

# Financial Law Review

No. 35 [3]/2024

UNIVERSITY OF GDAŃSK • MASARYK UNIVERSITY • PAVEL JOZEF ŠAFÁRIK UNIVERSITY  
<http://www.ejournals.eu/FLR>

PAVEL HÁJEK\*

## RESEARCH AND DEVELOPMENT TAX CREDIT FOR SOFTWARE DEVELOPMENT<sup>1</sup>

### Abstract

This paper deals with the tax benefits of R&D in software development. The aim of the paper is firstly to reveal the practical challenges and problems of software companies in applying for Research and Development tax credits. As a result, the article proposes solutions to improve the current situation. To achieve the objective, the current state of affairs is identified through analysis and the problems to be solved are described. Given the differences in how tax credits are provided, the subsequent recommendations for improving the current state of affairs are based mainly on a comparison of the different EU Member States on the problematic issues of tax provision. This article, by proposing solutions, can help in particular in the development of new legislation in the field of indirect R&D support. However, it is also a useful basis for tax advisors, attorneys specializing in tax law, owners of small and medium-sized software companies and other individuals who are actively interested in indirect R&D support.

**Key words:** Research and Development, R&D, Software Development, Tax Credit

**JEL Classification:** K34

---

\* Doctoral student at Faculty of Law, Masaryk University Brno, Czech Republic, specializing in tax procedure and direct taxes. His research focuses mainly on tax support for R&D. He also works at the Supreme Administrative Court of the Czech Republic as a law clerk. Contact email: [hajekpavel7@gmail.com](mailto:hajekpavel7@gmail.com), <https://orcid.org/0000-0001-6834-9725>

<sup>1</sup> The paper was written within the project Current Issues and Problems in Public Law Studies at Masaryk University in Brno.

## 1. Introduction

Research and development (R&D) tax credits represent a significant opportunity for many software companies to reduce their tax burden and encourage innovation. These incentives are designed to motivate companies to invest in technological breakthroughs and innovations that can lead to new products, services or streamlined processes. The most common tax support for Research and Development includes a support through which the taxpayer reduces his tax base or final tax, based on the costs connected with Research and Development. This type of Research and Development support is quite typical for countries in the European Union and will be referred to as „tax credit” for the purposes of this article. Another widely used tax instrument for supporting Research and Development in the European Union is the patent box, which varies from country to country. This special tax regime aims to reduce corporate tax on income from intangible property, respectively on income derived from Research and Development results [Rassenfosse 2015: 2]. Other tax incentives may include:

- Tax holidays or partial tax holidays. This support consists of a temporary reduction or complete exemption from certain tax obligations, typically corporate income tax. It can usually be used mainly by new companies or companies making specific investments.
- Accelerated depreciation. This support consists of faster tax depreciation of assets, which allows the taxpayer to claim higher tax costs, especially in the first years after the acquisition of the asset.
- Special zones. This tax incentive applies to companies located in a specific geographic area. Through this aid, countries seek to attract investment in strategically important locations in their territory. The support may consist of not only reducing the tax burden but also waiving or reducing certain administrative requirements [Klemm 2009: 4]

The tax professional community agrees that the process of claiming tax benefits comes with many challenges [Bishop 2024; KPT Consulting 2023]. Although some of these challenges have been highlighted by the professional community, for example in the articles referred to above, the literature has so far failed to properly identify these issues. At the same time, proper identification of the complications that taxpayers face in obtaining tax credits is the first step towards a systemic resolution of these problems. However, there are complications that cannot be systemically resolved. That

is the reason why attorneys, tax advisors and individual taxpayers must be aware of possible challenges in order to resolve them in individual cases. For all these reasons, the aim of this article is to properly identify the challenges faced by taxpayers claiming the R&D tax credit and to propose their solution.

