

Russell Group response to Commons Science and Technology Committee inquiry into the balance and effectiveness of research and innovation spending

1. Summary

- The Government's commitment to increase UK spending on R&D to 2.4% by 2027, with a longer-term target of 3%, is a sensible investment in the UK's future. Research carried out at our universities in 2015/16 alone contributes £34 billion to the economy and our universities are ready and willing to do even more to support economic growth and enhance the UK's international competitiveness through R&D. Achieving the target will require increased investment from Government as well as from the private sector.
- The UK's science and research base is a national asset and it is imperative that publicly-funded research remains sustainable in order to ensure the long-term health of R&D in the UK. A holistic approach to university funding, which recognises the links between teaching and research and innovation is needed.
- The dual support system plays an essential part in sustaining research of the highest quality, ensuring the UK's leading universities remain internationally competitive. UKRI should ensure Quality-Related (QR) research funding is strongly supported alongside challenge-based funding. We also support increased funding for equivalent streams in the devolved nations.
- Whilst the planned increase in UKRI funding is very welcome, much of the additional funds are linked to Official Development Assistance (ODA) or the National Productivity Investment Fund. Our universities are engaged extensively in these programmes, but there are concerns that where core Research Council budgets are being squeezed this could impact funding for blue skies and responsive mode research as well as support for postgraduate researchers.
- Russell Group universities successfully attract around £2 billion a year from business and can play a role in helping to boost private investment in R&D. Schemes such as HEIF, QR, RPIF and KTPs have been proven to leverage private investment and support for these schemes should be enhanced. Removing barriers to business-university collaboration by reforming VAT rules and qualification for R&D tax credits should also be considered.
- Russell Group universities are drivers of place-based innovation and deliver impact well beyond their local economies. UKRI should ensure it makes best use of the Science and Innovation Audits and other tools to identify and map areas of genuine excellence across the UK and ensure they are funded appropriately.

2. Context

- 2.1 The Russell Group represents 24 leading UK universities which are committed to maintaining the very best research, an outstanding teaching and learning experience and unrivalled links with business and the public sector. We welcome the opportunity to contribute to the Committee's inquiry into the balance and effectiveness of research and innovation spending.
- 2.2 The Industrial Strategy sets out the ambition for the UK to be the world's most innovative economy by 2030. The UK approaches this target from a position of strength, due in part to the performance of its world-class universities: the World Economic Forum ranks the UK 2nd

globally for the quality of our scientific institutions.¹ The UK ranks top for the impact of our research² and over two thirds of the country's world-leading research is carried out at Russell Group institutions.³

- 2.3 Russell Group universities are drivers of economic growth, contributing £86.8 billion to the UK economy each year.⁴ Our universities are playing a key role in delivering the Industrial Strategy and want to support the Government in achieving its ambition to boost R&D investment and support a thriving knowledge economy in the UK.

3. Financial sustainability

- 3.1 The Government's commitment to increase UK spending on R&D to 2.4% by 2027, with a longer-term goal of 3%, is very welcome and is a sound investment in the UK's future which will help boost our international competitiveness; this will be especially important after Brexit. We recognise this is a whole economy target, which will require additional investment from both public and private sources. There is good evidence to demonstrate that public investment in R&D leverages additional private investment, with knock-on impacts for the economy.⁵ For every £1 of public research funding they secure, Russell Group universities deliver an average return of £9 to the UK economy.⁶
- 3.2 Universities are already making significant contributions to the Government's Industrial Strategy and are poised to do even more.⁷ With a stable and secure funding environment where the long-term sustainability of research is considered as part of a holistic approach to university funding, they can maximise their potential in supporting the ambitious aims of the strategy.
- 3.3 According to data published by the Office for Students (OfS), there is a "substantial deficit" in research funding, amounting to nearly £3.4bn in 2016/17 (data for England and Northern Ireland only) with universities unable to recover the full economic costs (FEC) of conducting research from any sponsor – including the Research Councils, government departments and charities.⁸ The OfS notes that whilst universities in England and Northern Ireland (the only level this data is available for) were able to recover 77.8% of FEC for research in 2010/11, this dropped to 70.7% in 2016/17 once a small one-off benefit from the Government's RDEC scheme had been accounted for. This demonstrates the increasing financial pressures on universities as they seek to perform one of their core missions.
- 3.4 The Government has previously promised that the Research Councils would sponsor research at 80% FEC, but the latest data indicate recovery at 71.8% FEC (a deficit of £653m). UK Research and Innovation (UKRI) is evaluating balanced funding across its Councils and we hope that it will look seriously at how to deliver 80% FEC for Research Council sponsored funding in future. UKRI will also need to be mindful of possible changes elsewhere in university funding which might arise from the Government's post-18 review

¹ [World Economic Forum Global Competitiveness Index](#), 2017/18 edition

² International Comparative Performance of the UK Research Base, report by Elsevier for BEIS (October 2017) - the UK ranks first amongst its comparator countries by field-weighted citation impact, an indicator of research impact and quality.

³ REF 2014 – 68% of 4* world-leading research is concentrated in Russell Group universities.

