R&D Tax Incentive Implementation Rate: A Novel Approach to Analysing Attractiveness of Tax Incentives

KATSIARYNA MARMILAVA
PHD CANDIDATE

UNIVERSITY OF MISKOLC
e-mail: marmilava@gmail.com
https://orcid.org/0009-0008-7675-3849

SUMMARY

The article discusses the current methodology used to evaluate the relative attractiveness of R&D tax incentives, namely the B-index. It describes the evolution of the methodology, as well as its main limitations and drawbacks. It further suggests a novel complementary approach to analysing the attractiveness of tax incentives taking into consideration the practical implementation of tax incentives. The developed indicator – the tax incentive implementation (utilisation) rate – accounts for national features of tax incentive systems and reporting on R&D tax expenditures and allows the generosity of tax incentives to be linked with the actual amount of tax support received by firms. Furthermore, the article demonstrates the applicability of the tax incentive implementation rate in policy analysis. The specific tax incentive implementation rates were computed for 20 European countries and compared to draw conclusions about the relative efficacy of policy implementation.

Key words: R&D tax incentive, tax subsidy, implementation of tax incentives, generosity of tax incentives.
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INTRODUCTION

Parameters of tax incentive schemes rarely stay constant over time. Governments may wish to give an additional boost to R&D or increase the stimulus for a particular target group. A proper evaluation of improved or alternative R&D tax incentives requires tax indicators which show the generosity of tax schemes and the significance of anticipated changes from firms' perspective.

The main tax indicator applied in the literature (Bloom et al., 2002; Dagenais et al., 2004; Hall, 1993; Mairesse & Mulkay, 2004) to assess tax assistance to investment in R&D is the B-index. This indicator is widely used today for the analysis of policy attractiveness (OECD 2019a, 2019b); however, it describes only potential tax support that can be provided by the tax system and does not reflect the perceived attractiveness of tax incentives by firms, which may affect tax incentive take-up. Meanwhile, successful implementation of R&D tax incentive policy may play a crucial role in the policy's effectiveness. Thus, an effective application procedure is desirable for the pool of beneficiary firms. They might be discouraged from applying for a tax incentive when they face uncertainty about the compliance cost. The complexity of R&D tax incentives due to potential interactions with other tax breaks or direct financing, as well as non-transparent mechanisms of their calculation, causes biases that can be a reason for taxpayers' failure to apply for and use R&D tax incentives. To the best of my knowledge, no studies are available that define and evaluate the relative efficacy of policy implementation, as well as the main drivers of its heterogeneity among countries. Therefore, this article focuses on the discussion of the current assessment practice of tax assistance to R&D, its drawbacks and limitations, and then suggests a novel approach to evaluating the attractiveness of tax incentives and efficacy of their implementation that can support policy analysis.

THE B-INDEX MODEL – METHODOLOGICAL ASPECTS AND LIMITATIONS

The B-index model was first introduced by McFetridge and Warda (1983) in their research "Canadian R&D Incentives: Their Adequacy and Impact" as a measure of generosity of R&D tax incentives and their relative adequacy.[i] Under the adequacy of tax incentives in relative terms they supposed that tax incentives 'are as generous as those of other countries facing similar circumstances' (McFetridge & Warda, 1983, p. 4). In their research, the B-index was used to demonstrate how the incentive to do R&D varies across firm sizes, regions, and types of activities within Canada, and to estimate the extent to which R&D in Canada would decline if it were treated the same for tax purposes as other types of investment. Later, in the reports prepared by the Conference Board of Canada in 1997 and 1999, the B-index was used as a measure of the relative attractiveness of tax systems of different Canadian provinces and as a comparison tool of favourable tax treatment of R&D in Canada and other major industrial countries (Warda, 1997, 1999). In 2000 the B-index was adopted by OECD as an R&D tax policy indicator (for example, in STI Outlook and STI Scoreboard) and was suggested for use as a tool for international benchmarking of the attractiveness of R&D tax systems (Warda, 2001).

Algebraically, the B-index represents a ratio of the net cost of one marginal monetary unit spent on R&D, after all quantifiable tax incentives have been accounted for, to one monetary unit of the income net of corporate income tax. It can be represented with the following formula:

$$B\text{–}index = \frac{(1-A)}{(1-\tau)}, \tag{1}$$

where A is the present value of depreciation allowances, tax credits, and other R&D tax incentives available, and τ is a corporate income tax rate.

