THE STRUCTURE OF SUPPORTED BUSINESS R&D INITIATIVES BY SUPER-DEDUCTION IN SLOVAKIA

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Abstract: *The super-deduction of research and development allows any company based in Slovakia, which implements innovative or development projects, to deduct from the tax base for the second time the expenses it has incurred for these projects. The savings that each innovative company would receive in 2018 by using a super-deduction for R&D after meeting the legislative requirements in Slovakia was an extra €21,000 for every €100,000 invested in development and innovation projects. Compared to 2017, the level of super- deduction in 2018 has increased fourfold from 25% to 100% of relevant expenses. The research aims to analyse the projects implemented by the companies in 2018 in Slovakia in the framework of R&D in the content of the projects and the related amount of the deduction which were supported. The research shows that not every business subject carried out R&D only within its focus of the main business.*

Keywords: *Research, Development, Super-deduction.*

1. INTRODUCTION

Determining the criteria and applying them when determining research and development is involved and when not is not at all straight forward and unambiguous. In order to precisely define R&D at the international level, the Frascati manual has been developed and published by the OECD, the Organization for Economic Co-operation and Development. The Frascati Manual defines research and development as *"creative work carried out on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and of using this pool of knowledge to design new applications."* (OECD Frascati Manual, 2015)

The competitiveness and sustainability of a modern organisation depends on its ability to innovate successfully. Innovation is the combined activity of generating new knowledge and the subsequent successful exploitation of this for benefit (von Stamm, 2008; O'Sullivan and Dooley, 2008). The current perspective of the innovation process views it as an interactive and networked system, spanning independent organisational boundaries to draw on complementary knowledge, experience and capabilities from increasingly diverse sources (Tidd and Bessant, 2009; Philpott et al., 2011).

Until 2015, companies in the Slovak Republic could use support only in the form of subsidies or tax relief. The tax super-deduction of costs/expenses has been applied in the conditions of the Slovak Republic since 2015, when it was introduced into legislation. Deduction of costs incurred for R&D projects is a government tool to support private R&D investments. It takes the form of a tax credit for taxpayers of all legal forms of business and all branches of activity (ASB, 2021). This is an indirect form of support, where it is possible for tax subjects to deduct from

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the tax base a set percentage of the value of tax-recognized costs of R&D projects incurred in the tax period. The supercomputing aims to motivate the private sector to spend its own funds on R&D and thus reduce the gap between Slovakia and the European Union average in the level of spending on research and development.

The savings that each innovative company would receive in 2018 by using a super-deduction for R&D after meeting the legislative requirements in Slovakia was extra €21,000 for every €100,000 invested in development and innovation projects. Compared to 2017, the level of super deduction in 2018 has increased fourfold from 25% to 100% of relevant expenses.

The paper aims to identify the conditions that must be met in order for the R&D project to serve as a basis for the application of the super-deduction in the entrepreneur's income tax return in the Slovak Republic. First of all, it is necessary to theoretically analyse the requirements for the R&D project according to the valid legislation in Slovakia and then within the quantitative research we statistically evaluate the focus of R&D projects for 2018 in comparison with the main business of individual companies. The basic research question of the research presented in this paper is: Do business entities focus on R&D only within the scope of their stated SK NACE? SK NACE expresses information on the classification of its economic activities.

2. SUPER-DEDUCTION FOR R&D ENTREPRENEURS IN SLOVAKIA

In recent years, European regions are experiencing industrial restructuring, provoking a shift from traditional manufacturing towards more modern and complex industries, e.g. information, computing, and technology (ICT), biotechnology, and Big Pharma (Aldridge, T.T. And Audretsch, D., 2017, Thurik, R. et. al., 2012). The need to achieve competitiveness through innovation created from incorporating knowledge and new ideas converted into economic activities will be the "front-end of innovation" (Poskela, J. Mantinsuo, M., 2009) This increased knowledge endowment, in turn, improves the entrepreneurial activity profitability by enabling recognition and engagement in new business opportunities (Acs Z.J. et. al., 2009, Wersching, K., 2010). Economics of innovations introduces new approaches for the development of business models in the process of organisational evolution (Boons, F., Lüdeke-Freund, F., 2013). Innovative economics theory, contrary to neoclassical one, is arising from the thesis that capital accumulation is the main vehicle for economic growth in knowledge-based economy of the 21st century. This new business logic assumes that the rate of economic growth in the innovative economy depends on the products or services, as a result of knowledge (Roblek, V., Meško, M., Pejic Bach, M., Bertoncelj, A., 2014).

