

CaSE Member & HM Treasury

Roundtable: R&D investment

Unattributed summary of CaSE roundtable discussion held on Tuesday 17th April 2018, kindly hosted by Boeing UK Ltd at their London offices.

This roundtable discussion with officials from HM Treasury was convened to inform their early thinking on achieving the ambition of increasing combined public and private R&D investment to 2.4% of GDP by 2027. The meeting brought together officials from Treasury and BEIS with representatives from CaSE members across industry, charities and universities. This summary is not CaSE policy but will form part of our ongoing programme of work for 2018 on reaching the 2.4% target and spending it well.

1. Introduction on the 2.4% target

The 2.4% target for R&D was framed around the Chancellor's priority of raising UK productivity, and innovation being key to doing so. A key question or challenge set out was around how improve (and prove) the effectiveness of the package of policy levers and incentives to make the UK environment as attractive as possible for R&D.

2. Current strengths and weaknesses of UK policies and landscape for R&D investment

- What makes the UK an attractive place to invest in R&D?
- What hinders private investment?

Strengths

- Quality of academic research base
- Access to talent – STEM and 'innovation' skill mix (stronger on creativity and problem solving than some nations with stronger traditional 'STEM' skills)
- Collaborative research approach between industry, charities and academia
- Good tax regime (with room for some improvements outlined later)
- Strong research charity funding (particularly in life sciences)
- Long-term sector-based strategies giving confidence to private sector for investment (in some areas, such as Aerospace Technology Institute)
- Some regions of smart specialization in the UK, linked in with Catapult network

Weaknesses

- Regulatory uncertainty (both from Brexit but also through lack of clarity on intentions ie Digital Charter)
- Some funding and investment gaps ie proof of concept funding, TRL6+, patient capital
- Some infrastructure and support gaps including grow-on space for companies post-incubator stage, supply chain innovation support
- Brexit uncertainty including possibility of increased non-competitive commercial conditions, regulatory challenges, and uncertainties around funding, staff, students etc
- Perception of unwelcoming environment towards large international companies

3. Growing private R&D investment in the UK and learning from other countries

- Which policy levers are most effective at stimulating private investment?
- What is ineffective and could be scaled down, reformed, or stopped?
- Are there any policy 'gaps' that we need to address?
- What factors sway global R&D investment decisions?
- What do other countries do well that the UK could learn from?
- What changes are other countries planning that the UK should be aware of?

This part of the discussion was to inform the trade-offs made in funding and policy decisions around what to include and prioritise. The challenge will be to first optimise levers and prove effectiveness to then grow the package in future. The last agenda item was around learning from other countries. The discussion is summarised here in three sections, in each setting out the challenges, ideas to improve the environment and examples either from other countries or good practice in the UK that could be spread. The three sections are: packaging the UK R&D offer, spreading and embedding what works well, and new policies and incentives to consider.

Packaging the UK R&D offer

Challenge	Idea	Example
Fragmentation - at a national and local level there isn't a coherent, joined up offer	Create a 'one-stop shop' for companies which has a remit and attitude of 'we're going to help you'. Due to companies' needs spanning departmental and local/national government lines, the joined-up support must also be able to support companies to get the support they need ie on planning applications, regulation, research base, skilled people, supply chain. This could be based at a more local or national level but must be able to support companies to navigate across both.	Singapore – Economic Development Board Scottish Government working with other agencies e.g. Highlands and Islands Agency
Communication – for large international companies and smaller UK companies there is limited knowledge of what the UK offer is ie on tax, or grant funding, or linking in with innovation infrastructure	The Department for International Trade (DIT) must take a coherent and informed approach to create a message of 'this is Britain' clearly articulating the UK's R&D offer. If the 2.4% target by 2027 is to be met this cannot wait until Brexit uncertainties are resolved, but must begin now and have satisfactory answers, or sufficient incentives, to mitigate uncertainties in the shorter term. It may be that amid regulatory and border uncertainties, a strategy around attracting research investment from overseas would be more fruitful in the short term alongside supporting innovation in smaller and supply chain companies, with a strategy for supporting and growing development investment in the longer term.	Flanders Investment & Trade DIT website has a small link to Britain is great which then at the bottom of lots of information regarding exporting it has a link to another website where there is some information on inward investment but no 'pitch' for 'why UK' and particularly UK strength as a place for R&D investment. Searching 'why set up business in UK' returns another DIT

		page , but it is not a great shop window and the top 2 reasons given relate to benefits currently uncertain due to Brexit. This is part of a longer trend that was highlighted in a report by the National Audit Office looking specifically at R&D capital funding.
Timelines - there are concerns regarding the priority from government to spend allocated R&D funding quickly within tightly defined funding periods, rather than allowing time to spend it well.	This was raised in relation to the initial funding rounds of the Industrial Strategy Challenge Fund. Given the stability afforded by the industrial strategy and the multi-year funding settlement, there should be clear guidance and appropriate incentives and requirements on departments and funding councils to ensure the priority is spending the money well not quickly, ie no risk of science budget claw-backs by Treasury if allocated funding isn't spent in-year.	
Leadership	Clear and ambitious vision and leadership from the top of Government with clear communication of intentions and vision. This may require more proactive management of communications, messaging and sector engagement while sector strategies are in development phase. This also means that each department needs to play their part in meeting industrial strategy aims of growing an innovative economy and reaching 2.4% of GDP invested in R&D needs e.g. innovation needs to be a shared ambition with the NHS, with DWP, with DIT, with the Home Office and across Government procurement and activities, not just in BEIS. It was suggested that an Innovation White Paper and Bill could draw together some of these strands and focus efforts.	French approach to Artificial Intelligence – Presidential leadership on tech and AI, significant funding, and a comprehensive, detailed strategy led by a scientist in the field

