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UK BioIndustry Association

Improving the evidence base for R&D tax relief in the life sciences sector

Research and development (R&D) tax relief has supported the growth and success of the UK's innovative life sciences sector since its introduction in 2000. However, despite its value, the effectiveness of the relief has been questioned and the schemes have been subject to fraud. However, many aspects of how they support innovative businesses, particularly in the life sciences, have not been sufficiently evaluated to inform policy change. As a result, policy changes could have unintended consequences that run contrary to government policy to support the sector.

This report explains the current policy context of R&D tax reliefs, argues for an evidence-based approach to tax policy, and summarises a paper produced by London Economics for the UK BioIndustry Association (BIA) identifying gaps in the evidence base relating to the impact of R&D tax relief on innovative sectors, and proposing a survey-based, cross-sector study to investigate the effects of UK R&D tax relief for small and medium enterprises (SMEs). This will fill these evidence gaps to inform a key tax policy within Labour's industrial strategy, ensuring that reliefs remain up-to-date, competitive, and well targeted.

Background

The purpose of R&D tax relief

Research and Development (R&D) tax relief is a government incentive designed to encourage investment in UK R&D. Companies are provided with cash payments (credits) or tax relief (i.e. reduction) in recognition of past R&D investment. But why should taxpayers' money be used for 'private' R&D?

The benefits of R&D are broader than the outcomes a company aims for or can fully capture itself - in scientific, social, and economic terms. A research project that does not 'succeed' for the company may still lead to scientific advancement that can be built on by others in future. Whether R&D succeeds or not for a company, it may contribute to R&D or knowledge in the public domain and other companies, generate jobs and tax revenues, attract private investment and skilled workers, and contribute to economic 'clusters' - all of which have independent, positive effects on society and the economy. These are known as spill-over effects.

Life sciences and biotech in particular require significant investment due to the necessary completion of complex and costly clinical trials or other regulatory hurdles, and the extensive engagement with regulators needed to ensure safety and efficacy. It is also essential to employ highly qualified people, often with rare skills, in a globally competitive marketplace.

Despite this high level of investment and advances in knowledge and technology bringing down both time and cost, R&D remains a risky and uncertain process, with most projects failing due to the complexity of cutting-edge science. What's more, the only way to discover whether a project will be successful is to carry it out, risking said failure. Using drug development as an example, the complete development process can take 10 – 15 years[1] and require >$1 billion in capital,[2] with fewer than 14% of all drugs in clinical trials making it through regulatory approval.[3] This level of risk and uncertainty is inherent in R&D due to the vast complexity of human biology, but there are huge potential rewards for patients, companies, and society when successful.

However, even when a project is successful and investment yields results, spillovers are conferred to society on top of that recouped by the investor; be that through increased medical knowledge, new forms of healthcare and other innovations, or wider benefits such as more jobs, increased productivity, and tax on profits. The objective of R&D tax relief therefore is to effectively reduce the cost of investing in R&D, lowering the cost of capital so that the level of investment required is more proportionate to the level of risk. This allows more resources to be dedicated to R&D within individual companies, and overall.

The success of R&D tax relief

Since their introduction in the UK in 2000, there have been schemes designed to facilitate R&D relief through the tax system, with different rates of relief and qualifying criteria depending on the size of the company and the amount of R&D conducted. The reliefs are an important part of the funding landscape for innovative companies, working alongside research grants and venture capital/equity investment to support R&D that leads to economically valuable, innovative industries of the future, creating valuable products and high-skilled, well-paid jobs. R&D tax relief has two important advantages over other types of funding: it is predictable – the amount of credit or relief is determined by the amount of R&D carried out (as a proportion of overall costs) – and they allow researchers to 'follow the science'. In contrast, research grants are usually less

[1] Tufts Center for the Study of Drug Development, Tufts University analysis estimates brining a new drug to market may take 10–15 years and cost over $2.5 billion: Joseph A DiMasia, Henry G Grabowskib Ronald W Hansen (May 2016), Innovation in the pharmaceutical industry: New estimates of R&D costs: Innovation in the pharmaceutical industry: New estimates of R&D costs - PubMed (nih.gov)

[2] Recent estimates of the costs of brining a new drug to market range from an average of US$1.3 billion (https://www.lse.ac.uk/News/Latest-news-from-LSE/2020/c-March-20/Average-cost-of-developing-a-new-drug-could-be-up-to-1.5-billion-less-than-pharmaceutical-industry-claims) to US$2.3 billion (deloitte-uk-seize-digital-momentum-rd-roi-2022.pdf)

[3] Global Medicine Spending and Usage Trends, IQVIA, May 2020: https://www.iqvia.com/insights/the-iqvia-institute/reports-and-publications/reports/global-medicine-spending-and-usage-trends

predictable (they are subject to a competitive application process) and may be focused on a particular area of research (such as a therapeutic area or technology), restricting eligibility.