As of 1 January 2015, a new type of tax advantage has been introduced for taxpayers in Slovakia who carry out research and development, which should motivate them to spend more resources for this purpose, create jobs for professionals (especially graduates), increase their own competitiveness and sing to the development of the knowledge economy. Support for business entities consists of deducting expenditures (costs) for R&D from the tax base. The deduction can be used by the taxpayer who implements the R&D project, in connection with which he incurs expenses (costs), which he can deduct from the tax base under the established conditions (Financial Directorate of the Slovak Republic, 2016).

From 2015 to 2017, business entities were able to claim 25% of the total expenditure (costs) on R&D in the form of super-deduction. From 2018, the super-deduction rate increased to 100%

and increased in the following years (Financial Administration, 2021). Only those expenses can be deducted from the tax base, which are recorded separately from other expenses (costs) and corresponds to costs/expenses expediently spent on research and development specified in the project, which is mandatory documentation to control from income.

3. ELABORATION OF R&D PROJECT

Research and development (R&D) are activities that centre around the innovation of new products or services in a company. Primary purposes of R&D activities for a company include keeping competitiveness as it produces products that advance and elevate its current product line. Since R&D typically operates on a longer-term horizon, its activities are not anticipated to generate immediate returns. However, in time, R&D projects may lead to patents, trademarks, or breakthrough discoveries with lasting benefits to the company (Investopedia, 2021).

Among other things, Act no. 595/2003 on income tax (2021) in the Slovak Republic also regulates the instruments of tax policy to support R&D from the resources of business entities. The condition for applying the deduction of expenses is the elaboration of the R&D project, which means a written document defining the subject of R&D, the time of the project, the objectives of the project achievable during its implementation and measurable after its completion, the total estimated expenditure (costs) for the implementation of the project (Baštincová, 2015).

Organisations that are successful in harnessing the potential of external knowledge collaboration for R&D projects have greater scope to undertake complex innovation activity and are likely to realise competitive advantage over organisations relying solely on internal capabilities (Rothwell, 1994; Gratton, 2000; Chesbrough, 2003; de Faria et al., 2010). The success of innovative ideas developed based on the inter-organisational collaboration depends as much on the process of open innovation (OI) than on the idea itself (Chesbrough, 2004). OI needs to be wisely managed to execute an R&D project effectively and deliver proposed project benefits. According to the Frascati Manual (OECD, 2015), for activities to be classified as R&D, they must meet five central criteria:

1) Novel;
2) Creative to advance existing knowledge;
3) Degree of uncertain regarding the outcome, cost and time allocation;
4) Systematic in management, and
5) Transferable or reproducible.

The management of the innovation process, especially in collaborative contexts, requires mastering the capabilities of goal setting, problem-solving, design thinking, project, programme and portfolio management, team building, collaboration and knowledge management (O'Sullivan and Dooley, 2008).

Since 2015, an R&D project, in which a deduction of expenses (costs) can be applied, means a written document in which the taxpayer defines its subject and its research and development activities before the start of the solution of this project. The project had to be signed before the start of its implementation in 2018, which we examine in this paper. The project must contain (Financial Directorate of the Slovak Republic, 2016):

- basic data on the taxpayer, which are the name and the registered office of the company, the tax identification number, for the taxpayer who is a natural person, name and surname, address of permanent residence and place of business;

- date of commencement and expected completion of the research and development project;
- project objectives that are achievable during its implementation and measurable after its completion;
- total estimated expenses (costs) for project implementation and estimated expenses (costs) in individual years of project implementation.

