continue to engage with the Department for Business, Energy and Industrial Strategy, respective devolved governments and research funding councils and bodies as the UK's future R&D strategy is developed and implemented.

Additional Information

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