R&D tax relief has been a core policy that, as part of broader industrial strategies, has led to the UK enjoying its position as one of the leading life sciences powerhouses globally. With three of the top-ten universities in the world for life sciences research, a third of all European life science start-ups, and third place globally for life sciences venture capital investment, the UK's life sciences sector is truly world-class and a great British growth opportunity.

Criticism and fraud

A key criticism of the policy has been that the amount of additional R&D generated has been lower than hoped. An analysis by David Connell and the Centre for Business Research[4] attributes this to either Treasury funding acting as a substitute for company funding ('crowding out' investment), or that the tax credits have offset a long-term decline in business investment in R&D. This was based on the observation that – though total R&D spend increased – private spending on R&D as a proportion fell between 2011 and 2019,[4] with the modest overall increase attributable to the reliefs themselves. This suggested that companies were spending less, while the government spent more – the opposite of the intended effect.

However, revisions to Office for National Statistics (ONS) methodology to better capture small company R&D activity, has shown that expenditure by UK businesses was over £15 billion more per annum than previously thought in 2018, 2019 and 2020.[5] This additional £15 billion was attributable to SMEs. Figures on country investment in R&D as a share of GDP from the Organisation for Economic Co-operation and Development (OECD)[6] show that the UK ranked 12th worldwide – up from 23rd in 2013. Total gross expenditure on R&D in the UK was £66.2 billion in 2021 (equating to 2.9% of GDP).[7] In 2022, total Business Expenditure on Research and Development ('BERD') amounted to £49.9 billion, up £3 billion on 2021.[8]

Taken together, these figures show that business spending on R&D is significantly higher than previously thought. HMRC statistics for the tax year 2021-2022 report £7.6 billion of R&D tax relief

[4] Is the UK's flagship industrial policy a costly failure? David Connell, May 2021: https://www.jbs.cam.ac.uk/wp-content/uploads/2021/05/cbr-report-uk-flagship-industrial-policy-2021.pdf
[5] Business enterprise research and development, UK: 2021, ONS, November 2022: https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/bulletins/businessenterpriseresearchanddevelopment/2021
[6] Gross domestic spending on R&D, OECD, 2021: https://www.oecd.org/en/data/indicators/gross-domestic-spending-on-r-d.html
[7] Research & Development spending, House of Commons Library, September 2023: https://researchbriefings.files.parliament.uk/documents/SN04223/SN04223.pdf
[8] Business enterprise research and development: 2022, ONS, February 2024: https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/bulletins/businessenterpriseresearchanddevelopment/2022

claimed, corresponding to £44.1 billion in total R&D expenditure.[9] While this may not directly show that the reliefs have had a direct impact in increasing the overall spend on R&D in the UK, a detailed economic analysis commissioned by HM Treasury concluded that – depending on the scheme – R&D tax relief directly results in an additional spend on R&D between £0.60 and £2.70 per £1 claimed.[10]

Despite the challenging economic outlook, the government has continued to see the value to society and the economy of supporting R&D in this way. But with both the number of claimants and the size of claims rising considerably in recent years, the costs of the schemes have risen from £4.0 billion in 2015-2016, to £7.6 billion in 2021-2022. HMRC forecasts the cost of relief in 2027-2028 to total £9.5 billion.[11] Of greater concern, fraud and error in the small and medium enterprise (SME) scheme was estimated at around 24% over the 2020-2021 period.[12]

Consequently, the schemes have been subject to policy changes, including reductions and increases in rates of relief for SMEs and large firms, respectively. Crucially, Autumn Statement 2022 reduced the effective cash payment rate for a loss-making SME from 33p for each £1 invested in R&D to 18.6p. BIA campaigning led to a partial U-turn at Spring Budget 2023, with a new rate of 27p for each £1 for R&D-intensive companies[13]. The result of this has been increased uncertainty for businesses and investors, who already take on risk as they conduct R&D, and a reduction in the appeal of the UK as a destination for R&D-performing start-ups and scaling companies in a competitive global marketplace. Due to life science's high use of R&D tax relief to leverage private investors, the repercussions of these policy changes to tackle fraud are keenly felt by the sector.