A short description of the project is also a part of the income tax return, in which the entrepreneur applied the super-deduction of R&D when reducing the tax base by the super-deduction. This part of the project characteristics is published in the Slovak Republic on the Financial Administration website and is freely available for our research.

The year 2021 brings changes in the field of R&D. According to the Methodological Instruction (2021), a project is a written document in which the taxpayer defines the subject of research and development. The project must be prepared and signed by the deadline for filing the tax return, which represents a change compared to previous periods when the project had to be prepared and signed before the start of its implementation. One part was added to the mandatory requirements of the project, namely: the signature of the person authorized to act on behalf of the taxpayer pursuant to Section 13 of the Commercial Code (Financial Directorate of the Slovak Republic, 2021). It can be assumed that this change may have a positive effect on the application of supercomputing by entrepreneurs and its real impact will be the subject of future research.

4. DATA AND METHODOLOGY

We conducted the research with complete data for 2018, which were published by the Financial Administration of the Slovak Republic on its website. We chose 2018 for analysis because it is currently the last year for which we have complete data and can analyse it. Business entities in tax returns, which must be filed by March 31 of the year following the year for which the tax return is filed, or in the event of a delay of up to 3 months, respectively. by 30 June of the following year and by 6 months until 30 September of the following year, if it taxes income from abroad. In income tax returns, business entities state the total amount of the applied super-deduction for the given accounting period together with the number of projects they implemented in the given accounting period together with the objectives of individual projects. This information, together with the identification of the accounting unit, is published by the Financial Administration after processing into a tabular form in the following periods. For 2018, the information was published in four parts at quarterly intervals, with the publication of the last part in 2020. This information is freely available on the Financial Administration page for a limited time until it is overwritten by the further publication of data from the following period.

In 2018, 264 entities applied the super-deduction for R&D, which is the highest number of business entities during 2015-2018. In the analysis of projects, we found that not all business entities stated the number of elaborated projects in the tax return, nor what the individual projects deal with. As many as 11 business entities did not state the number nor purpose of the projects they applied the R&D for in 2018. Our analysis shows that in 2018, according to published data, 810 projects were implemented, but we could find published information only in 762 projects. Therefore, 253 business entities and 762 super imputed projects applied by them were included in the detailed research.

5. NUMBER OF PROJECTS APPLIED BY BUSINESS ENTITIES IN 2018

From the available data, we found that in 2018, 1 project was applied for in the case of 133 business entities; on the other hand, the most implemented projects were applied for one business entity, i.e. up to 100 projects in 2018. In the following Figure 1, we present the basic statistics of 253 business entities, which published the number of projects applied during the reference period.

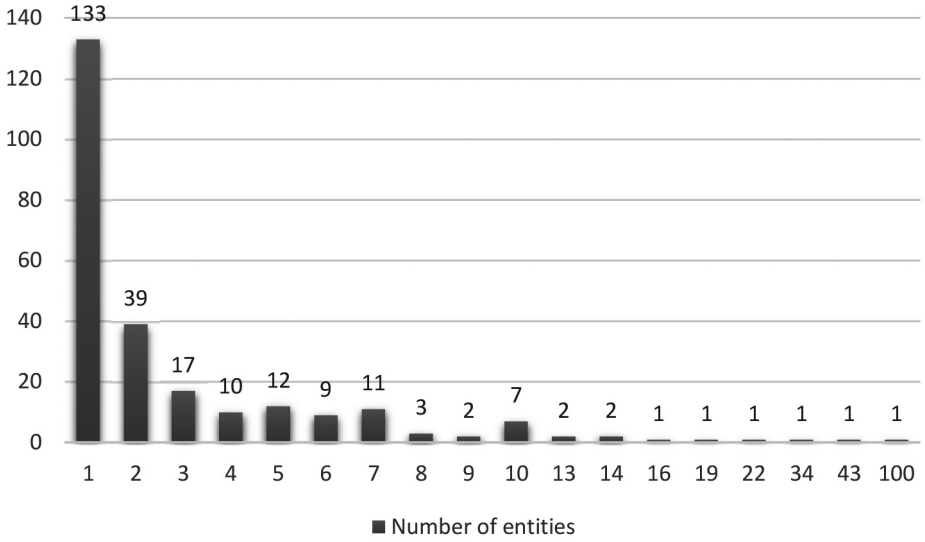

Figure 1. Application of projects by business entities (2018)
Source: own processing according to Financial Administration, 2021