⁴ The Economic Impact of Russell Group universities (November 2017): <https://russellgroup.ac.uk/news/economic-impact-of-russell-group-universities/>

⁵ See Haskel, J., & Wallis, G. (2010). 'Public support for innovation, intangible investment and productivity growth in the UK market sector' and Haskel, J., Hughes, A., & Bascavusoglu-Moreau, E. (2014). 'The economic significance of the UK science base: a report for the Campaign for Science and Engineering'.

⁶ The Economic impact of Russell Group universities, 2017.

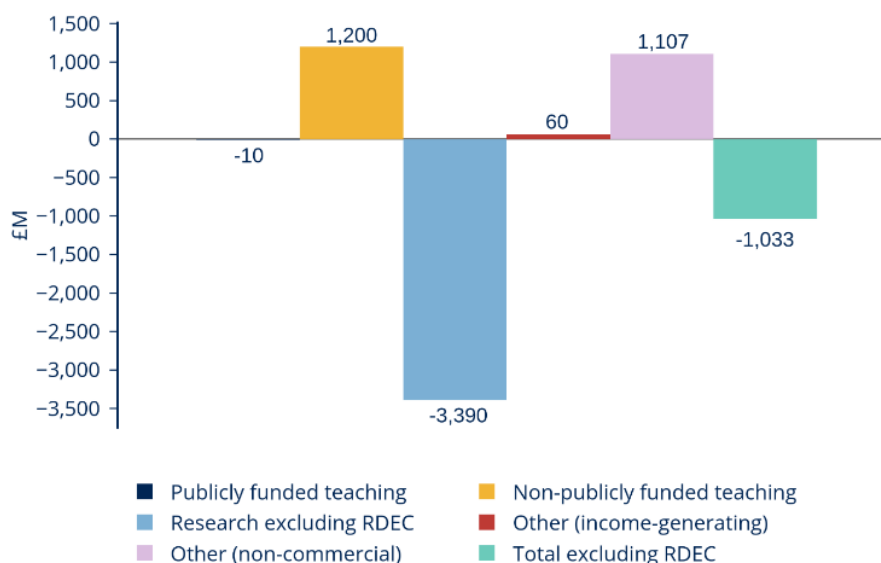
⁷ For more information on how Russell Group universities contribute across all five themes of the strategy, see our briefing paper: <https://russellgroup.ac.uk/media/5697/universities-at-the-heart-of-the-industrial-strategy-march-2018.pdf>

⁸ OfS Annual TRAC 2016-17 Sector analysis: <https://www.officeforstudents.org.uk/publications/annual-trac-2016-17-sector-analysis/> - Figure 1 is taken from this source.

and/or the ONS review of accounting for income-contingent student loans in government finances. Should either of those reviews result in a cut in funding for universities on the teaching side, there is a serious risk that research and innovation activities will also be affected. Any significant change in the balance of funding for teaching may therefore need levels of research recovery to be enhanced (i.e. to levels well above 80% FEC on average) to compensate.

- 3.5 Universities also report increasing demands to provide matched funding for research projects and UKRI could also usefully look into this in more depth to ensure the right balance between successfully leveraging private investment and ensuring a fair and sustainable approach to funding.
- 3.6 Universities are complex organisations, undertaking a range of different activities at scale including education, research, knowledge exchange and community engagement. As one of the few areas of university activity which generates a surplus (see figure 1), income from international student fees plays an important role in maintaining the sustainability of research.⁹

Figure 1: TRAC full economic cost surplus/(deficit) by activity, 2016-17 (higher education institutions in England and Northern Ireland)



- 3.7 Any future restrictions on the ability of universities to attract international students would impact their ability to conduct world-leading research and to teach domestic students. The Home Office therefore has an important role to play in ensuring UK R&D is supported (both financially, as well as to ensure access to talent and skills). Indeed, close working between Home Office, BEIS, Treasury, DfE and the OfS is needed to take a holistic view of how the UK research endeavour can remain sustainable.
- 3.8 This is especially important in the context of the Government’s review of post-18 education and funding. The Government has set out its desire to make higher education more affordable for students, whilst at the same time being clear that recommendations from the

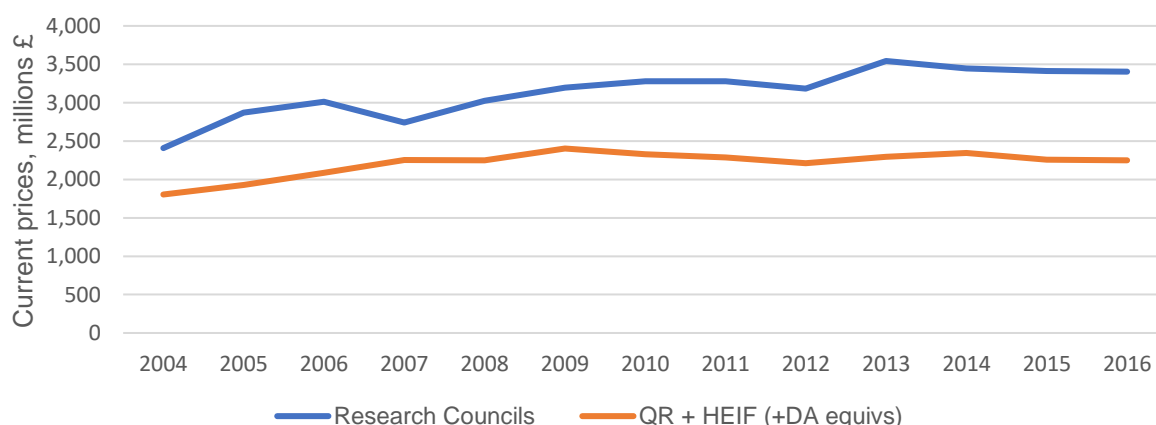
⁹ https://www.officeforstudents.org.uk/media/1866c816-2c9f-423f-8f28-fe37a232e477/ofs2018_28.pdf. Note that the two main surplus bars on this figure relate to international student fee income above costs and to non-commercial income such as investments, donations and endowments.