This unintended consequence is all the more perverse, because the life sciences sector is not subject to fraud allegations. News reports have highlighted fraudulent claims in creative and hospitality sectors, such as claims for adding vegan and gluten free menu items, as well as website redesign.[14]

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[9] Research and Development Tax Credits Statistics: September 2023, HMRC, September 2023: https://www.gov.uk/government/statistics/corporate-tax-research-and-development-tax-credit/research-and-development-tax-credits-statistics-september-2023

[10] Evaluation of the research and development tax relief for small and medium-sized enterprises, London Economics, September 2019: https://www.gov.uk/government/publications/evaluation-of-the-research-and-development-tax-relief-for-small-and-medium-sized-enterprises and Evaluation of the Research and Development Expenditure Credit (RDEC), HMRC, October 2020: https://www.gov.uk/government/publications/evaluation-of-the-research-and-development-expenditure-credit

[11] Research and Development Tax Credits Statistics: September 2023, HMRC, September 2023: https://www.gov.uk/government/statistics/corporate-tax-research-and-development-tax-credit/research-and-development-tax-credits-statistics-september-2023

[12] HMRC's approach to Research and Development tax reliefs, July 2023: https://www.gov.uk/government/publications/compliance-approach-to-research-and-development-tax-reliefs/hmrcs-approach-to-research-and-development-tax-reliefs

[13] Press release, BIA, March 2023: https://www.bioindustry.org/resource/chancellor-gives-boost-to-medical-innovation-and-life-sciences-industry-in-spring-budget.html

[14] Guardian article, August 2024: https://www.theguardian.com/politics/article/2024/aug/03/free-money-4bn-lost-to-and-error-on-flagship-hmrc-innovation-scheme

Moreover, data shows that the HMRC classifications 'Professional, Scientific, and Technical Activities' and 'Manufacturing have some of the lowest levels of fraud across any sector that benefits from R&D tax relief. [12] Life sciences sits within these classifications.

Only 17% of claim value in Manufacturing, and 9% in Professional, Scientific, and Technical Activities was 'non-compliant' (a descriptor that also includes unintentional error in addition to fraud). This is in stark contrast to the education sector, which has the highest value of non-compliance at 87%. The data also strongly suggest that the larger a claim, the less likely it is to be non-compliant. The sector classifications associated with the life sciences consistently have some of the highest value claims on average, further emphasising the high levels of compliance within the sector. [12]

Taken together, this shows that the vast majority of fraud/non-compliance is happening in sectors other than the life sciences. It is, therefore, essential that measures to tackle fraud are accurate, effective, and do not unjustly impact the life sciences. To achieve this, policy makers need a deep understanding of how R&D tax reliefs interact with and support innovative businesses.

The existing evidence base

The BIA has long championed the ambition to tackle fraud and non-compliance as a means of ensuring that support is well targeted, and that the return on investment for the taxpayer – in terms of direct increase in R&D and spillover effects – is maximised. At present, the evidence needed to do this is underdeveloped and many effects of the UK's R&D tax relief schemes are not sufficiently evaluated. As a result, policy changes over the past five years or so have had unintended consequences that run contrary to government's ambition to grow the life sciences sector and support other innovative parts of the economy.

The evidence that does exist is supportive of R&D tax relief. As noted above, the economic analysis commissioned by HM Treasury was comprised of two reports looking at the impact of support provided to both the SME[15] and Large Company [16] schemes respectively. The reports demonstrated an increase in R&D spend across both schemes between £0.60 and £2.70 per £1 claimed. However, they suggested that the Large Company scheme provided a greater increase on average.