Because of the breadth of the topic and its practical application, this article focuses specifically on the application of the software development R&D tax credit. However, the conclusions of this article, when generalized, can be transferred to other sectors benefiting from R&D tax support. First of all, it is necessary to mention that it is the software development companies where R&D tax benefits are particularly important. That is because it is typical for these companies that their main costs are labor costs [Source Advisors 2024]. At the same time, labor costs incurred in the course of R&D are a typical R&D tax support cost supported across the board. As some success stories show, software companies can easily achieve tax support equivalent to more than 14% of their annual turnover, which is a significant support, especially for start-up companies, and can determine whether such a company survives in the market [Innovation Tax 2024]. It is therefore essential to pay due attention to this issue. Statistics show that as of 2018, the number of software developers is growing by approximately one million per year globally [Vailshery 2024]. In Europe alone, there are currently approximately 472,000 software development companies. Together, these companies generate profits of approximately 374 billion euros and employ 2 million employees [IBIS World 2024]. This shows that software development is a promising area with a significant impact on the success of national economies. Yet, there are no studies focusing on the barriers and solutions to the application of tax support for R&D by software development companies. Therefore, this article takes into account the above-mentioned specificities of these companies and seeks to open a discussion on the improvement of R&D tax support that better suits the needs of companies from specific sectors and with regard to their size.

To meet the objectives of this article, the author set the research question "What obstacles do software companies face in claiming R&D tax credits and what are the solutions to these obstacles?". To answer the research question, the analysis of existing literature and a comparison of problems and solutions across EU Member States will be used. These findings will be further enriched and developed by practical problems and solutions

encountered by the author in his practice to date. It would certainly be desirable to conduct qualitative research directly with the taxpayers concerned. However, this approach has run up against the generally applicable principle of non-publicity of tax procedure and the reluctance of taxpayers to publicly criticize the tax administration or other state bodies involved in providing Research and Development tax support. Still, some of the information mentioned in this article come from informal conversations with taxpayers who have had to address some of these challenges. Together, the chosen methods will provide a comprehensive picture of the obstacles facing software companies and may reveal examples of good practice that could be implemented in other jurisdictions.

## **2. Reasons for Supporting Research and Development**

Support of Research and Development is essential for the growth and competitiveness of national economies. Governments around the world provide tax breaks and other tax incentives to encourage companies to invest in innovation, technology and new products. The following section looks at the reasons why R&D is supported and the wider socio-economic impacts of this support.

One of the main reasons for supporting R&D is to stimulate economic growth. R&D is the engine of productivity and value-added in various sectors. Businesses that invest in R&D often create new products, services or technological processes that enable them to gain a competitive advantage in global markets [Hall, Van Reenen 2000: 449-469]. Research shows that countries with higher investment in R&D have higher levels of economic growth because R&D increases the efficiency of production and consumption [Romer 1990: 71-102]. The innovations that result from R&D activities have the capacity to transform industries and improve the quality of life. For example, R&D support in the software industry leads to the development of new programming languages, improved artificial intelligence or advanced security systems. These innovations are often the backbone of the digital economy and enable the creation of new jobs and business opportunities [Bloom, Schankerman, Van Reenen 2013: 1347-1393].

Investment in R&D also has a positive impact on employment, especially in high value-added sectors. Research and development projects often require highly skilled workers, which increases the demand for educated labor and leads

to employment growth in technology sectors [Shah et. al. 2022: 102-118]. Thus, R&D not only strengthens economies but also promotes sustainable job creation and improves social stability. It also motivates people to become educated as it increases the demand of societies for educated workers. Another important reason for supporting R&D is its contribution to tackling global challenges such as climate change, the health crisis or energy security. Research in clean technologies, health innovations and renewable energy has the potential to contribute significantly to the achievement of the Sustainable Development Goals and to the protection of the environment [Matos et. al. 2022: 1-14]. In this context, government incentives to support R&D are essential to create technologies that benefit all of humanity.

