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**THE SURVIVAL OF ICT COMPANIES IN
BOSNIA AND HERZEGOVINA: RESEARCH AND
DEVELOPMENT TAX CREDIT**

Review

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Abstract

Research and Development (R&D) Tax Credit is a widely used incentive designed to encourage companies to invest in R&D. The goal is to stimulate and accelerate the development of certain business branches thus affecting the growth of foreign capital investments, competitiveness on the international market, and the employment rate. After years of business uncertainty, Bosnia and Herzegovina (BiH) seems to have found its competitive advantage in the Information and Communications Technology (ICT) industry. Since 2010 until today there has been an increase of 72% in this sector, with most companies being founded between year 2005 and 2016. Immensely competent staff, relatively cheap workforce, a favourable geographical location and adequate Internet and software infrastructure allow the country to compete with the world's largest ICT powers on an equal footing. However, regardless of the potentials of the ICT sector in BiH, there is a lack of governmental support concerning the export of software products, inconsistency and incompatibility of national legislation with world standards in terms of online marketing, the high fiscal costs in the industry, and the brain drain of young professionals. Unless they want to leave to chance the development of the country's strategic sector, the authorized institutions in BiH must immediately create and implement a clear strategy that

would determine the direction of development of the ICT sector. Proposed tool is the state program that would enable R&D tax credits under certain conditions for start-up companies, outsourcing companies, and other formal legal structures that bring multinational ICT companies to the domestic market, thus creating a supportive environment for local ICT companies without interfering with their business models, and allowing unhindered private sector growth that would beget economic development.

Keywords: Tax incentives, IT management, Innovation and innovative business models, Entrepreneurship

1. INTRODUCTION

Globalization and new technologies have created additional challenges for the global economy. *Innovation* became a key differentiator between successful and unsuccessful companies, and the contemporary cold war between the countries is battled in the Research and Development (R&D) department. As the key component of the innovative process, R&D is crucial for productivity and profitability of the company. Accordingly, to incentivize the companies to invest in R&D, many countries are creating various tax incentives. Such policies are of extreme importance especially for small and medium enterprise (SMEs) as they allow them to create new products and services, and to increase their market competitiveness quickly and sustainably.

The goal of this paper is to show importance of R&D tax incentives in the Information and Communications Technology (ICT) sector in Bosnia and Herzegovina (BiH): higher incentives contribute to higher business activity and economic growth of the country. The paper will examine the current state of the ICT sector in BiH, focusing on the period from 2010 to 2016. It will also identify the existing obstacles for its further expansion, and explain why current policies don't bring results. Finally, the paper will propose a national model designed to encourage ICT companies to invest in R&D, and to, thus, accelerate the growth of foreign capital investments, grow competitiveness on the international market, and increase the employment rate.

1.1. Model and Data

For the purpose of this research we have used a special methodology, combining the data from a few different direct and indirect sources. This paper will have used the data from the recently published study 'Gender equality in the IT sector in Bosnia and Herzegovina' (MarketMakers, 2016). The abovementioned study was conducted in the period from 27.04.2016 to 20.05.2016, containing and analysing the data from online surveys, cold-calling and interviews, as well as the archive analysis of the data regarding the IT universities and IT companies. Moreover, we have obtained additional

information through direct interviews with heads of the ICT companies registered in Tron¹ and their employees. Finally, we have analysed information available in the written media and the Internet, as the official data and case-studies regarding this topic are almost non-existent.

2. ICT SECTOR IN BOSNIA AND HERZEGOVINA

The ICT sector in Bosnia and Herzegovina has been experiencing expansion in the last couple of years. From 2010 until today it grew by 72% (Lagumdžić, 2016) with most companies being founded from 2005 to 2014. Market analysis underlines IT experts as the most desirable workforce on the market (Kolektiv, 2015, p.17). Total of 20 IT companies that participated in the survey employ 916 people. Additionally, each company on average hires 17 new employees annually (MarketMakers, 2016, p.11). However, 90% of companies experience issues in the hiring process. 75% of them have a hard time finding employees with relevant work experience and skills, which points out to misbalance between demand and supply in the job market (MarketMakers, 2016, p.11). The workforce deficit is undeniable indeed; it is a worldwide issue in this sector. Nevertheless, the cardinal problem in BiH is actually incompetitiveness of the ICT companies on the global market. Existing and qualified domestic workforce often chooses to work for foreign companies which provide higher salaries and *freelance* benefits. In attempts to beat the trend and to find and keep qualified workforce, ICT companies invest highly in providing desirable work conditions. 75% of the companies from the analysed sample offers flexible work hours, 60% organize weekly teambuilding activities, 60% offer free drinks, 50% provide good conditions for sick leave, and 45% of them allow extra vacation days. Domestic ICT companies also offer coupons for sports activities and parking tickets; they provide free education and free food; and they pay for overtime, insurance, and travels (MarketMakers, 2016, p.12).