review “must be consistent with the Government's fiscal policies to reduce the deficit and have debt falling as a percentage of GDP”.¹⁰ There is therefore a risk there could be less funding available for universities in future. According to the terms of reference, the recommendations of the review must “support the role of universities and colleges in delivering the Government's objectives for science, R&D and the Industrial Strategy”. The impact of any reduction in university income on research therefore needs to be considered very carefully.

4. The dual support system

- 4.1 The Industrial Strategy is focused on the twin aims of boosting productivity and ensuring this prosperity is shared across the UK. History has shown it is impossible to predict where the next big research breakthrough will come from. Maintaining a strong and diverse research base is therefore a strategically sound way of ensuring the UK can maximise opportunities for innovation. Maintaining the balance between Quality-Related (QR) research funding¹¹, which can be used to fund long-term or risky research, and challenge-based funding which will be delivered primarily through the new Industrial Strategy Challenge Fund, will be crucial to this. In particular, QR is needed to ensure there is a pipeline of new ideas to underpin innovation in areas which may be transformative in how we understand and address the global challenges of the future.
- 4.2 The Higher Education and Research Act (HERA) recognises the critical importance of the dual support system by providing a legal reference to the balanced funding principle. When looking at the relationship between these two arms however, it is worth noting that funding for QR added with Higher Education Innovation Funding¹² as a proportion of Research Council funding has fallen from 79% in 2004 to 66% in 2016.¹³ As the graph at Figure 2 shows, the gap between the two elements of the dual support system has grown over time.

Figure 2: Funding provided in the UK through the two elements of the dual support system over time



- 4.3 QR funding is vital for the vibrancy and sustainability of UK research. Quality-Related ‘QR’ research funding gives universities the flexibility to deploy resources into pioneering new research areas: we welcome the Industrial Strategy’s recognition of its vital importance and

¹⁰ <https://www.gov.uk/government/publications/review-of-post-18-education-and-funding-terms-of-reference>

¹¹ This includes Research Excellence Grants (REG) in Scotland, and mainstream Quality-Related (QR) Grants in the other three nations

¹² HEIF and equivalent streams outside England

¹³ Russell Group analysis of ONS data on UK government expenditure on science, engineering and technology, 2016. When looking at England only, funding for QR and HEIF as a proportion of RC funding has fallen from 60.3% in 2004 to 52.3% in 2015.

its commitment to boost support for QR. From the development of insulin drugs at the University of York, to the discovery of graphene at the University of Manchester, QR funding has been used to keep UK universities at the cutting-edge of research. As the only form of public funding for research that gives universities a high degree of autonomy over its deployment, QR allows universities to¹⁴:

- **Respond quickly to emerging opportunities**, giving them a strategic edge against international competitors
- **Support research in areas which may become key priorities in the future**, such as the work at Durham University on low-carbon heating solutions, which has become increasingly important due to the Industrial Strategy¹⁵
- **Engage in long-term strategic planning**: as a regular and predictable source of funding, QR allows universities to commit to long-term investments or partnerships with business, unlike project funds, which can be short-term in nature. The University of Glasgow is using Research Excellence Grant funding as part of its £1 billion investment into expanding and upgrading its campus and research facilities over the next 10 years
- **Leverage funding from business and engage in collaborations with new partners**: QR funding allows universities to share risk with businesses via co-funding. For example, Queen's University Belfast invested around £3 million of its QR funding to support a joint venture with Wrightbus to establish the Wright-Tech Centre research facility. The university's funding attracted more than £6 million in investment from Wrightbus and led to an additional grant of over £3 million from Innovate UK.
- **Support businesses to grow and innovate**, such as at Queen Mary University of London, where QR funding together with funding from the GLA was invested to set up and support the Queen Mary Bioenterprises Innovation centre, the largest purpose-built commercial laboratory space available for rent in London. The centre has had significant impact, assisting around 200 businesses and supporting 430 full time jobs.
- **Support staff**, in particular new academic staff who may not yet have won independent research funding, but who show potential; they may be early-career academics or researchers joining universities from overseas or from the private sector, for example.

4.4 Evidence shows universities that have higher levels of research funding (including from QR) are able to generate more research income from other sources.¹⁶ In other words, the more QR funding allocated to a university, the more evidence of external organisations being willing to pay for a range of research activities and commercialisation.¹⁷ UKRI should therefore examine carefully the balance between the two streams of the dual support system and seek to increase support to QR in order to protect the vitality of the research system in the UK.