For the reasons mentioned above, R&D is often considered a positive externality, meaning that its benefits go beyond the immediate benefits of individual companies and have a wider impact on society. When companies invest in R&D, they create new technologies, products and services that improve living standards, foster innovation across the economy and address key global challenges such as climate change or health crises. These benefits are often invaluable as they contribute to productivity growth and competitiveness not only in the sector but also in other sectors. For example, new technologies that are developed in one firm can lead to process improvements in other firms, stimulating overall economic growth [Jones, Williams 1998: 1119-1135]. For this reason, governments provide tax breaks and other forms of tax incentives to firms for R&D, because the gains from these activities are too diffuse and broad to be captured only by the firms that invest in them. Thus, support of R&D is crucial to stimulate positive externalities and sustainable economic development [Arrow 1962: 609-623].

Businesses face significant risks when investing in R&D because this process is not always successful. Tax credits and other forms of government support can reduce these risks by helping companies to offset the costs of unsuccessful projects. This encourages firms to be willing to experiment and develop new technologies even if they are unsure of their immediate commercial success [Klemm 2009: 4-5]. Thus, support for R&D not only contributes to economic growth and technological progress, but also helps to address key global challenges and reduce risks for innovative firms. Due to these factors, governments around the world continue to invest in R&D to ensure competitiveness and sustainable development. However, it remains

problematic that companies that invest or would like to invest in R&D are not always able to obtain indirect support or find it excessively administratively burdensome to obtain such support.

### **3. Challenges and obstacles in applying tax support for R&D in software development**

One of the main obstacles software companies face, while applying for R&D tax credits, is the complex and lengthy administration. Companies must thoroughly demonstrate that their activities meet the definition of R&D, which involves maintaining extensive documentation such as project reports, step-by-step descriptions and technical uncertainties that their projects entail. Smaller firms in particular describe this administrative burden as problematic because they lack the staff and financial resources to provide this documentation to relevant authorities [Baldwin 1997: 28-30]. SMEs often face problems in financing their Research and Development activities. Although tax credits provide additional funding to support innovation, many smaller firms do not have sufficient seed capital to initiate projects and subsequently claim the credits. This means that these firms are at a disadvantage compared to large corporations, which have access to a wider range of financial resources and can more easily bear the initial costs of R&D investments. As a result, tax credits are often favored by larger entities, which can lead to a widening of inequalities between small and large players in the market. Larger firms have legal and tax teams dedicated to these processes, giving them a competitive advantage. In addition, if documentation is not detailed or accurate enough, applications can be rejected, leading to further delays and uncertainty [HM Revenue & Customs 2024]. In some countries, e.g. the Czech Republic, there are no applications for the tax credit, because the tax authorities control fulfilling all the obligations ex-post, but an additional tax may be levied after years of completing the project. This may even carry criminal consequences in the form of committing the offense of tax evasion [Trestní zákoník (Czech Criminal Code): § 240].

Another challenge is the uncertainty about what exactly counts as software R&D. Many tax regimes have relatively narrow definitions that may not include software development. It is therefore necessary to carefully monitor the legislation, its definition of R&D and whether and to what extent tax credit for R&D also covers software development. Fortunately, most countries

in the European Union base their definition of R&D on the Frascati Manual. This Manual, although not legally binding, defines R&D and explicitly mentions software development as a Research or Development activity under predefined conditions. In order to qualify as Research and Development, the project and activities included in it must have an element of novelty, have technical uncertainty, must be a systematic and creative activity, and the result of the activities must be transferable or reproducible. The Frascati Manual directly sets out some examples of what can and cannot be considered as R&D. Examples of activities that can be classified as R&D according to the Frascati Manual are the creation of new and original encryption or security techniques, new or more efficient algorithms based on new techniques or development of new operating systems and languages. On the contrary, Frascati Manual does not consider Research and Development to be the creation of software or websites using existing tools, routine debugging of existing programs and systems or the development of business application software and information systems using known methods and existing software tools [OECD 2015; 20-22, 45, 65-67]. However, many activities related to software development cannot be classified under these examples. It is therefore advisable for the subject applying for the support to clarify whether its planned activity covers the five criteria listed above. Even then the case is not won. It must be stressed that it is always up to the national legislator whether and how it defines R&D in its national law and whether software development, even if it meets the R&D criteria, is included in the support. Software companies therefore have to invest in lawyers, tax advisors and scientists to determine whether their projects fall within the definition of R&D, which increases their costs.