[15]Devnani, S., Ladher, R., Robin, N. (2019). Evaluation of the Research and Development Tax Relief for Small and Medium-sized Enterprises, HM Revenue and Customs Research Report 598, HMRC: https://assets.publishing.service.gov.uk/media/5fae77c18fa8f55debcc5fd4/HMRC_Research_Report_598_R-and-D_tax_relief_for_SMEs.pdf

[16] Scott, G., Glinert, T. (2020) Evaluation of the Research and Development Expenditure Credit (RDEC). HMRC: https://assets.publishing.service.gov.uk/media/5faad42ed3bf7f767a564f65/Evaluation_report_-_R_D_RDEC.pdf

Although the existing evidence confirms that R&D tax relief has had a significant positive impact on SMEs, BIA has identified a number of gaps within the evidence that suggest the real impact of tax relief may be even larger. Moreover, it suggests that the comparison of the SME scheme to the Large Company scheme could be over-simplistic and not take into account variation in the performance of different sectors within the SME cohort. This represents a key opportunity to develop the 2019 analysis further, and with rising costs and growing international competition, it is more important than ever to ensure that the existing evidence base is complemented with the data that can build a clearer picture of the true impact of R&D tax relief.

Adding to the evidence base

To understand how the evidence base can be improved, a number of economic concepts are useful to consider when thinking about both the effect of investment in R&D (direct vs indirect effects), and whether this affected a pre-existing behaviour or quantity, or stimulated a behaviour or quantity that was entirely new (intensive vs extensive margin):

- **Direct effects**: the effect of tax relief on R&D spending by UK firms
- **Indirect effects**: the effect of tax relief on other outcomes of interest, (e.g., revenue, patent filings and employment).
- **Intensive margin**: effect on firms already conducting R&D in the UK.
- **Extensive margin**: effect on firms who would not have been conducting R&D in the UK without tax relief.

A given effect of R&D tax relief will be either direct or indirect and relate to either the intensive or extensive margin. For example:

	Direct effect	Indirect effect
Intensive margin	E.g. The amount of R&D spend as a result of tax relief by firms that already conduct R&D in the UK.	E.g. Number of jobs, turnover, patents etc. created as a result of tax relief by firms that already conduct R&D in the UK.
Extensive margin	E.g. The amount of R&D spend by firms that would not have been conducting R&D in the UK without tax relief.	E.g. Number of jobs, turnover, patents etc. created by firms that would not have been conducting R&D in the UK without tax relief.

The 2019 report looked at both direct and indirect effects at the intensive margin but did not consider the extensive margin, that is, how many companies may not have been established or survived, let alone conducted R&D activities in the UK, in the absence of the relief. Given the international mobility of life science companies and their sensitivity to economic downturns squeezing equity investment, expanding the scope of the evidence base to consider the extensive margin is a key opportunity for future analysis.

What's more, due to its limited scope (defined by the European Commission's evaluation requirements) it is likely that the report doesn't capture the full range of effects at the intensive margin attributable to R&D tax relief for certain types of companies – including life sciences companies. Given that pharmaceuticals were already the largest contributor to BERD in 2022 (spending £9 billion and conducting 17.9% of total R&D performed by UK businesses)[17] it is essential to understand how SMEs in the sector can best be supported and incentivised.

For firms in the life sciences industry who may be months or years away from commercialisation, the benefits of R&D tax relief are unlikely to be reflected in firm turnover – an indicator often used to assess the impact of tax relief. Benefits may instead be reflected in the speed at which a firm is able to complete R&D projects, for example, and thus beat competitors to market. This is particularly relevant to SMEs, that are usually loss-making on the long road to commercialisation. As a result, the data collection and analysis for both direct and indirect effects, need to consider sector-specific characteristics.

Another factor that needs to be considered is how R&D tax relief impacts future spending. In many sectors – including the life sciences – R&D tax relief enables firms to initiate more R&D projects in the present, which can mean that more R&D projects are ongoing several years in the future (drug development can take 10 – 15 years).[18] However, the 2019 report only looked at the short-term effects after receipt of relief.[15]

In sectors such as the life sciences, where R&D expenditure can grow significantly due to clinical trials of increasing size, greater capacity for a firm to initiate R&D projects today can mean that a larger number of promising R&D projects are developed that can continue for several years in the future. Spending on life sciences R&D projects typically increases exponentially as projects progress along the pipeline. So, the present rate of relief affects aggregate R&D spending by firms over the next several years.

As a result, the data collection and analysis for both direct and indirect effects need to consider sector-specific characteristics. Without differentiation between sectors, it is likely that the direct effects reported significantly under-represent the true picture for innovative sectors such as life sciences.