4.5 As QR and HEIF (and equivalent streams in the devolved nations) are considered together as part of the balanced funding principle, attention should also be paid to ensuring an appropriate balance between funding for basic blue skies research and knowledge exchange. These streams serve distinct purposes and should not be considered interchangeable. In fact, HEIF is not provided in all parts of the country and funding of this nature should be consistently available across the UK, as previously recommended by the Science and Technology Committee.¹⁸

¹⁴ Wellcome Trust has published a helpful summary of how universities use QR funding, which can be accessed here:

<https://wellcome.ac.uk/sites/default/files/empowering-uk-universities-how-strategic-institutional-support-helps-research-thrive.pdf>

¹⁵ <https://russellgroup.ac.uk/policy/case-studies/an-alternative-low-carbon-solution-for-heating/>

¹⁶ *The Economic Significance of the UK Science Base* (March 2014) <http://www.sciencecampaign.org.uk/resource/UKScienceBase.html>

¹⁷ *A Review of QR Funding in English HEIs: Process and Impact* – a report to HEFCE by PACEC and Centre for Business Research, Cambridge (December 2014).

¹⁸ 'Managing intellectual property and technology transfer' (8 March 2017).

4.6 It should also be noted that within QR, the value of the Charity Research Support Fund (CRSF) has fallen over time, from 28p of CRSF for every £1 received by universities from charity funders in 2010/11 to under 20p of CRSF per £1 in 2017/18. In the same period, charity funding has increased from £1.14bn to £1.6bn. CRSF allows universities to bid for, and underpin, substantial amounts of research funding from the UK's third sector organisations that might otherwise go overseas. A specific commitment to ensure the CRSF element of QR is set at a sustainable level through additional government investment would be welcome to enable the UK to retain charity research funding.

5. Changes in funding across the Councils of UKRI

5.1 Budget allocations to UKRI and the wider ring-fences managed by BEIS were recently published for the years 2017/18 to 2020/21.¹⁹ The figures reveal an overall increase in funding, which is very welcome. However, they also show that an increasing proportion of the UKRI budget will come from funding sources tied to Overseas Development Assistance (ODA) and Industrial Strategy goals via the National Productivity Investment Fund (NPIF) (19% in 2019/20, up from 10% in 2017/18).

5.2 If funding ring-fenced for ODA and Industrial Strategy goals is excluded, Russell Group calculations indicate that 5 out of the 9 Councils will experience falls in their core budgets over the period 2017/18-2020/21. If we include the impact of inflation on figures for 2019/20, this rises to 6 out of the 9 Councils.²⁰

Figure 3: Core UKRI Council budgets, once National Productivity Investment Funding (NPIF) and ODA funding removed (Russell Group calculations)²¹

Council (£m)	2017-18	2018-19	2019-2020	Difference 2019/20 – 2017/18 (%)
AHRC total (Change from previous year)	101	102 (+1)	110 (+8)	+9 (9%)
BBSRC total (Change from previous year)	413	390 (-23)	399 (+9)	-14 (-3%)
EPSRC total (Change from previous year)	1,024	1,114 (+90)	1,079 (-35)	+55 (5%)
ESRC total (Change from previous year)	188	187 (-1)	178 (-9)	-10 (-5%)
MRC total (Change from previous year)	666	653 (-13)	641 (-12)	-25 (-4%)
NERC total (Change from previous year)	423	411 (-12)	375 (-36)	-48 (-11%)
STFC total (Change from previous year)	663	714 (+51)	690 (-24)	+27 (4%)
Innovate UK total (Change from previous year)	698	719 (+21)	684 (-35)	-14 (-2%)
Research England total (Change from previous year)	1,972	2,160 (+188)	2,259 (+99)	+287 (15%)
Total Core Council budgets (Change from previous year)	6,148	6,450 (+302)	6,415 (-35)	+267 (4%)

¹⁹ BEIS (2018) The allocation of funding for research and innovation:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/731507/research-innovation-funding-allocation-2017-2021.pdf

²⁰ BBSRC, ESRC, MRC, NERC, Innovate UK (STFC once inflation is taken into account)

²¹ Figures derived from BEIS (2018) The allocation of funding for research and innovation.

- 5.3 The trend towards a greater amount of funding being provided through NPIF and ODA is likely to have an impact on the Councils' ability to fund core activities, including responsive mode funding and postgraduate research training. Responsive mode funding is especially valuable because it allows researchers at the forefront of their disciplines to identify the research challenges of the future; blue skies and responsive mode research can yield significant returns on public investment as they allow researchers to be ahead of the thinking of mass markets. To maintain the strengths of the current system it will be important for UK research strategy to continue to balance top-down policy with bottom-up approaches. Pressure on core Council budgets could impact their ability to contribute to this work, make strategic decisions and/or deploy funding to where it is needed.
- 5.4 Investment across a breadth of disciplines is also necessary to support the vitality of the UK research base. We note that arts, humanities and social sciences (AHSS) research may be more at risk due to a combination of factors: funding for AHRC has remained at around 2-3% of total Research Council funding since 2004 and funding for ESRC has fallen from 7% to around 3%; QR budgets (which disproportionately support AHSS disciplines) remain relatively static; and the Industrial Strategy puts a much stronger emphasis on STEM. Any changes made to the balance of funding between the Councils should be done in consultation with them, be evidence-based and have a clear understanding of the potential impact of any changes.