Data from the United States also show that too frequent changes in legislation can lead to companies being reluctant to invest in R&D. In fact, carrying out research and development tends to be highly time-consuming and especially costly. Unless firms are sufficiently confident that the state will not withdraw or at least substantially change the tax support for R&D, they have little motivation to start investing in R&D. Equally important for firms is the way in which tax support is provided. In most EU countries, tax support for Research and Development works through so-called tax deductions, i.e. a reduction of the tax base or a final tax reduction. The prerequisite for the application of this aid is that the taxpayer has a positive tax base. If the taxpayer makes a tax loss in a given tax year, he can only use the tax

support for the following tax years (typically following 3-5 tax years). If he does not achieve a positive tax base in these years, he will lose the support completely. It can therefore be assumed, especially for small and start-up software companies, that have to develop or test their product first, that there is a significant risk that they will lose the tax credit. Start-up companies often do not make large tax profits in the early stages of their business, especially when they have to invest in R&D first. Moreover, these companies ideally need support at the time of performing R&D or at least immediately afterward, not years later. From an economic point of view, it is also clear that the current money is worth more than future money [Griffith, Sandler, Van Reenen 1995: 34-36]. Therefore, even the set format of the support may be a barrier to R&D investments by software companies.

The most severe complications for large software companies are the differences in R&D tax support among the EU Member States. Indeed, larger projects often cannot be executed without the involvement of entities from different countries. However, this can make it difficult to benefit from tax credits in the individual EU Member States. The same project may be eligible for tax support in one country and not in another. The amount of support and the process of obtaining support also varies from country to country. For example, some countries do not support projects that are not exclusively carried out in that country or in countries of the European Union and the European Economic Community. Other countries have a restriction that the project cannot be implemented, even in part, through third parties. Thus, many taxpayers are deterred by the diversity in national regulations from undertaking large software development projects. Then they rather choose to undertake smaller projects in the country in which they can obtain the highest tax support, which is economically rational [Billings 2003: 296-297]. This suggests that even large software firms, despite their considerable advantage of typically strong legal and tax teams, may have significant complications in claiming R&D tax benefits.

It is certainly not possible to capture all the potential complications and challenges that taxpayers investing in software development face when applying for R&D tax support. These challenges are often very individual and depend on the country in which they seek support. However, the complications and challenges mentioned above are the most frequently occurring in the context of applying for tax support and related to software development. These



complications can lead to a significant reduction in the willingness of private companies to invest in R&D. This is a highly undesirable state of affairs, as it deprives not only the taxpayer but also individual countries and humanity as a whole of the benefits associated with R&D.

#### **4. Proposed solutions to challenges connected with the application of tax support for R&D in software development**