Spreading and embedding what works well

Challenge	Idea	Example
Procurement – sbri could help accelerate demand-led investment in r&d	The small business research initiative is a well-established process to connect public sector challenges with innovative ideas from industry. It is underused. Suggestions were made to mandate SBRI across government departments with a minimum spend in each, and also to expand the mechanism for use by local authorities and large companies for their procurement. There isn't a funding barrier to wider adoption but the barrier is capacity and capability building which needs to be addressed for implementation. Funding an innovation director in each Local Authority was	GovTech is an acknowledgement of this, however there is no sustained intervention after the initial challenge. The NHS could take a longer-term view on improving efficiency and service delivery by rewarding innovation e.g. in pricing and procurement policies

	suggested to provide capacity and capability to deliver on this ambition at scale across the country.	
Support the research base	Consider universities and research institutes as an asset and partner in innovation, acting as catalysts for inward investment and international relations. They are highly networked internationally through research partnerships, as well as current and former staff and students. Many are highly effective at interacting with industry and supporting start-ups and spin-outs. The international messaging about UK universities and research base could be improved as could understanding across Government, including DIT, on their role in cities, regions and the economy to support join up.	
Stable long-term sector strategies	In established sectors, long term sector strategies provide a welcome long-term view, with long-term funding from Government giving industry confidence to keep on investing and enabling companies to plan.	The ATI in aerospace was given as a successful example of this. A suggestion was made that long-term investments such as through ATI should be index linked to prevent investment stalling.
Regulation	Regulatory alignment as part of a large market has served the UK well in terms of reducing barriers to research, trade and supply chains.	
Pre-spin out funding	Follow on funds from Research councils were highly rated but limited in scale. The demand for such funding should be examined and the funds could be expanded. With the creation of UKRI, these could be held at a cross-council level rather than require disciplinary boundaries to be met to be eligible.	
SME early stage funding	The Innovate UK investment accelerator programme was commended and should be continued and expanded. EIS, SEIS and British Business Bank are good and should be continued. It was mentioned that the quantum of money through SEIS is too small for many science companies.	
R&D tax credits	These were broadly welcomed and ideas for improvements included counting purchase of data for research, and training of staff on research techniques. Also, some charities are behaving like	

investors but are currently excluded from R&D tax credits.

New policies and incentives to consider

Challenge	Idea	Example
Promoting and supporting companies, and SMEs in particular, to invest in R&D	There could be opportunities to design new layers of intervention to support supply chain company innovation and growth. For sectors which could benefit but don't yet have a mechanism for long term interventions such as Sharing in Growth, this should be explored. There is an opportunity across all sectors to increase R&D push for mid-range supply chain companies through interventions that go beyond a one-off intervention and builds confidence, supporting a large number of companies (100s/1000s) to begin/grow investment in R&D.	Sharing in Growth in the aerospace sector works well but is at the top end of interventions requiring a 4 year commitment from the company and only reaching 60-70 companies.
Patient capital	Unlock stagnant money in pensions, by enabling and incentivising some of the pension capital in the UK to be invested in early stage innovative companies. This would be aided by the Department for Work and Pensions adopting a role in the cross-government 2.4% target and exploring what supporting innovation could look like, adjusting priorities and measures accordingly. The Local Authority pension scheme doing so would be transformational.	Some examples and further detail can be found here .
Layering of incentives to boost national and regional offer	In part due to the fragmentation mentioned above, there is limited coordination or communication between the incentives and support offered at a national level and a more local level. Through the national industrial strategy, close working with Devolved Administrations and with regional/local structures, the UK should improve the layering of incentives, interventions and infrastructure so that they together provide a joined-up offer.	Germany and France were thought to be better at this. An example was also given of the Scottish Government working alongside the highlands and islands agency. The factors that worked together to grow the AMRC in Rotherham (and other cluster growth) should be looked at and learnt from. The North East Centre of Excellence for Satellite Applications is an example of this.

Infrastructure to support growing companies

There is a gap in infrastructure and support for companies once they outgrow incubator space (usually around 10 employees). This is particularly the case for those needing laboratory space. The next step is to sign a multi-year lease and invest in equipment. Finding an interim solution could involve facilitating creation of 'grow on' space in more locations, and also providing rates relief for such businesses.

Another idea was to review the factors that may cause groups with ideas based within universities or research institutes to spin-out too early, or incentives that might enable them to stay within the existing research infrastructure longer. This could include reviewing Innovate UK funding so that some can be accessed by pre-company formation or to provide appropriate funding streams through UKRI.

[Babraham Research Campus](#)
[Harwell](#)
[Cleveland Clinic Incubator](#)

Funding gaps

TRL6+ and proof of concept funding were identified as gaps in the portfolio of support offered by government. The suggestion was that proof of concept funding should be increased and be available pre and post spin-out, ideally through grants.

Belgian model of a recovery loan with no risk for company but if project goes well government can recover some costs.