6. Delivering the commitment to 2.4%

- 6.1 The pledge to boost spending to 2.4% will involve an increase in investment of around £20 billion a year by 2027.²² As indicated by the Industrial Strategy Green Paper, the current balance between public and private spending (1:2) roughly reflects that of our international competitors. If this balance is to be maintained, this means around a third of the additional investment will need to come from public sources and two thirds from the private sector.
- 6.2 Boosting foreign direct investment (FDI) has the potential to contribute significantly to the 2.4% target. Globally, the top 1,000 firms together invest over £500bn each year in R&D outside the UK. If the UK were able to capture an extra 1% of that amount, £5bn would be added to UK business R&D annually.²³ It should be recognised that the strength of the UK's research base – in particular the strength of its established research clusters – is a key factor in attracting FDI. For example, universities in Scotland are cited as a determining factor in almost half of all FDI projects that come into the country.²⁴
- 6.3 Russell Group universities successfully attracted around £2bn from business in 2016/17.²⁵ They have a wide range of connections with different businesses across many sectors and are ready and willing to do more in this area. Policy interventions which would remove the barriers to university-business collaboration and boost private investment in R&D to help reach the 2.4% target could include:
- **Enhancing existing funding streams that allow universities to attract and leverage external investment:** HEIF is very effective at developing knowledge-based interactions between universities and businesses, delivering an average return of £9.70 for every £1 invested. For example, the University of Leeds established the Institute for High Speed

²² Based on figures taken from CaSE submission to House of Commons Science and Technology Committee Inquiry into the balance and effectiveness of research and innovation spending (September 2018).

²³ Based on analysis by Professor Graeme Reid at UCL: <https://www.theguardian.com/science/political-science/2018/jan/04/the-government-has-promised-more-rd-where-will-the-money-come-from>

²⁴ Grow, export, attract, support: Universities' contribution to Scotland's economic growth, Universities Scotland (2013)

²⁵ This includes through a combination of contract and collaborative research, the provision of consultancy and Continued Professional Development, use of facilities and equipment, and IP income through licensing and spin-out of new companies. HESA HEBCI survey.

Rail, using £75,000 of their HEIF funding to leverage a £10m investment from their local LEP, with the new centre attracting rail industry partners to locate in Leeds. The university has also bid for £12m of RPIF funding, which has been matched with £24m investment from the rail industry. QR and HEIF are also used to move innovations further up the technology readiness scale past proof of concept and proof of market stage. With venture capital firms reluctant to invest in unproven or risky technologies, universities often use their own funding to 'de-risk' ideas and encourage inward investment. Boosting HEIF and QR would help universities bring in more private R&D investment. Given its effectiveness, HEIF equivalent funds should also be made available in the Devolved Administrations. Based on eligibility and average funding levels in England, this would amount to: £14m in Wales, £6m in Northern Ireland and £28m in Scotland being invested in innovation.²⁶

- **Ensuring tax rules and other regulations do not act as barriers to collaboration:** Russell Group universities work with over 20,000 SMEs a year, providing them with the tools to realise real productivity gains, the research and commercialisation expertise to deliver new products and services, and skills training to upskill the current workforce. Introducing a targeted VAT exemption for new university buildings used for collaboration with business would remove the disincentives in the current system and help support further economic growth and innovation. One of the barriers to doing this in the past was because VAT rules are set by the EU – the UK's exit from the EU could now present an opportunity to improve the tax system for collaborative R&D and innovation in the UK. The eligibility criteria for R&D tax credits are also too complicated for many businesses. Simplifying these rules by allowing research conducted with a university to be automatically eligible for tax relief would help encourage more businesses to engage in R&D collaboration.
- **Supporting existing programmes that allow universities to build partnerships with business, such as the Connecting Capability Fund, Strength in Places Fund and Knowledge Transfer Partnerships (KTPs):** to encourage SMEs to engage in R&D, many universities use KTPs to 'inject' absorptive capacity into them. A significant scaling-up of the number of KTPs would help boost innovation in SMEs and help meet demand for these schemes from business.
- **University Challenge Funds** were previously successful and helped establish both the successful SETsquared partnership²⁷ (comprising the Universities of Southampton, Exeter, Bristol, Bath and Surrey) and Oxford University Innovation.²⁸ Another University Challenge Fund scheme could be launched, building on and learning from previous success.

7. Place

- 7.1 Russell Group universities are drivers of place-based innovation, working with LEPs, City Regions and local authorities to provide local leadership and help to develop local innovative capacity and promote the creation of highly-skilled jobs. At the same time, it should be noted that our universities deliver impact well beyond their local economies and regions. For example, the University of Birmingham's High Temperature Research Centre is a joint

²⁶ These figures are based on calculations that 78% of English institutions qualify for HEIF funding and are in receipt of an average of £2m each

²⁷ It has been estimated this partnership will contribute nearly £27 billion to the UK economy by 2030:

<http://www.setsquared.co.uk/news/201808/setsquared-set-contribute-%C2%A3269-billion-uk-economy-and-22000-jobs-2030>

²⁸ In 2016 OUI generated over £22m in revenue, managed over 850 licencing and consultancy deals and secured £14m in translational research funding: <https://innovation.ox.ac.uk/about/>

partnership with Derby-based Rolls Royce and the University of Liverpool is working with Kent Police to provide solutions to criminal justice and terror incidents.