The most global problem is undoubtedly the differences in tax support across countries. The logical solution to this problem would be to unify or at least harmonize tax support between EU Member States or within the OECD countries. Although many countries have at least partially implemented some of the definitions from the Frascati Manual into their national legal systems, in practice this is an insufficient harmonization. However, the situation cannot be expected to change easily. There is clearly a lack of political will for greater harmonization. Indeed, it can be assumed that every country tries to attract foreign investments in domestic industry through tax support for R&D, which leads, among other things, to the creation of new jobs. Harmonization of tax incentives in all Member States would stifle the competition in tax incentives and, in particular, less attractive countries for investment would lose the possibility of attracting foreign investment through more attractive tax incentives. Even if the unification of R&D support was not successful, a complete harmonization of the definition of R&D could help at least in part. In this way, it should not be the case that the activities of a software developer are considered as R&D in one EU Member State and not in another. A body could also be set up within the European Union to assess the projects in question in terms of R&D criteria and its conclusion would be binding on national authorities. However, this does not mean that Member States would lose the possibility to offer more attractive tax advantages to attract foreign investment or that they could not exclude certain areas from R&D support outright. An example of a specifically targeted R&D tax incentive is Croatia, which has limited R&D support in certain sectors. In particular, projects in the gambling and betting sector, social welfare activities, real estate, financial and insurance activities, and retail and wholesale trade are excluded from support [Zakon o državnoj potpori za istraživačko-razvojne projekte (Croatian Act on State Support for Development Projects): Art. 7 par. 7]. Still Croatia respects the R&D definition provided by Frascati manual.

In terms of the speed of support, it depends on the tax support set-up in a particular country. In some countries, it is sufficient to execute the project and then apply for the tax benefit by calculating it in the tax declaration, e.g. in Slovakia [Zákon o dani z príjmov (Slovak Income Tax Act): Art. 30c]. In other countries, e.g. in the Czech Republic, a mere notification to the tax administrator is sufficient before the aid is drawn [Zákon o daních z příjmů (Czech Income Tax Act): Art. 34ba]. In many countries, however, it is necessary to obtain the status of aid recipient before starting the project. Obtaining this status can be a lengthy process. Croatia can be considered as an example of good practice. This is because the public authority in Croatia is obliged to decide on the application within 90 days of its submission. This time limit does not run only for the period of time, during which the public authority requests further documentation from the applicant or clarification of the information provided by the applicant [Pravilnik o državnoj potpori za istraživačko-razvojne projekte (Croatian Regulation on State Aid for Research and Development Projects): Art. 10 par. 4]. If the condition for granting tax aid is that the taxpayer obtains the status of a beneficiary of public aid before starting the project, then it would indeed seem to be the most appropriate solution to set a statutory deadline for the decision on this application. A time limit of 90 days, as is in Croatia, is long enough for the detailed examination of the submitted application by the State authorities, but at the same time not so long as to cause unreasonable harm to the aid applicant. Other countries providing R&D tax support in a similar way can thus take inspiration from the Croatian example when it comes to setting deadlines for project evaluations.

Croatia can also be inspirational in simplifying the administrative burden of applying for beneficiary status. The Croatian legislator has created a simple application form for R&D tax credit. This form included in Annex I of the Regulation on State Aid for Research and Development Projects. This application form has the potential remove the complex administrative requirements of the application process. The use of the aid is thus quite simple even for small and medium-sized software companies without a large tax and legal team. The only problem for small and medium-sized software companies is the predictability of whether their application will be successful. Indeed, without a detailed knowledge of decision-making practice, it may be difficult to assess whether a project meets the definition of R&D. A good solution to this problem can be found in the practice established in Slovakia.

The legislator there has enshrined an obligation for the Financial Directorate to publish on its website a list of entities that have applied for tax support. The list also includes the objectives of the individual projects. The Financial Directorate is obliged to publish the list no later than three calendar months after the deadline for filing the tax return [Slovak Income Tax Act: Art. 30c par. 8]. Software companies can thus look at the list of already supported projects. However, in order to make the Slovak list more functional and practical, some partial changes need to be done. It would certainly be advisable for the Slovak Tax Administration to continuously update whether the tax deduction has been withdrawn in the assessment of these projects. Since the source of tax support is taxpayers' funds, it is also conceivable that the complete project documentation and the results of the project could be included in the list. In this way, the results of the taxpayers' money would be spent on acquiring new knowledge for the whole society. At the same time, other taxpayers could get an idea of how the project documentation should be prepared and could also more easily estimate the chances of obtaining the tax support. With regard to the protection of intellectual property, it is suggested that the publication of these documents could be made conditional on a longer period of time having elapsed since the completion of the project.