[17]Business enterprise research and development, UK: 2022, ONS, February 2024: https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/bulletins/businessenterpriseresearchanddevelopment/2022

[18] Tufts Center for the Study of Drug Development, Tufts University analysis estimates brining a new drug to market may take 10–15 years and cost over $2.5 billion: Joseph A DiMasia, Henry G Grabowskib Ronald W Hansen (May 2016), Innovation in the pharmaceutical industry: New estimates of R&D costs: https://pubmed.ncbi.nlm.nih.gov/26928437/

Instead, it is likely that R&D tax relief:

- Increases the number of firms being created and conducting R&D in the UK and improves startups' access to funding, improving chances of survival and success.
- Leads to greater output, supply chain spending, and job creation, leading to higher tax revenues.
- Enables firms to initiate more R&D projects in the present, which increases the number of ongoing R&D projects several years in the future.
- Enables firms to finish R&D projects faster, achieve more new product approvals and commercialisations, and raise more equity.

A methodology to better capture sector-specific impacts of R&D tax relief

In order to produce a more robust and comprehensive evidence base, and more accurately capture the full extent of R&D tax relief impact, BIA has worked with economists from London Economics (the authors of the 2019 report)[13] to identify how more could be done to assess this impact and ensure that R&D tax reliefs remain up-to-date, competitive, and well targeted.

As well as consideration of both intensive and extensive margins, a new methodology is needed to counteract some of the limitations of the previous studies and better inform government policy.

While studies based on, pre-existing 'secondary' data are widely considered to be one of the most robust estimation strategies, methodologies based on existing administrative data and 'natural experiments' (observational studies used to assess the impact of certain policies) are not suitable to address the identified gaps in the evidence. Secondary datasets do not capture all the variables required to study the effects of interest (particularly for firms within the life sciences sector), whereas natural experiments require a counterfactual group, which is particularly difficult to identify in the case of R&D tax relief as it is very likely that the companies in question have all claimed tax relief.

As such, our methodology does not include either approach.

Instead, we propose a survey-based approach to studying the relevant effects of R&D tax relief. This approach focuses on primary data and allows for data to be collected on sector-specific outcomes of interest that do not appear in secondary data. It also provides opportunities for identifying causal effects through means other than natural experiments.

The methodology consists of a large-scale survey for a representative cross-sector sample of UK firms. The proposed methodology consists of three subparts:

- **Hypothetical scenarios**: Respondents will be asked to make hypothetical decisions about variables such as R&D expenditure, hiring, and whether to move R&D abroad under different hypothetical R&D tax relief policies. This data will be used to make inferences about the causal effects of tax relief. The researcher can ensure that the only differences between hypothetical scenarios relate to the R&D tax relief policy, that any differences in firm decisions between hypothetical scenarios are driven by differences in the relief policy.

  Methodology:
  - Vignette studies (survey questions). Respondents will be provided with a number of different scenarios (or 'vignettes') that describe hypothetical policy changes to R&D tax relief. They will then be asked to explain how they would respond to each change, e.g. increasing investment in R&D, moving operations overseas etc.
  - Descriptive statistics and analysis (analogous to a random controlled trial)

- **Self-assessed effects**: Respondents will be asked to report on the effects that the R&D tax relief has had on their firm in recent years, such as changes to the volume and speed of R&D, new products developed, and equity fundraising. This offers a direct and simple means of investigating various effects of the relief, including effects that cannot be assessed using other means because the relevant indicators are challenging to measure and/or the effects are challenging to identify.

  Methodology:
  - Survey questions.
  - Descriptive statistics and analysis

- **Historical data**: Respondents will be asked to provide historical data on variables of interest to retrospectively construct a dataset covering the previous 5 years. Historical data can be analysed to consider how firm outcomes and behaviours have changed in response to historical policy changes.

The methodology also includes an accompanying survey for a sample of venture capital investors based in the UK and abroad (e.g., US and EU). The objective of this survey is to provide additional information about the extensive margin effects of the UK's R&D tax relief. R&D tax relief may affect the willingness of investors to found and fund UK start-ups and to fund R&D spending by UK firms. More generally, the willingness of venture capital investors to direct internationally mobile capital towards the UK may serve as a useful measure of the overall attractiveness of the UK as a place for firms to operate. Like the firm survey, the venture capital survey would consist of three topics: hypothetical scenarios, self-assessed effects, and historical data.