Therefore, the B-index specifies the pre-tax income needed for a "representative" company to break even on a marginal, monetary unit of R&D outlay, taking into account provisions in the tax system that allow for an enhanced treatment of R&D expenditures (Warda, 2005; OECD, 2013, 2019c).

Formula (1) is general and can be adjusted to different types of R&D tax incentive schemes. Below are examples of the B-index calculation in cases of taxable and non-taxable tax credit (Formulas (2) and (3), respectively) and investment allowance (Formula (4)):

$$B\text{–}index_{TC} = \frac{1 - x\tau - yz\tau - c(1-\tau)}{1-\tau}, \tag{2}$$

$$B\text{–}index_{NTC} = \frac{1 - x\tau - yz\tau - c}{1-\tau}, \tag{3}$$

$$B\text{–}index_{d} = \frac{1 - yz\tau - xw\tau}{1-\tau}, \tag{4}$$

where $B\text{–}index_{TC}$ – B-index for taxable tax credit; $B\text{–}index_{NTC}$ – B-index for non-taxable tax credit; $B\text{–}index_{d}$ – B-index for investment allowance (deduction); x – proportion of current R&D expenditure; y – proportion of capital R&D expenditure; z – present value of tax depreciation allowances (z = 1 is equivalent to current expensing); c – tax credit rate; and w – investment allowance (super deduction) rate (Warda, 2006, 2007).

The amount of tax subsidies to R&D is then calculated as follows:

$$Rate\ of\ tax\ subsidy = 1 - B\text{–}index. \tag{5}$$

According to the B-index concept, the more favourable the tax treatment of R&D, the lower a country's B-index and, other things being equal, the greater the amount of R&D that will be conducted by its corporate residents (McFetridge & Warda, 1983).

The B-index model can include many components of the R&D cost structure and applicable tax provisions (Warda, 2005):

- current R&D expenditure, including wages and salaries of R&D personnel and the cost of materials used in the R&D process;
- capital expenditures incurred in R&D that can be immediately expensed;
- capital expenditures (e.g. the cost of machinery and equipment, facilities and buildings) that have to be depreciated, usually over the useful life of the capital input

(according to declining balance or straight line methods);
- additional tax allowances on R&D expenditure;
- tax credits that are applied against income tax payable (taxable or non-taxable).

The model does not capture the considerations related to depreciation of the output of the R&D and does not account for deductions allowed for interest payment on loans.

For consistent comparisons, the model measures country B-indexes under constant and uniform technical assumptions:

- proportion of current and capital R&D expenditures is 90 per cent and 10 per cent, respectively, for all countries;
- wages and salaries (a component of current costs) are assumed to represent 60 per cent of total R&D expenditures;
- capital expenditures are divided equally between machinery and equipment (5 per cent), and buildings (5 per cent);
- the model is expressed in present value terms (net return over time) – it is assumed that for all the countries compared, the discount rate is constant and holds at 10 per cent.

In case the cost of investment is fully deductible and there are no additional R&D tax incentives, the value of "A" will be equal to the corporate income tax rate "τ", implying a value of the B-index equal to 1; therefore, the value of tax subsidy will equal 0. At first sight, this seems to signify that the tax system does not provide generous R&D tax incentives. However, this is not the case, as the benchmark of the B-index refers to immediate expensing, which implies a favourable tax treatment compared to the tax treatment of other investments that have to be depreciated over time (Palazzi, 2011). Indeed, studies on the effect of corporate income taxation on capital accumulation show that immediate expensing of investment expenditures is optimal since the fiscal neutrality is achieved by harmonising investment incentives on a common basis (King, 1987). The B-index will vary from 1 when R&D expenditures are not fully deductible ($A < \tau$) or are more than fully deductible ($A > \tau$).

The B-index model has some shortcomings:

- initially, only corporate income taxes and related incentives were incorporated (the model excluded incentives related to personal income, value added, property taxes, as well as taxes on wealth and capital); however, later the model was extended to include tax incentives applied through employer social security contributions (SSCs) and withholding taxes for R&D personnel;
- the model does not consider the treatment of the cost of financing (tax deductions of the cost of debt constitute an overall tax incentive for R&D);
- the B-index considers investment at the margin and does not reflect the tax treatment of infra-marginal investment and profits;
- the B-index is sensitive to the degree of symmetry between the tax treatment of R&D expenditures and the tax treatment of income derived from R&D (thus, for example, reduction in the B-index attributable to a tax credit, provided at a given rate, is larger the higher is the corporate income tax rate);
- the model refers to "representative" firms in their class for which caps or ceilings that limit the amount of eligible expenditures or tax support are not applicable (OECD, 2018; Warda, 2006; Palazzi, 2011; Clark, n.d.).