As for the other complication mentioned, that the aid is not so beneficial for software companies as it could be, because it is usually granted ex-post and is linked to a sufficiently high positive tax base, a solution can be found in Austria. Conventional tax support, as already mentioned, usually works in a way, that the taxpayer deducts the amount of the support from the tax base or from the positive tax result. This is typically done in the form of tax deductions, which, however, cannot cause the tax base to be negative. Austria has chosen a different method of aid. There, the aid takes the form of a tax bonus [Einkommensteuergesetz (Austrian Income Tax Act): Art. 108c]. This results in a situation in which the taxpayer reduces his tax to zero on the basis of the aid and, in the case of additional aid, can decide whether the leftover is paid on his account or retained as an advance payment for the next tax year. In this way, the financial support will be available to the taxpayer shortly after the tax year, either in the form of a tax reduction, lowering his tax that would have to be paid in that year anyways, or as an overpayment of tax. This method thus offers a solution to provide support to the taxpayer more quickly and efficiently.

Last but not least, the continuity of tax support needs to be addressed. However, relatively simple solutions can be proposed in this area. First of all, it is necessary to design the R&D tax support system to be rational, administratively simple and sustainable. This is also the purpose of this article. There are currently many different systems of tax support for R&D. The positive aspects of the various legal systems, which have usually already undergone some development, can be selected and used as inspiration. Provided these conditions are met, it can be considered that a tax support system can be designed in such a way that it does not need to be changed frequently, or ideally not at all, over an extended period of time. The immutability of the legal system of tax support can hardly be enshrined in legislation. However, taxpayers' confidence would undoubtedly benefit from governments presenting and sticking to a long-term and predictable R&D investment plan. Declarations by political elites committed to maintaining indirect support for R&D could also undoubtedly support confidence in continuity.

## 5. Conclusion

The promotion of research and development is undoubtedly important in the development of individual taxpayers, countries and humanity as a whole, given its many benefits. However, in a market economy, there is insufficient investment in R&D. This is why this area must be supported by individual countries. Indirect support is one way of doing this. The most widely used indirect support for R&D is the tax credit. This article analyzed the obstacles for software companies to claim R&D tax credits and found an answer to the research question "What are the obstacles software companies face in claiming R&D tax credits and what are the solutions to these problems?".

The author has identified several key challenges that software companies face in claiming R&D tax relief for software development. Firstly, they face excessive administrative complexity in claiming the deductions and an uncertain outcome. Particularly problematic is the diversity of national legislation regarding both the concept of R&D itself and the process of claiming tax credits. There is also the uncertainty inherent in excessive changes in the relevant legislation concerning these tax benefits and the possible sudden discontinuity in the provision of tax benefits by the government. Problematic for software companies is the fact that tax relief is most often granted in the form of a reduction of the tax base and the condition for

applying this reduction is that the taxpayer has a sufficient tax base. If they do not have it, they will not receive the support until a delay of several years. They might even lose the whole support.

To address these issues, the author of this article has proposed several recommendations to improve the current situation. There can be no expectation of unification or substantial harmonization in the provision of tax relief. However, it would help software companies greatly if at least the definition of R&D were unified in all EU Member States. Member States could adopt this definition from the Frascati Manual, developed by the OECD. A uniform assessment of R&D at EU level would be also hugely beneficial, especially for larger projects in different EU Member States. At the same time, individual Member States could further decide on the level of support and the areas supported. In the context of R&D support, further work is also needed on user-friendliness for individual companies so that tax support is not used only by large companies with strong legal and tax teams. As an examples of good practice from some EU Member States show, user-friendliness and transparency can be improved by creating a single form for applying for the tax support and by publishing a list of already supported projects. Taxpayers also have a higher motivation if the application process does not last too long. Therefore, the legislator should always think about setting up deadlines for evaluation of these applications. A practical recommendation to increase the attractiveness of R&D investments is also to replace the tax deduction with a tax bonus. This way, the money will reach taxpayers more quickly without waiting until they have a sufficient tax base to claim the tax deduction. Taxpayers' uncertainty about the continuity of tax benefits can also be addressed in non-legal ways. The most appropriate solution appears to be the development and implementation of a systematic governmental plan to support R&D. Political elites shall also reassure software companies, at least informally by public statements, that their project will be supported throughout its development.