Figure 1 shows that most business entities applied for 1 project, but in total 120 entities applied for more than 1 project for R&D. On average in 2018, one company applies 3 projects for supercomputing. As a company can carry out a project for several years, the average number of projects can grow.

Table 1. Focus of projects in R&D enterprises according to SK NACE and keywords in projects (2018)

Focus according to SK NACE	Number of entities	Number of projects	Focus of projects according to tax returns (2018) – recurring keywords
Accounting, bookkeeping and auditing activities; tax consultancy	1	1	Software
Activities of hospital	1	7	Health
Advertising	2	2	Information technology, Production and production equipment
Agriculture and forestry	1	1	Agriculture
Automobile industry	6	63	Automotive, Software, Production and production equipment, Technology and equipment
Clothing and footwear	2	5	Clothing, Production and production equipment
Construction	9	15	Development, Environment, Hazard, Health, Production and production equipment, Software
Development and civil engineering	7	10	Electrical engineering, Production and equipment, Software, Technology and equipment
Education	2	1	Health
Electrical engineering	27	138	Automotive, Constructing, Electrical engineering, Food processing industry, Health, Information technology, Production and production equipment, Software, Technology and equipment

Focus according to SK NACE	Number of entities	Number of projects	Focus of projects according to tax returns (2018) – recurring keywords
Energy and mining	1	2	Research
Engineering	34	158	Automotive, Electrical engineering, Information technology, Production and production equipment, Robotization, Software, Technology and equipment
Food processing industry	7	18	Agriculture, Food processing industry, Information technology
Health care	2	9	Electrical engineering, Automotive, Health
Chemistry and plastics	6	18	Automotive, Production and production equipment, Research, Software, Technology and equipment
Information technology	62	174	Automotive, Development, Electrical engineering, Food processing industry, Information technology, Production and equipment, Retail, Robotization, Software
Intermediary activity	4	1	Software
Law, consulting and accounting	3	4	Information technology, Technology and equipment, Software
Metalworking and metallurgy	20	40	Automotive, Electrical engineering, Food processing industry, Information technology, Production and production equipment, Robotization, Technology and equipment, Software
Other cash	2	4	Information technology, Production and production equipment, Robotization
Other research and experimental development on natural sciences and engineering	18	32	Development, Electrical engineering, Information technology, Production and production equipment, Software, Technology and equipment
Production – other	4	5	Production and production equipment, Technology and equipment
Retail	6	17	Construction, Information technology, Production and production equipment, Software, Technology equipment
Sales and maintenance of vehicles	2	3	Production and production equipment, Technology and equipment, Software
Self-employment	14	7	Technology and equipment, Software
Service	2	2	Information technology, Robotization
Telecommunications	1	1	Software
Tourism and gastronomy	1	1	Production and production equipment
Waste management	1	1	Software
Wholesale	15	21	Automotive, Health, Information technology, Production and production equipment, Software
Wood and paper	1	1	Construction

Source: own processing according to Financial Administration, 2021

Table 1 shows the focus of business entities in 2018 according to their subject of business and the focus of projects in their activities. Our goal was to analyse and verify the hypothesis whether companies carry out R&D only within their scope of business. To simplify the following table, we have selected all the main activities of business entities in 2018 (according to SK NACE) and we have assigned individual project orientations to them. We've chosen the following keywords to identify their focus: Agriculture, Automotive, Clothing, Construction, Development, Electrical engineering, Environment, Food processing industry, Hazard, Health, Information technology, Production and production equipment, Research, Robotization, Software, Technology and equipment, whose presence we observed in the description of the project in the income tax return.