Originally the model assumed the existence of no tax exhaustion: it made no distinction between non-refundability and refundability provisions of tax incentives, and carry-forward and carry-back provisions did not alter B-index values, either. The challenging macroeconomic environment, particularly in the initial phase of the global economic crisis, has dented the profitability of many companies, making operating surplus negative in many countries' corporate sector. This called into question the relevance of the headline B-index as a representative indicator for all R&D-performing companies. Acknowledging the fact that there are differences in the provisions made by countries for scenarios in which companies cannot immediately realise the entire value of the tax benefit for R&D expenditures, the B-index formula was further developed by the OECD for loss-making companies or companies which do not have sufficient profit to utilise R&D tax incentives (OECD, 2013).

The B-index formula has been generalised as follows:

$$B\text{–}index = \frac{1 - \tau(x + (1-x)\psi)\theta}{1 - \tau(x + (1-x)\psi)}, \quad (6)$$

where $x = 1$ if the firm has a sufficiently large profit to claim tax incentives, $x = 0$ otherwise; and ψ is the present value adjustment factor for the allowance (or equivalent incentive) in the scenario with an insufficiently large profit base: $\psi = 1$ if the tax incentive is fully and immediately refundable in the "loss" case, and $0 < \psi < 1$ if the tax incentive can be carried forward.

The present value of an allowance or a tax credit which can be carried forward is calculated based on the assumption of a constant probability of returning to profit (arbitrarily set to 50 per cent) according to Formula (7):

$$\psi(T,\lambda,i) = [1-(\frac{\lambda}{1+i})^T](\frac{\lambda}{1+i})/(1-\left(\frac{\lambda}{1+i}\right), \quad (7)$$

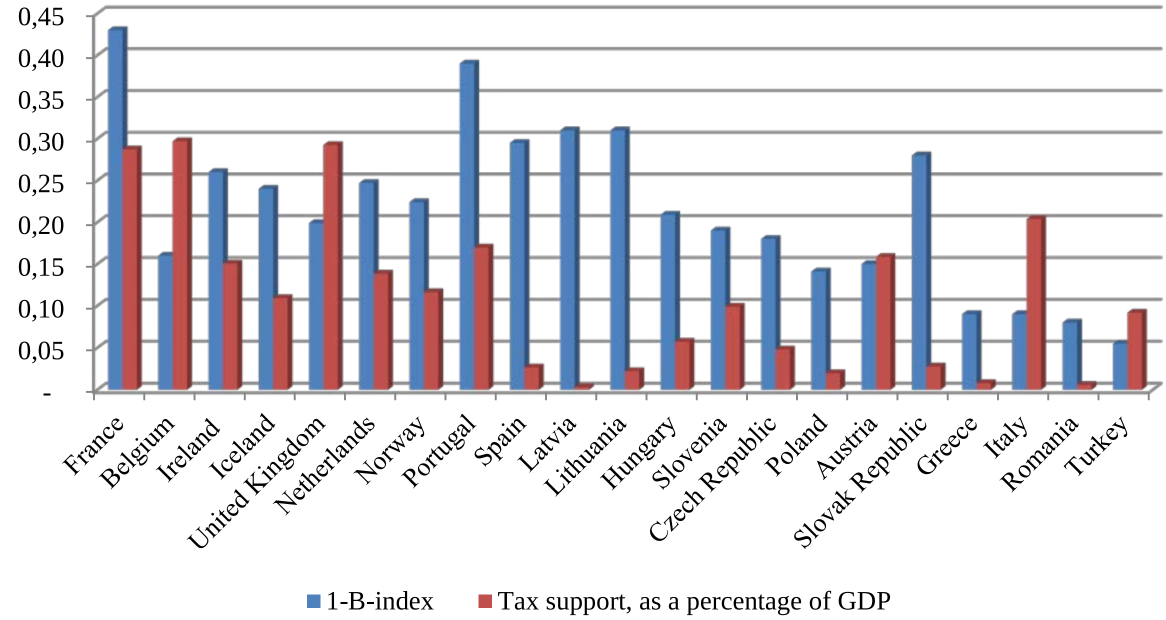
where λ is a probability of returning to profit; T is a time limit for carrying forward special credits and allowances; and i is an interest rate (assumed to be 10 per cent).[ii]

The computation of the B-index for loss-making firms has broadened the application of the B-index model allowing comparison of countries' tax rules for firms with no profits (albeit under some generalised assumptions).