Based on the conclusions of these articles, it is possible to say that there are (often unnecessary) complications that make tax benefits less attractive not only for software companies but also for other taxpayers. The solution can be found in examples of good practice in individual EU Member States. However, these complications need to be highlighted in order to create the political will to change. At the same time, it is essential to discuss possible

solutions. This article therefore focused not only on the complications but also on solutions to the problems associated with the application of tax aids, in an attempt to attract more attention to this topic. After all, it is unfortunate not to exploit the full potential of Research and Development, which has such a positive impact on everyone's daily life.

## References

Arrow, K., J.: Economic welfare and the allocation of resources for invention. In: *The rate and direction of inventive activity: Economic and social factors*. Princeton University Press, 1962

Available at: <https://doi.org/10.1515/9781400879762-024>, accessed: 1<sup>st</sup> August 2024

Baldwin, R., J.: *The Importance of Research and Development for Innovation in Small and Large Canadian Manufacturing Firms*, Analytical Studies Branch Research Paper Series, 1997

Available at: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=123588](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=123588), accessed: 13<sup>th</sup> August 2024

Billings, A., B.: Are US tax incentives for corporate R&D likely to motivate American firms to perform research abroad? *Tax Executive*, 55(4), 2003

Available at: [https://www.researchgate.net/publication/290987226\\_Are\\_US\\_tax\\_incentives\\_for\\_corporate\\_RD\\_likely\\_to\\_motivate\\_American\\_firms\\_to\\_perform\\_research\\_abroad](https://www.researchgate.net/publication/290987226_Are_US_tax_incentives_for_corporate_RD_likely_to_motivate_American_firms_to_perform_research_abroad), accessed: 29<sup>th</sup> September 2024

Bloom, N., Schankerman, M., Van Reenen, J.: Identifying technology spillovers and product market rivalry." *Econometrica*, 81(4), 2013

Available at: <https://www.econometricsociety.org/publications/econometrica/2013/07/01/identifying-technology-spillovers-and-product-market-rivalry>, accessed: 19<sup>th</sup> June 2024

Bishop, R.: *Common Challenges When Claiming R&D Tax Credits*, TaxConnections, 2024

Available at: <https://www.taxconnections.com/taxblog/common-challenges-when-claiming-rd-tax-credits/>, accessed: 8<sup>th</sup> September 2024

Griffith, R., Sandler, D., Van Reenen, J.: Tax Incentives for R&D. *Fiscal Studies* vol. 16, no. 2, 1995

Available at:

zI3N2VmOC0yNTg5LTQ0ODktOGUwMS01MmRIM2RhZTMyNDciXX0&seq=1,  
accessed: 22<sup>nd</sup> September 2024

Hall, B., Van Reenen J.: How effective are fiscal incentives for R&D? A review of the evidence. *Research Policy*, 29(4-5), 2000

Available at: [https://doi.org/10.1016/S0048-7333\(99\)00085-2](https://doi.org/10.1016/S0048-7333(99)00085-2), accessed: 19<sup>th</sup> June 2024

Jones, C., I., Williams, J. C.: Measuring the Social Return to R&D. *The Quarterly Journal of Economics*, 113(4), 1998

Available at: <https://doi.org/10.1162/003355398555856>, accessed: 1<sup>st</sup> August 2024

Klemm, A.: Causes, Benefits, and Risks of Business Tax Incentives. *International Monetary Fund*, 2009

Available at: <https://www.imf.org/external/pubs/ft/wp/2009/wp0921.pdf>, accessed: 6<sup>th</sup> June 2024