At the beginning of the article, we asked ourselves the research question of whether business entities focus on R&D projects only within their main subject of business. From Table 1, we observe that business entities do not focus only on their main business, but also carry out R&D in other sectors, but to a much lesser extent. For example, in the Advertising sector, business entities carry out R&D in the field of Information technology and Production and production equipment. An interesting curiosity is the Education project, which was implemented within the Health focus. Business entities are not prescribed by law to describe the implemented projects in their tax returns, and therefore in some cases, we can only assume what these projects are specifically about. We found that not every business entity carried out R&D only within its main business focus.

6. FUTURE RESEARCH DIRECTIONS

Future research in this area needs to focus on the analysis for the whole period and especially on the possible impact of Covid-19 on the content of the implemented R&D. Another possible approach is the analysis of the amount of supercomputing in relation to the industry or the focus of the project.

7. CONCLUSION

The paper aimed to identify the conditions that must be met in order for the R&D project/projects to serve as a basis for the application of the super-deduction in the tax return. First of all, it is necessary to theoretically analyse the requirements for the R&D project according to the valid legislation in Slovakia and then within the quantitative research, we evaluate the focus of R&D projects for 2018 in comparison with the main business of individual companies.

R&D includes activities that companies undertake to innovate and introduce new products and services. It is often the first stage in the development process. The goal is typically to take new products and services to market and add to the company's bottom line (Investopedia, 2021). This paper analysed projects that are part of the application of the super-calculation of R&D costs, which business entities applied in 2018. Our findings show that in the observed period most business entities applied costs from 1 project and one subject applied the highest number of projects, a total of up to 100 projects in a single tax period (2018).

Following the main research question of whether business entities focus only on R&D projects within their main subject of business, the research was confirmed in most cases. Some business entities do not focus only on their main subject of business, but also carry out R&D in other sectors, which confirms the identification of keywords in the project description.

We conducted the research with complete data for 2018, which were published by the Financial Administration of the Slovak Republic on its website. The methodological instruction on R&D has undergone several amendments. In 2015, the R&D project had to be developed before its implementation began, but from 2021 onwards, it is sufficient for the project to be signed before the tax return is filed, which may have a positive effect on the number of super-deducting entities.

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REFERENCES

Acs, Z.J., Braunerhjelm, P., Audretsch, D.B. et al. (2009). The knowledge spillover theory of entrepreneurship. Small Bus Econ 32, 15–30. https://doi.org/10.1007/s11187-008-9157-3

Act no. 595/2003 Coll. (2021). Act no. 595/2003 Coll. on income tax, as amended. Available at: https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2003/595/20210301

Aldridge, T.T.; Audretsch, D. (2011). The Bayh-Dole act and scientist entrepreneurship. In Universities and the Entrepreneurial Ecosystem; Edward Elgar Publishing: Cheltenham, UK, 2017. https://doi.org/10.1016/j.respol.2011.04.006

ASB. (2021). The super-deduction can also support research and development in companies in the field of construction. [online]. Available at: https://www.asb.sk/biznis/superodpocet-moze-podporit-vyskum-a-vyvoj-aj-vo-firmach-z-oblasti-stavebnictva

Baštincová, A. (2015). Tax benefits for research and development in the Czech Republic and Slovakia. In: Proceedings of the 16th International Scientific Conference AIESA – Building a Knowledge-Based Society. Department of Accounting and Auditing: Bratislava, Slovakia: EKONÓM.