- 7.2 Public funding for research in the UK is allocated on the basis of international excellence and this is a critical feature of our system which drives up the quality of research and supports the principle that the best science should be funded, wherever it is found.
- 7.3 Evidently, R&D expenditure is higher in some regions of the country than others (ranging from £629 million a year in the North East up to £6.7 billion in the South East), but as a proportion of GVA in those regions the picture is very different – see figure 4.²⁹

Figure 4a: Amount of R&D expenditure performed in the UK by sector, country and region

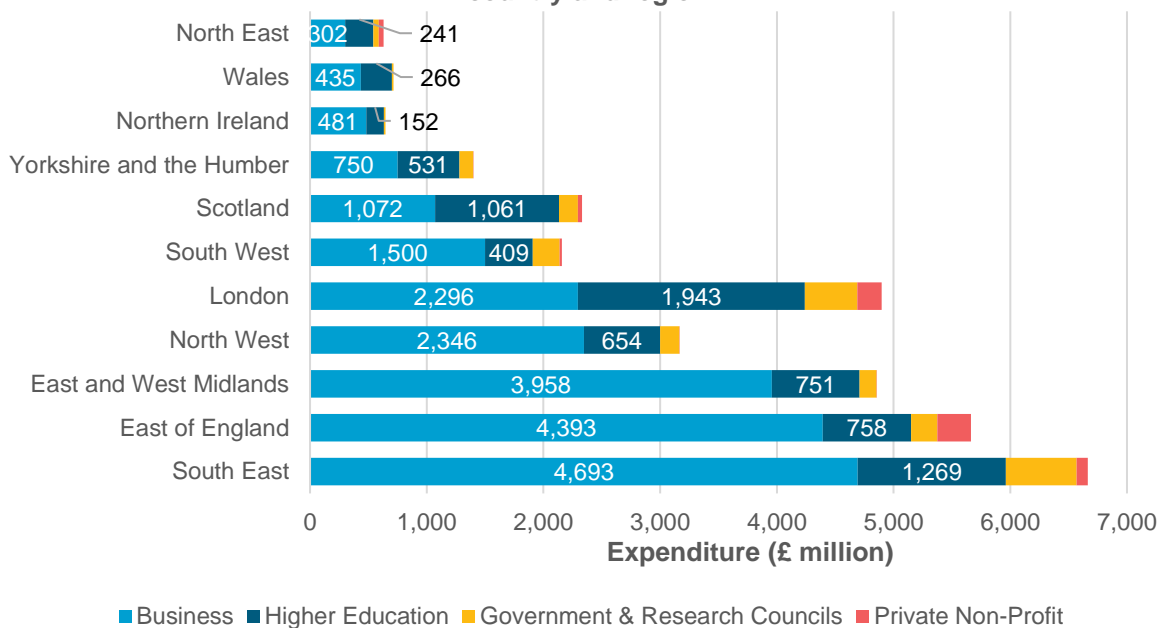
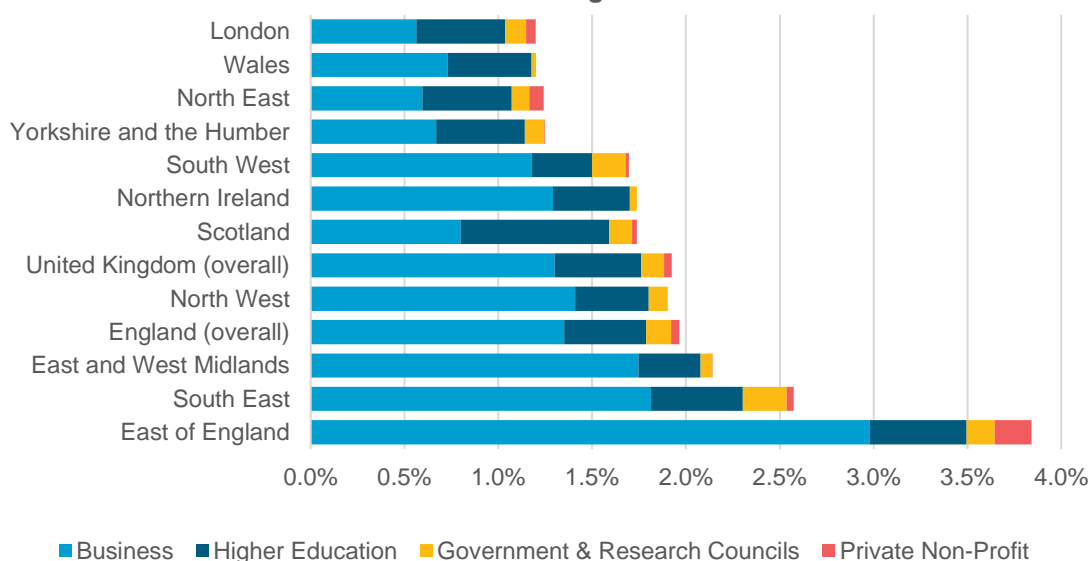