Matos, S., et. al.: Innovation and climate change: A review and introduction to the special issue. *Technovation*, 2022

Available at: <https://doi.org/10.1016/j.technovation.2022.102612>, accessed: 1<sup>st</sup> July 2024

Rassenfosse, G.: Patent Box Policies, University of Melbourne, 2015

Available at: [https://www.bulletpoint.com.au/wp-content/uploads/2021/05/patent\\_box\\_policies.pdf](https://www.bulletpoint.com.au/wp-content/uploads/2021/05/patent_box_policies.pdf), accessed: 5<sup>th</sup> June 2024

Romer, P., M.: Endogenous technological change. *Journal of Political Economy*, 98(5), 1990, S71-S102.

Available at: <https://www.journals.uchicago.edu/doi/abs/10.1086/261725>, accessed: 19<sup>th</sup> June 2024

Shah, I., H., et. al.: Does R&D investment drive employment growth? Empirical evidence at industry level from Japan. *International Journal of Finance & Economics*, 2022

Available at: <https://doi.org/10.1002/ijfe.2677>, accessed: 28<sup>th</sup> June 2024

## Legal Acts

### Austria

Act of 7 July 1988, Income Tax Act, No. 400/1988 Coll. (consolidated text Journal of Laws 2024, as amended by Act No. 113/2024).

### Croatia

Regulation of 25 January, 2019 on State Aid for Research and Development Projects, No. 9/2019 Coll. (consolidated text Journal of Laws 2019).

Act of 26 July, 2018 No. 64/18 on State Support for Development Projects (consolidated text Journal of Laws 2024, as amended by Act No. NN 89/24).

### **Czech Republic**

Act of 11 December 1992 Income Taxes Act, No. 586/1992 Coll. (consolidated text Journal of Laws 2024, as amended).

Act of 9 February, 2009 Criminal Code, No. 11/2009 Coll. (consolidated text Journal of Laws 2024, as amended).

### **Slovakia**

Act of 4 December, 2003 Income Tax Act, No. 595/2003 Coll. (consolidated text Journal of Laws 2024, as amended).

### **Other official documents**

OECD: Frascati Manual, Guidelines for Collecting and Reporting Data on Research and Experimental Development, 2015

Available at: [https://www.oecd.org/en/publications/frascati-manual-2015\\_9789264239012-en.html](https://www.oecd.org/en/publications/frascati-manual-2015_9789264239012-en.html), accessed: 16<sup>th</sup> September 2024

### **Internet Resources**

HM Revenue & Customs: Research and Development Tax Relief: Guidance and Criteria, 2024

Available at: <https://www.gov.uk/guidance/corporation-tax-research-and-development-rd-relief>, accessed: 13<sup>th</sup> August 2024

IBIS World.: Software Development in Europe – Market Size, Industry Analysis, Trends and Forecasts (2024-2029), 2024

Available at: <https://www.ibisworld.com/europe/industry/software-development/200645/#CompetitiveForces>, accessed: 25<sup>th</sup> November 2024

Innovation Tax: R&D Tax Credits – Client Success Story, 2024

Available at: <https://www.innovationtax.co.uk/case-study/sector-software/>, accessed: 25<sup>th</sup> November 2024

KPT Consulting: Overcoming Common Challenges in R&D Tax Credit Claims, Tax Credits

Available at: <https://kpt.tax/overcoming-common-challenges-in-rd-tax-credit-claims/>, accessed: 16<sup>th</sup> June 2024

Source Advisors: R&D Tax Credits for Software Development, 2024

Available at: <https://sourceadvisors.com/rd-tax-credit/software-development/>, accessed: 25<sup>th</sup> November 2024



Vailshery, L., S.: Number of software developers worldwide in 2018 to 2024. Statista, 2024

Available at: <https://www.statista.com/statistics/627312/worldwide-developer-population/>, accessed: 25<sup>th</sup> November 2024