Therefore, the B-index is a summary measure which assesses the generosity (maximum full value of benefit) of the tax system to encourage R&D of firms in different profit scenarios. However, potential generosity of tax incentives is only one dimension of their attractiveness, and other features of tax schemes may be important from firms' perspective (such as their simplicity, availability, or ease of use). Consequently, the B-index cannot be a complete measure of the relative attractiveness of tax schemes and should be complemented by other indicators. This question will be a focus of the next section.

A Novel Approach to Evaluating the Attractiveness and Efficacy of Implementation of R&D Tax Incentives: Baseline Methodology

Since the B-index assesses only potential generosity of tax system and does not reflect the behavioural responses of taxpayers to tax incentives, it should be analysed along with the actual amount of government tax support provided to business R&D (Figure 1).



Note: figures for Austria, Belgium, Latvia and Ireland are for 2017, for Romania for 2016. For countries that have different tax treatment of R&D for large firms and SMEs (namely, the United Kingdom, Norway and the Netherlands) tax subsidy rates are calculated by the author based on the share of SMEs in the total amount of tax support for BERD.

Source: own construction based on OECD statistics – R&D Tax Incentive Indicators (OECD, 2022a).

Figure 1 – Tax subsidy rate for R&D expenditures and the actual level of tax incentive support of BERD, 2018

As seen in Figure 1, some of the countries which provide generous tax incentives as measured by the tax subsidy rate have a lower share of actual tax incentive support to GDP (for example, Spain, Lithuania, Latvia and the Slovak Republic). On the opposite side, Belgium and Italy, providing less generous tax incentives, have a higher level of tax support for R&D than the Netherlands, Norway, Ireland, Hungary and some other countries. These differences may arise due to different levels of business-financed R&D in GDP, as well as due to the availability of tax support administered by government officials and behavioural responses of taxpayers to the tax treatment.

To link the generosity of tax incentives with practical implementation of tax incentive policy a new indicator is suggested that can be meaningful for international comparisons of attractiveness of R&D tax incentives. It can be described with the following formula:

$$R\&D\ tax\ incentive\ implementation\ rate = \frac{\dfrac{Tax\ support, as\ a\ \%\ of GDP}{Business - financed\ R\&D, as\ a\ \%\ of GDP^{\text{iii}}}}{1 - B - index}. \quad (8)$$

The proposed indicator may be named in two ways: the tax incentive implementation rate (TIIR) to emphasise how government succeeds in implementation of R&D tax incentive policy (such as creating a clear mechanism for the usage of tax incentives, transparent application procedure, delivering information about new tax incentives to taxpayers, etc.), or the tax incentive utilisation rate (TIUR), indicating whether businesses find it reasonable to claim and use tax incentives for R&D.

The numerator in Formula (8) shows how much tax support as a percentage of GDP is received by one per cent of business-financed R&D in GDP, or the share of business-financed R&D supported by R&D tax incentives if multiplied by 100.[iv] The total ratio shows the amount of normalised tax support[v] as a percentage of GDP generated by one unit of tax subsidy, or the share of business-financed R&D supported by tax incentives attributable to 1 unit of tax subsidy. Therefore, the indicator illuminates the effect of different levels of business-financed R&D expenditure in GDP among countries on the amount of tax support provided.

TIIR is meaningful primarily for cross-country comparisons of the successful implementation of R&D tax incentive policy. In a single-country analysis it can be used when changes to tax incentive schemes are introduced, reflecting the responsiveness of firms to them, otherwise other methods can be sufficient. For example, if the generosity of R&D tax incentives remains constant over time, the change in the magnitude of R&D tax expenditures or the number of taxpayers using the scheme can be analysed.

The formula of TIIR (8) is general and should be adapted to each country's specific circumstances.