In summary, the proposed study intends to identify any evidence about the effects of the R&D tax relief scheme that were not captured in the 2019 Report, and to provide sector-specific estimates of effects. In addition, the new approach considers the possibility that R&D tax relief may not only affect firms who already conduct R&D but may also induce or enable a larger number of firms to conduct R&D. The contributions of these firms to the UK economy constitute possible (direct and

indirect) extensive margin effects of the R&D tax relief. The proposed study also uses a wider set of indicators to assess the indirect benefits of relief at firm-level – including indicators more suitable for capturing benefits for life sciences firms.

Considerations

In order for the study to be successful, a number of considerations must be taken into account. Foremost of which are sampling, which ensures that the dataset is sufficiently large and varied to allow for robust analysis, and that any limitations to the methodology are known and steps are taken to address them.

Sampling

It is essential that the sample from which data is collected:

- **Focuses on companies that conduct R&D**.
  The proposed analysis is aimed at understanding differences in the effect of R&D tax relief across different sectors (and other firm characteristics). The analysis is based on comparing R&D-conducting firms across different sectors, rather than comparing R&D-conducting firms to non-R&D-conducting firms. As such, it is not necessary to sample firms that do not conduct R&D.

- **Allows for a comparison across sectors and other firm characteristics.**
  To analyse differences in the effect of R&D tax relief, it is important to include firms with different characteristics in the sample. The discussion of the life sciences sector suggests that there are likely to be differences across sectors (and based on R&D intensity, the ratio of a firm's R&D investment to revenue). For this reason, the sample should include firms from a broad range of sectors.

  Within each sector, firms should be selected randomly to ensure that they are representative of the sector (i.e., in terms of R&D intensity and firm size)

- **Is large enough to provide robust results when comparing effects across sub-samples.**
  Assuming the analysis included six different sectors (i.e., two sectors with low, two with medium and two with high R&D intensity), responses from at least 184 firms would be necessary for each sector to identify a difference in the survey results of 10 percentage points (or more) with a 10% significance level.

  A difference of 10 percentage points is relatively large. It would thus be advisable to sample a larger number of firms per sector. Larger sample sizes will yield more robust evidence and will enable the analysis to identify smaller differences.

  It would be beneficial for the analysis to include more than six sectors. Differences in the effect of R&D will - by design - depend on the sectors that are part of the sample. Potential biases become smaller, the more sectors form part of the sample.

Limitations

As with any methodology, there a number of limitations to each aspect of our approach that need to be considered.

Whenever any amount of self-reporting occurs, there exists the possibility of reporting bias. In this case, firms have an incentive to over-report the benefits of R&D tax relief, as this may bring about more generous relief policies. This bias is likely to affect both the hypothetical scenarios, and the self-assessment portions of the methodology.

However, reports from different sectors can be benchmarked against one another. Assuming that the size of overreporting bias is the same in all sectors, even with overreporting bias the data should allow for conclusions to be drawn about the effects in certain sectors (e.g., the life sciences) relative to other sectors. Crucially, as long as there are not systematic biases in reporting, estimates for the average effects of policy changes will remain unbiased.

In addition, even if respondents do not intentionally overreport effects, they may struggle to accurately project how they would respond in hypothetical scenarios; or accurately assess the effects of tax relief on their firm, in the self-assessed element. However, as long as these inaccuracies don't disproportionately affect a particular group of firms, this issue will not prevent analysis of the average effects and differences between firms.

Conclusion

R&D tax credits play a vital role in UK life science, mitigating the risks of investing in a sector that is inherently high risk, and allowing more private investment to be funnelled into future R&D. While the current evidence does capture some of the impacts that this tax relief has, it is very likely that the full picture has yet to be fully grasped, and that current findings significantly underestimate the value of tax credits to the sector. Moreover, policy changes to address fraud may have unintended consequences if the schemes' interaction with innovative businesses is not fully understood. The new methodology put forward by the BIA and LE for a more comprehensive assessment directly addresses many of the limitations present in previous studies and allows for the consideration of characteristics specific to life sciences. In addition, it allows for analysis of the full range of effects at both the intensive and extensive margins, as well as consideration of investor behaviour.

A better understanding of the true value of R&D tax relief and how it supports the life sciences sector is an essential step in ensuring value for taxpayers' money. Such an understanding will better inform government policy and ensure that R&D tax credits remain up-to-date, competitive, and fit for purpose.