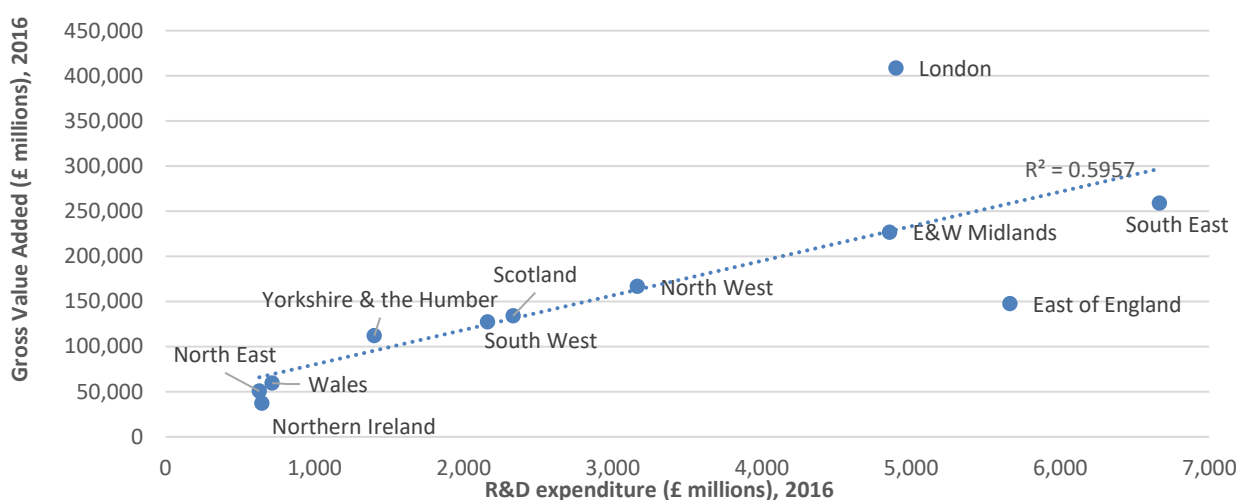
Figure 4b: R&D expenditure performed by sector, country and region as a % of regional GVA



²⁹ ONS Statistical bulletin: Gross domestic expenditure on research and development, UK: 2016. We have excluded 'England' overall from the figure 4 as expenditure is accounted for in the regions of England.

7.4 So whilst there are clear differences between the regions, the expenditure figures alone do not give us the full overview of what is a much more complex picture. The table at **Annex A** presents R&D expenditure and university research income in the different regions and countries of the UK alongside other key indicators including number of research staff, research power (drawing on the REF 2014 results), the population of the region and the strength of the economy to help present a wider view of activity in the regions. By looking at the R&D expenditure and the Gross Value Added (GVA) in the different regions of the UK together, we can see there is a correlation between the two (see figure 5).³⁰ This suggests that a more prosperous economy is linked to (although not necessarily caused by) investment in R&D.

Figure 5: Correlation between R&D expenditure and GVA in different regions of the UK

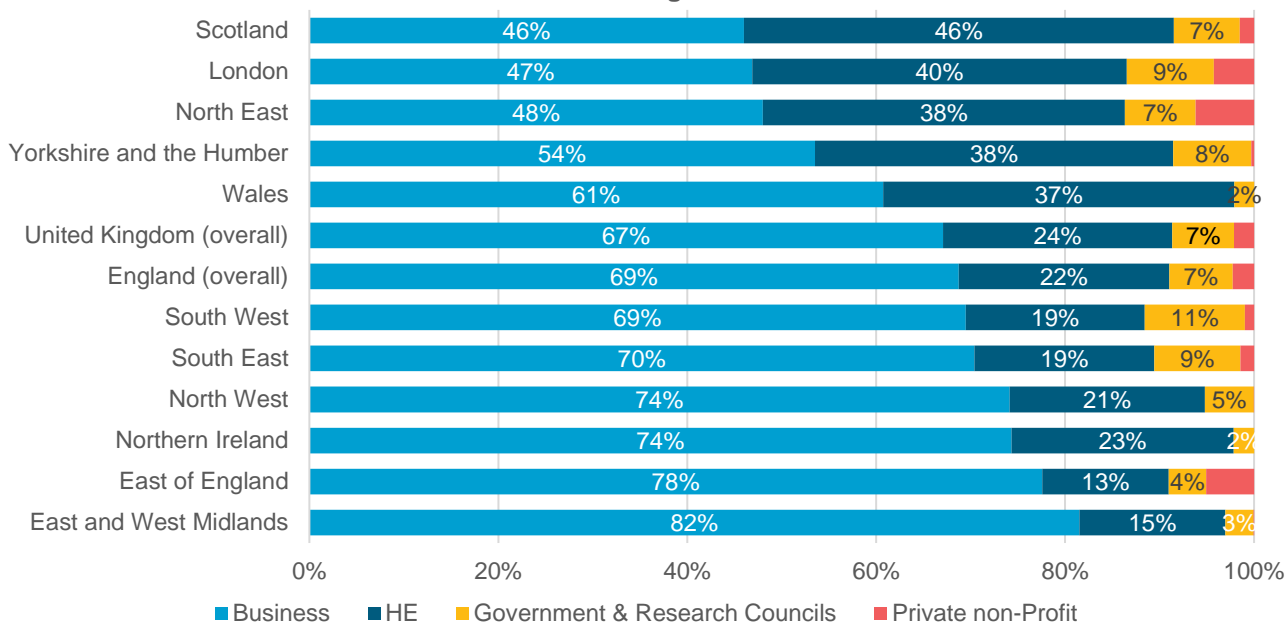


7.5 Different regions of the UK have different strengths, with R&D expenditure performed by business or universities varying across the country. Figure 6 shows that overall in the UK, around two thirds of R&D expenditure is performed by business, but this varies from less than 50% in Scotland and London to around 80% in the East of England and the Midlands.³¹ To some extent, this may be explained by the nature of the economies and the R&D strengths in these regions. For example, in London, the R&D may be focused in services sectors such as banking and insurance, whilst in the East of England it is likely to be focused on pharmaceuticals and agriculture, and on manufacturing in the Midlands, which are more capital-intensive forms of business R&D. The diversity of the research landscape in the UK is a strength and different approaches are likely to be needed to enhance R&D in different areas.