The following features of national R&D tax incentive systems and the reporting practices on R&D tax expenditures should be taken into account:

- differentiation of tax support based on the firms' size;
- existence of refundable and carry-over provisions, and their modelling in the B-index;
- the method of measurement of government tax relief for R&D;
- tax treatment of subcontracting costs;
- existence of limitations in R&D tax relief.

These features along with their accountability in the formula will be discussed below.

Differentiation of tax support based on the firms' size

Countries which target their R&D tax incentives by firm size have different estimates of tax subsidy rates for SMEs and large firms. In this case, a weighted average estimate for all types of firms should be computed. In case of limited data on the amount of tax support distributed among different types of firms (large and SMEs), the weighted average B-index may be computed based on the share of their R&D expenditures in total business expenditure on R&D. According to the OECD (2019b), SMEs' share in tax support tends to be closely aligned with SMEs' share in BERD. Where countries perform evaluations of the R&D tax support provided to the business sector, the more precise amounts from such reports can be drawn upon. For example, HM Revenue and Customs in the United Kingdom provides annual reports on the amount of tax support by type of scheme, the Netherlands publishes "Focus on research & development", where uptake of the current R&D tax incentive scheme ("WBSO") is reflected, and some statistics can be found in the OECD Summary reports on indicators of tax expenditures (for example, OECD, 2019b).

Accounting for refundable and carry-over provisions in the B-index and the method of measurement of government tax relief for R&D

For consistent estimates of countries' specific tax incentive implementation rates, the B-indexes in different scenarios (profit- and loss-making firms) should be opposed to the amount of tax support, which can be estimated on an accrual or cash basis. Accrual reporting means that the recording of the provision of tax relief occurs when R&D generating the basis for claiming tax relief has taken place. Therefore, a measure of tax relief on an accrual basis is based not only on relief earned and claimed in the current year, but also on relief which may be carried over. For countries which provide accrual-based estimates, B-indexes for profit scenario should be used in the computation of TIIR. At the same time, some countries provide cash-based estimates of government tax relief for R&D, that is, the claim is recognised by the government when it is paid in cash or used to decrease the tax liability of the firm. If these countries offer refundable provisions the B-indexes for profit- and loss-making scenarios will coincide. Some biases may arise in the computation of TIIR when only carry-over provisions are adopted (no cash refunds) or modelled in the B-index. To connect cash-based estimates with B-indexes in both scenarios the share of firms that could not fully benefit from available R&D tax incentives due to an insufficient amount of income in the total amount of tax support should be estimated. Considering that not all countries collect such information, the assumed share of 50 per cent can be used in the computations. Since the B-indexes for loss-making firms, generally differ only slightly from those for profit-making due to the possibility to carry-forward tax benefits, this assumption will not distort the estimates.