Boons, F., Lüdeke-Freund, F. (2013). Business models for sustainable innovation: state of-the-art and steps towards a research agenda, Journal of Cleaner Production, Vol. 45, pp. 9-19. https://doi.org/10.1016/j.jclepro.2012.07.007

Chesbrough, H.W., (2003). Open innovation: the new imperative for creating and profiting from technology. Harvard Business School Press, Boston. https://doi.org/10.5465/amp.2006.20591014

de Faria, P., Lima, F., Santos, R. (2010). Cooperation in innovation activities: the importance of partners. Res Policy 39(8):1082–1092. https://doi.org/10.1016/j.respol.2010.05.003

Financial Administration (2021). List of taxable persons who have claimed a deduction for research and development expenditure. [online]. Available at: https://www.financnasprava.sk/sk/elektronicke-sluzby/verejnesluzby/zoznamy/zoznamdanovych-subjektov-kto

Financial Directorate of the Slovak Republic (2016). Methodical instruction for deduction of expenditures (costs) for research and development according to §30c of Act no. 595/2003 Coll. on income tax, as amended. [online]. Available at: https://www.financnasprava.sk//_img/pfsedit/Dokumenty_PFS/Zverejnovanie_dok/Dane/Metodicke_pokyny/Priame_dane_uct/2016.04.19_MP_par30c.pdf

Financial Directorate of the Slovak Republic (2021). Methodical instruction for deduction of expenditures (costs) for research and development according to §30c of Act no. 595/2003 Coll. on income tax, as amended. [online]. Available at: https://www.financnasprava.sk//_img/pfsedit/Dokumenty_PFS/Zverejnovanie_dok/Dane/Metodicke_pokyny/Priame_dane_uct/2021/2021.01.22_12_DZPaU_2021_MP.pdf

Gratton, L. (2000). Living strategy: putting people at the heart of corporate purpose. Financial Times/Prentice Hall, London. Available at: http://www.bd-cons.com/site/brlivingstrategy.htm@opendocument.htm

Investopedia. (2021) Research and Development (R&D). [online]. Available at: https://www.investopedia.com/terms/r/randd.asp

OECD (2015). Frascati manual 2015: guidelines for collecting and reporting data on research and experimental development, the measurement of scientific, technological and innovation activities. OECD Publishing, Paris. Available at: https://www.oecd.org/publications/frascati-manual-2015-9789264239012-en.htm

O'Sullivan, D., Dooley, L. (2008). Applying innovation. Sage Publishing, Thousand Oaks, CA. Available at: http://www.nuigalway.ie/staff-sites/david_osullivan/documents/2011_ai_booklet.pdf

Philpott, K., Dooley, L., O'Reilly, C., Lupton, G. (2011). The entrepreneurial university: examining the underlying academic tensions. Technovation 31(4):161–170. https://doi.org/10.4135/9781452274898

Poskela, J.; Martinsuo, M. (2009). Management control and strategic renewal in the front end of innovation. Journal of Product Innovation Management 26(6):671 - 684.
https://doi.org/10.1111/j.1540-5885.2009.00692.x

Roblek, V., Meško, M., Pejic Bach, M., Bertoncelj, A. (2014). Impact of knowledge management on sustainable development in the innovative economy, in Basile, G. (Ed.), Systems Thinking for a Sustainable Economy: advancements in Economic and Managerial Theory and Practice, Business Systems Laboratory-2nd International Symposium, Rome: Universitas Mercatorum. Available at: https://www.academia.edu/5060916/Impact_of_knowledge_management_on_sustainable_development_in_the_innovative_economy

Rothwell, R. (1994). Towards the fifth-generation innovation process. International Marketing Review 11(1):7-31.
https://doi.org/10.1108/02651339410057491

Thurik, R.; Audretsch, D.; Grilo, I. (2012). Globalization, Entrepreneurship and the Region. Available at: https://www.researchgate.net/publication/254410541_Globalization_entrepreneurship_and_the_ region

Tidd, J., Bessant, J. (2009) Managing innovation – integrating technological, market and organizational change, 4th edn. Wiley, Chichester. https://doi.org/10.1142/S1363919609002315

Von Stamm, B. (2008). Managing innovation, design and creativity. Wiley, Hoboken, NJ. Available at: https://innovationleadershipforum.com/wp-content/uploads/2014/11/Innovation-for-design-council.pdf

Wersching, K. (2010). Schumpeterian competition, technological regimes and learning through knowledge spillover. Journal of Economic Behavior & Organization 75(3):482-493 https://doi.org/10.1016/j.jebo.2010.05.005