³⁰ ONS Gross domestic expenditure on research and development, UK: 2016 and ONS Regional gross value added (balanced), UK: 1998 to 2016 (using 2016 data).

³¹ ONS Gross domestic expenditure on research and development, UK: 2016

Figure 6: Proportion of R&D expenditure performed in the UK by sector, country and region



7.6 The Industrial Strategy highlights the importance of place and UKRI should ensure it makes best use of the Science and Innovation Audits (SIAs) and other tools (e.g. MATRIX³²) to identify and map areas of genuine excellence across the UK. Research England has already put in place useful initiatives such as the Strength in Places Fund and the Expanding Excellence in England fund to help enhance capacity across different parts of England and to strengthen small but excellent areas of research. The Connecting Capabilities Fund (CCF) is also helping to bring together different stakeholders, in many cases to address specific place-based issues related to research commercialisation. For example, Durham and Newcastle Universities, in collaboration with the Universities of Sunderland and Northumbria, have secured CCF investment for the Northern Accelerator, which seeks to address the ‘investor engagement’ gap in the North East and focuses on commercialisation in the region’s priority technology sectors.³³

7.7 National funders in the devolved nations may also want to consider how they can learn from the successes of funding streams that have been established in England. In particular, making HEIF available across all parts of the UK and ensuring sufficient investment in QR and equivalent streams (e.g. REG in Scotland) is key.

³² <http://matrixni.org> MATRIX, the Northern Ireland Science Industry Panel, has produced reports that provide useful information on sectoral strengths and expertise in the region

³³ More information here: <https://www.dur.ac.uk/northern.accelerator/>

Annex A

Different research-related indicators by region/country of the UK. Darker shades correspond to higher values.

	Total R&D expenditure (£ million) ³⁴	Total research grants and contracts income to universities (£) ³⁵	Research Council (RC) income to universities (£) ³⁶	University research power (REF 2014) ³⁷	Concentration of university research power (REF 2014) ³⁸	University FTE staff on research-only and research & teaching contracts ³⁹	Total university research grants & contracts income per FTE staff on research-only and research & teaching contracts (£) ⁴⁰	Population size ⁴¹	Total university research grants and contracts income per capita (£) ⁴²	GVA of the region (£m) ⁴³
London	4,899	1,462,069,000	390,716,000	32,385	21%	26,580	55,006	8,787,892	166.37	408,479
South East	6,665	882,981,000	276,498,000	21,996	14%	19,305	45,738	9,026,297	97.82	258,902
Scotland	2,331	774,754,000	273,765,000	19,223	12%	14,595	53,084	5,404,700	143.35	134,038
East of England	5,662	587,449,000	185,252,000	11,399	7%	10,135	57,962	6,130,542	95.82	147,382
North West	3,165	502,944,000	176,648,000	12,882	8%	13,905	36,170	7,219,623	69.66	166,542
Yorkshire and The Humber	1,401	393,018,000	137,959,000	12,127	8%	11,560	33,998	5,425,741	72.44	112,194
West Midlands	2,428	304,880,000	84,317,000	9,258	6%	9,770	31,206	5,800,734	52.56	126,589
South West	2,159	299,709,000	116,808,000	10,062	6%	8,570	34,972	5,515,953	54.33	127,372
East Midlands	2,428	242,324,000	89,519,000	10,315	7%	8,910	27,197	4,724,437	51.29	100,087
Wales	716	190,362,000	52,450,000	5,718	4%	5,805	32,793	3,113,150	61.15	59,585
North East	629	170,829,000	54,485,000	6,531	4%	5,850	29,202	2,636,848	64.79	50,675
Northern Ireland	647	104,607,000	19,876,000	5,065	3%	2,155	48,542	1,862,137	56.18	37,237

³⁴ ONS Statistical bulletin: Gross domestic expenditure on research and development, UK: 2016. This dataset combines data for East Midlands and West Midlands; we have divided the values equally between to give approximate values to the separate regions.

³⁵ HESA Finance data 2016/17

³⁶ HESA Finance data 2016/17

³⁷ REF 2014 scores. Research power = GPA x FTE submitted

³⁸ Proportion of the total research power concentrated in the region

³⁹ HESA staff data 2016/17

⁴⁰ HESA Finance and HESA Staff 2016/17

⁴¹ ONS Regional gross value added (balanced), UK: 1998 to 2016 (using 2016 data).

⁴² HESA finance and Regional gross value added (balanced), UK: 1998 to 2016 (using 2016 data).

⁴³ ONS Regional gross value added (balanced), UK: 1998 to 2016 (using 2016 data).