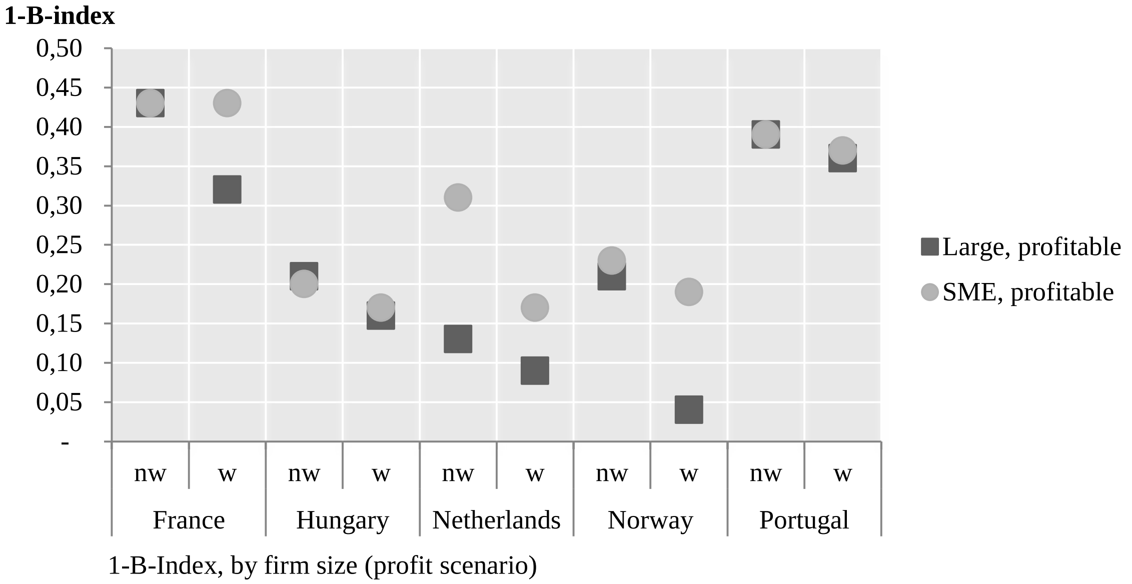
Tax treatment of subcontracting costs

The treatment of subcontracting costs should be taken into account in order to estimate the amount of R&D expenditure used for normalisation of tax support of R&D. In some countries (for example, Belgium, the Netherlands and Hungary) only the performer of R&D activity may apply for tax incentives, while most European countries provide tax incentives for the funder of R&D activity, which means that subcontracted R&D expenditure may also qualify for tax support. Italy and the United Kingdom, when supporting a funder of R&D activity, allow tax benefits to be claimed for R&D contracted to firms by the business sector from abroad (in the United Kingdom under the large company scheme only). Some countries (for example, Austria, Ireland, the Slovak Republic and Romania) allow either the performer or the funder to make a claim for tax benefits; however, there is no double tax relief (OECD, 2022b). In Turkey the tax benefit can be received by both parties in equal proportion. Eligibility criteria may also relate to the nature of the contractual relation between the contractor and contracted party. For example, Austria and Ireland exclude R&D contracted to related parties from R&D expenditure eligible for tax benefits. Therefore, county specificities regarding eligibility of subcontracting costs should be considered and the adjustment should be made to the amount of business-financed R&D used for normalization of tax support in the formula.

The existence of limitations in R&D tax relief

In general, the B-index model assumes that ceilings and floors are not binding. In countries which offer tax benefits redeemable against social security contributions and payroll withholding taxes, tax offsets by construction are limited to tax liability (for example, in Belgium, France, Hungary, the Netherlands, Spain and Turkey). However, some of these countries impose additional limitations on the amount of tax relief that can be claimed. For example, in Turkey the number of support personnel who benefit from social security contributions cannot exceed 10 per cent of the number of total full-time R&D personnel. In Hungary, tax relief can be validated up to the gross wages of 500,000 Hungarian forint (HUF) per month (HUF 200,000 in case of PhD students or doctoral candidates). In Spain, 60 per cent of the annual wage bill for qualified research staff may benefit from a tax incentive. France adopted a ceiling for SSC reduction at the employee and company level, while the Netherlands and Belgium did not use additional limitations for the amount of tax relief (Belgium imposes a limitation only from 2018, which was caused by the extension of the scheme to researchers with bachelor degrees). Some countries do not limit the amount of tax benefits from R&D tax credit and R&D tax allowance (for example, Poland, Greece, Latvia, Lithuania (for profit-making firms)[vi], Romania, Slovenia, Belgium and the United Kingdom (for RDEC scheme)), while others impose various types of limitations on the amount of R&D expenditure. For example, Norway limits the amount of qualifying R&D expenditure for the ScatteFUNN scheme per project, per firm, and per year (for intramural R&D including that procured from entities other than approved R&D institutions, subcontracted R&D to approved R&D institutions, and the sum of the two). Such limitations affect mainly large firms, making the scheme less generous.

To account for the effect of ceilings OECD has recently developed an experimental indicator "weighted" tax subsidy rate. It is computed for countries whenever data or proxy measures for the distribution of eligible R&D spending are available. The comparison of the two subsidy rates is presented in Figure 2.



Note: nw = non-weighted, w = weighted. Figures do not reflect preferential provisions for start-ups, young firms or a specific subset of SMEs (for example, innovative SMEs).

