

What Influences Private Sector Investment in R&D?

Key themes from R&D Investment Roundtable held at Chemistry Means Business 2019
29 October, 2019

Background

The UK government is committed to increasing the total investment into research and development (R&D) to 2.4% of GDP by 2027, bringing it to the OECD average.¹ To achieve this goal, a large increase in spending is needed, since the R&D investment in the UK is currently below 1.7% of GDP.¹

Total R&D investment comprises both public and private investment. Investment by businesses represents the largest component, accounting for 51% of total UK expenditure.² Public investment includes funding from the UK Government, its Research Councils, the higher education funding councils (HEFCs), and overseas investment including the EU programmes Horizon 2020 and the European Structural and Investment Funds. Private investment comes from non-profit organisations as well as for-profit companies.

As part of our event Chemistry Means Business, the Royal Society of Chemistry convened a small roundtable of people working in science based companies and supporting organisations (e.g. law firms), to discuss the factors influencing private R&D investment decisions, including the role of public R&D investment. Participants included those working in both small and medium enterprises (SMEs) and large companies. The meeting was conducted under Chatham House Rules and this note provides a summary of the discussions.

About us

With over 50,000 members and a knowledge business that spans the globe, the Royal Society of Chemistry is the UK's professional body for chemical scientists, supporting and representing our members and bringing together chemical scientists from all over the world. Our members include those working in large multinational companies and small to medium enterprises, researchers and students in universities, teachers and regulators.

Contact

This note was written by Ture Hinrichsen. The Royal Society of Chemistry would be happy to discuss any of the points raised in our response in more detail. Any questions should be directed to Mindy Dulai, Senior Policy Advisor, dulaim@rsc.org, 01223 432674.

¹ OECD (2019), [Gross domestic spending on R&D](#) R&D Investment in 2017: OECD Average 2.372%, UK 1.664%

² ONS (2017), [Gross domestic expenditure on research and development, UK:2017](#): "Research and development (R&D) expenditure rose by £1.6 billion to £34.8 billion in 2017" and [Business enterprise research and development, UK: 2017](#): "The largest source of R&D funding in 2017 was businesses' own funds at £17.7 billion".

Public investment institutions should show a greater appetite for risks and more flexibility

UK funding bodies often require strong evidence of likely success before investing in a project, deterring the testing of risky novel ideas. Additionally, the funding guidelines make it difficult to adapt to changing circumstances. This limits the generation of valuable insights and can hamper innovation.

It was acknowledged that accountability is important in using taxpayer's money wisely in investments. However, it was highlighted that inflexible funding frameworks can lead to unnecessary expense if projects continue after it is clear that the idea does not work. Additionally, there are benefits to researchers and funders in getting the knowledge and insights from projects that don't achieve their aims.

Public investors should be more willing to fund more speculative projects and allow changes to project direction, where warranted, during execution.

Current rules of public investment limit international partnerships

Both SMEs and large companies reported difficulties in obtaining funding for international collaborations. This leads to missed opportunities and limits their success as UK businesses in the long-run.

For example, one SME was applying for a project involving clinical trials. Running these trials in an EU member state outside of the UK would reduce costs and still be compliant with regulation. However, the rules of UK funding bodies prevented this.

UK funding bodies should be more willing to support work that is conducted outside the UK, especially if it supports the development of UK companies.

Decision making processes for public funding need to be transparent and seen to be transparent

Some participants perceived funding bodies as being influenced by networks of known stakeholders in a given research field.

Two SMEs stated the importance of decisions being made independently. They had the impression that those on grant panels are influenced by personal connections to certain applicants or prior knowledge of their work.

Decision making processes for public funding need to be clearly set out to support transparent decisions.

Public bodies play a crucial role by investing in discovery research

All participants recognized the importance of governments in funding research that is focused on understanding fundamental principles without the need for short-term commercial applications. There is an expectation from private sector actors that governments fund this kind of research.

One SME stated that public investors sometimes apply a business mentality to blue skies research, which is unsuitable for this kind of work. For example, implementing strict milestones was seen as not well-suited to discovery science.

Those in private sector R&D have an expectation that the public sector invests in discovery research.

Complex application and reporting processes create barriers to funding

The processes of applying for public investment create a large administrative burden. This can prevent large companies from engaging in collaborations where they may contribute their own funds or time. For SMEs it can create a prohibitive barrier to crucial funding sources and stifle their development. Complex reporting procedures following a successful application increase this administrative burden and create uncertainty.

In one case study an SME started a joint application for Horizon 2020 funding with a partner start-up. Subsequently the partner left the application process and instead applied for Austrian funding with “no strings attached”. Additional evidence of a complicated process comes from the fact that there are companies offering support for application writing. This then incurs substantial costs for any SME that uses them, diverting funding from research.

Application processes should be simplified and reporting requirements should be reduced.

There are significant barriers for collaborations between businesses and universities

Complex administrative structures, high overhead costs, and difficulties in finding a suitable project partner can prevent collaborations. However, companies still engage in these partnerships, for example for access to specialist skills and knowledge.

For example, additional costs claimed by the universities, such as overheads and bench fees were perceived as prohibitive for SMEs that wish to collaborate with universities. The need for agreement from many different stakeholders (e.g. faculty and central university finance) was mentioned as another barrier.

Partnerships between innovative businesses and university researchers should receive more support, e.g. by simplifying administrative processes and building mentorship networks.

The tax system and access to talent are important wider factors for decisions on R&D investment

Companies can be discouraged from investing in R&D by a complex tax system and opaque eligibility criteria for rebates on R&D investment. Additionally, there are barriers to hiring the specialised talent needed for innovative R&D projects, e.g. visa issues and potential employees perceiving the UK as unwelcoming.

A large company noted that the UK has very strict criteria on what qualifies as an R&D investment for tax relief. In addition, companies rely on highly specialised external tax advisors to manage the complex UK tax system, as stated by one SME. This introduces additional costs.

One SME explained that they need highly qualified employees with specific skills or knowledge, resulting in a small talent pool. The current political uncertainty creates a large barrier for hiring, e.g. because of potential visa issues. As a result, they are considering moving parts of their team to mainland Europe.

The tax system should be simplified and incentive structures for R&D investment should be improved. The visa system must support mobility for the specialist talent needed for UK R&D.