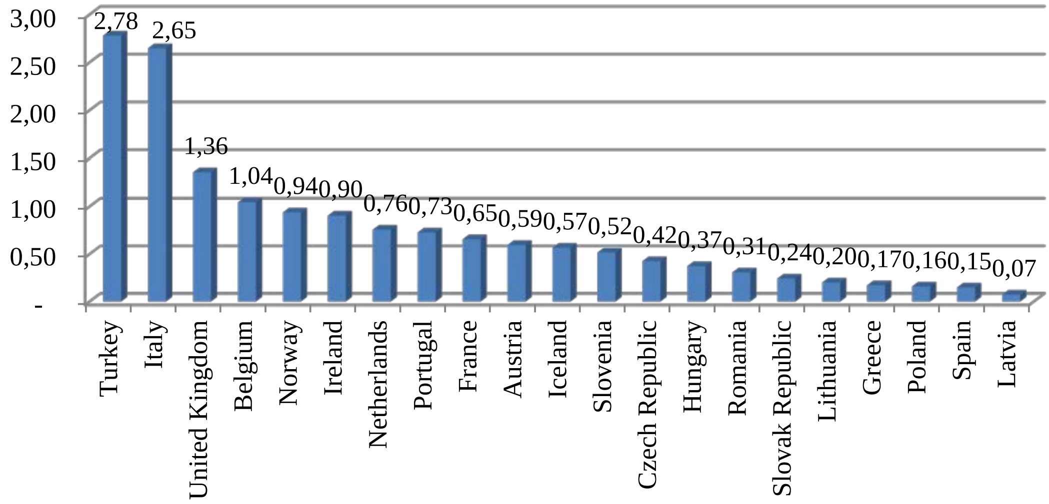
Source: own construction based on OECD, 2019a, 2022c.

Figure 2 – Weighted vs. non-weighted implied tax subsidy rates on R&D expenditures, 2018

Therefore, for these countries (namely, France, Hungary, the Netherlands, Norway and Portugal) the weighted tax subsidy rates can be used in the computation of TIIRs, which allows estimates to be more precise. Since in France and Portugal weighted tax subsidy rates differ for large firms and SMEs (while non-weighted tax subsidy rates coincide), the proportion of tax support for SMEs should be also accounted for in these countries to arrive at the average weighted tax subsidy rate estimates.

Application of TIIR in Policy Analysis

According to the approach developed, TIIRs were computed for 20 European countries[vii] with R&D tax incentives in place for the year 2018, for which comprehensive and reliable data on tax support are publicly available. The results are presented in Figure 3.



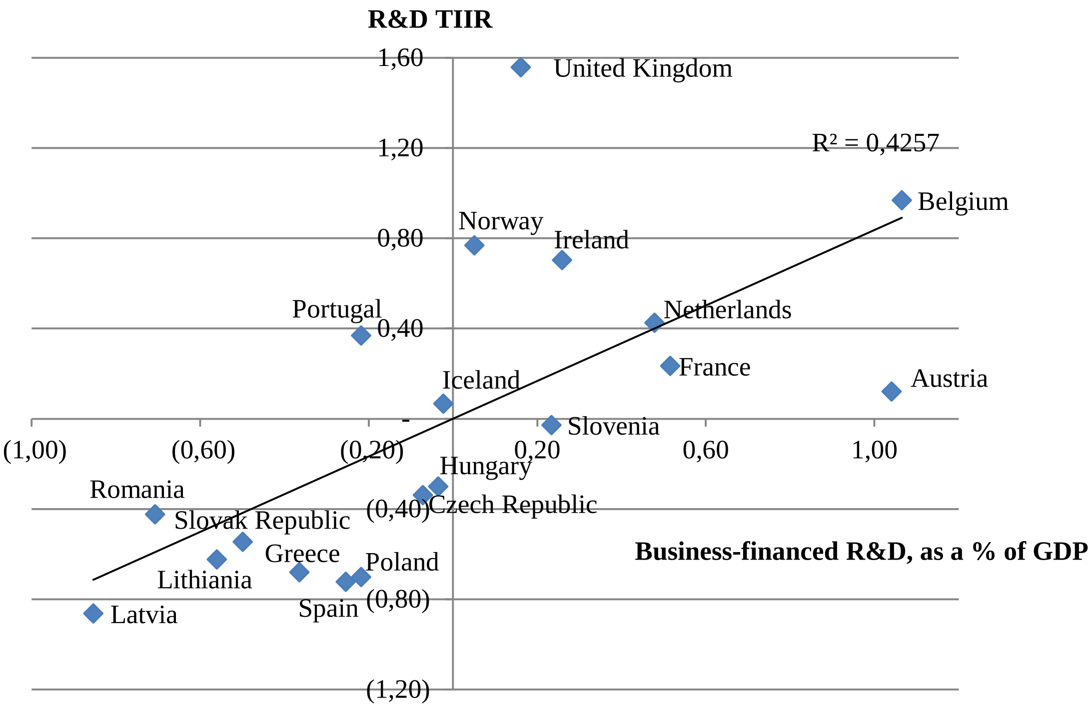
Note: figures for Austria, Belgium, Latvia, and Ireland are for 2017, for Romania for 2016.

Source: own construction

Figure 3 – R&D tax incentive implementation (utilisation) rate, 2018

As can be seen from the figure, the highest TIIRs are in Turkey and Italy, which can largely be explained by the low generosity of tax incentives in these countries – the tax subsidy rates are 0.09 for Italy and 0.06 for Turkey[viii] for profit-making firms in 2018, while the average tax subsidy rate in the analysed set of countries is 0.22 for SMEs and 0.20 for large profit-making firms, taking into account weighted tax subsidy rates for some countries. Therefore, the ease of availability of tax incentives in these countries can be related to low tax expenditures on R&D in the national budgets. The highest use of R&D tax incentives, at a given level of generosity, is observed in the United Kingdom, Belgium, Norway, Ireland and the Netherlands, while the lowest tax incentive utilisation rates are in Romania, the Slovak Republic, Lithuania, Greece, Poland, Spain and Latvia. Since the latter group of countries, except Spain[ix], do not have limitations in the use of tax incentives in form of ceilings, low TIUR can signal low interest in tax incentives in these countries due to lack of awareness, existence of administrative barriers to the usage of tax incentives, or high compliance costs to firms. Therefore, tax incentives in these countries may be less attractive to firms due to less efficient implementation of the R&D tax incentive policy.

To test if TIIRs are positively associated with business-financed R&D the relative positions of countries based on these two indicators were identified[x] and the correlation coefficient was computed to assess the strength of such association (Figure 4).



Notes: figures for Austria, Belgium, Latvia and Ireland are for 2017, for Romania for 2016. For Ireland business-financed GERD as a percentage of modified GNI is estimated. Turkey and Italy are excluded from the correlation analysis due to their extraordinarily high TIIRs.

Source: own construction

Figure 4 – The strength of association between business-financed GERD and R&D tax incentive implementation rate, 2018

As can be seen from Figure 4, the R&D tax incentive implementation rate is positively correlated with business-financed GERD. The correlation coefficient is at 0.652, which indicates a strong positive association among variables. Therefore, if a causal relationship presents it can be that it is not the generosity of tax incentives itself but their successful implementation that drives the policy effectiveness.

CONCLUSION

The developed approach to analysing the attractiveness of tax incentives points out the necessity of accounting for the additional features of R&D tax incentives which can affect tax incentive take-up (such as their availability, simplicity, or ease of use, etc.). By linking the generosity of tax incentives and the amount of actual tax support provided to firms, TIIR provides information about practical implementation of tax benefits. The computation of countries' specific TIIRs will allow policy makers to judge the relative attractiveness of R&D tax incentives from firms' perspective, as well as to identify a country's relative position in the efficacy of policy implementation. These conclusions may guide policy decisions on better shaping the policy based on the benchmark TIIRs. The heterogeneity in the policy implementation may be further explored to draw conclusions on the premises of efficient policy delivery.

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[i] The underlying theoretical framework is based on the approach to measurement of the user price of capital developed by Hall & Jorgenson (1967). Later, King & Fullerton (1984) expanded the model with the aim of deriving marginal effective tax rates (METR) on various types of investment. The B-index represents the tax component of METR; however, qualitatively the B-index gives the same results as the METR (Warda, 2001; Jung, 1989).

[ii] It can be noted that the adjustment factor will be higher for tax credits which can be carried forward indefinitely than for those which can be carried forward for a limited number of years ($\psi(T,\lambda,i) < \psi(\infty,\lambda,i)$).

[iii] In the formula the business-financed GERD (or BERD) by domestic and foreign business-enterprise sectors (where applicable) should be considered depending on the eligibility of certain R&D expenditures.

[iv] For ease of calculation relative measures to GDP are used rather than absolute figures. However, this depends on the user of the methodology.

[v] Tax support normalised by the level of business-financed R&D.

[vi] In Lithuania the limitation of the tax benefits is for loss-making firms only – the amount of carry-forward losses may not exceed 70 per cent of taxable profit of a particular accounting year.

[vii] Including Turkey.

[viii] Italy and Turkey do not differentiate tax support by firm size

[ix] The weighted tax subsidy rate is not reported for Spain.

[x] Specifically, based on the deviations of these indicators from the sample mean.