Workforce deficit is not the only problem present in the ICT sector in BiH. Lack of legal structure regarding the software export, online marketing inconsistencies with the EU standards, high fiscal costs, and brain drain all stand in a way to the development of this sector. It is absolutely necessary to ease the legal structure that hinders the progress, and to swell the role of the state in this industry. Certainly, one of the ways is to encourage employment by reducing employment costs, thus consequently strengthening the companies, making them more appealing to workforce, and preventing brain drain (Lagumdžić, 2016). However, there are a few issues with such approach and especially in the ICT sector. Available programs of co-financing employment assume an existing pool of skilled, unemployed workers who also satisfy additional criteria such as location, age, gender, etc., which is not the case in this sector. The newest statistics certainly shows an increase in the interest for ICT education and additional training, and a lot has been done in bettering educational system apropos this sector, which will certainly have a positive spill over in the future. However, the

¹ TRON Business Intelligence System is the target base of financial and other companies in Bosnia and Herzegovina.

current availability of *skilled* workforce that is looking for employment is at low ends. Therefore, the existing programs, even though they contribute to lowering the employment costs for employees, do not solve the problem of fulfilling available work places. Companies still have to invest greatly in additional training and education in order to produce qualified workforce – something that educational system fails to do. Having in mind the complexity of this problem, as well as duration and cost of the process necessary to solve it, it is irrefutable that the government should focus on other policies, especially those that would allow ICT companies to grow organically.

3. RESEARCH & DEVELOPMENT TAX CREDIT

Bosnia and Herzegovina is a middle-income country with underdeveloped capabilities in human capital and low levels of research and development investment, which puts it at the bottom of the list regarding the economic development in the European continent. The country faces numerous challenges concerning capacity for economic growth, which highly relate to extreme underdevelopment of knowledge base of research and technology to foster new sources of competitiveness of the private sector. While no reliable statistics exist, estimates for R&D expenditure are quoted at about 0.12% of GDP (billions of US, PPP) which is less than a tenth of the average for EU-27 of 1.8% (RCI Project Paper, 2016, p.3). Gross expenditures for R&D are estimated between 0.1 and 0.14 percent, which is much lower than in neighbouring Serbia (0.35 percent), Croatia (0.90 percent), Montenegro (1.10 percent) or the EU-27 average (1.84 percent) (WorldBank, 2016, p.5). In 2012, BiH ranked 72 out of 125 countries according to the Global Innovation Index Rank (WorldBank, 2016, p.6). In 2010, only one patent was filed by BiH in the USA, while the average of the Western Balkans is 60 (WorldBank, 2016, p.11). Additionally, capacities to grow are limited. Universities lack resources, connection between academia and private sector is almost non-existent, as well as the connection between science and technology. Moreover, there is no financing structure for R&D, and business sophistication is low and limited by high expenditures related to running a business. There have been certain improvements in recent years, in particular with the adoption of the Strategy for the Development of Science in BiH 2010-2015 (STI Strategy), the Framework Law on Science (2009), and the Framework Law on Higher Education (2007). Consulting and advisory bodies have been created, but implementing agency, monitoring mechanisms and countrywide approach for research and innovation have yet to be established (WorldBank, 2016, p.5).

In this paper we propose a concrete national model designed to encourage companies from ICT sector – the fastest growing sector in the country – to invest in R&D. According to most recent statistics, R&D explains up to 75 percent of differences in total factor productivity growth rates at the country level. Also, at the firm level, R&D expenditures are correlated to higher sales and productivity growth and propensity to export. Innovative firms grow 15 percent faster in

sales and 8 percent faster in labour productivity than non-innovative firms. It is also acknowledged that product innovation, which results from R&D efforts, leads to employment growth (WorldBank, 2016, p.2). Consequently, national economic growth and economic development parameters begin to increase.

Different countries choose different incentives for R&D depending on a few factors (Hutschenreiter, 2002):

1. the level of innovation
2. familiar market inconsistencies in R&D
3. industrial structure
4. the size of the company
5. the kind of a tax system in the company and the country

As previously discussed, the level of innovation in BiH is at low ends with many issues and market inconsistencies. Companies are mostly SMEs and current tax system in the country is deploying most of their budget lines. Having in mind the abovementioned, we argue that tax incentives are the most appropriate incentives to encourage ICT sector to invest in R&D. Other methods, such as subventions, loans or grant are likely to limit companies' freedom to choose when, where and how to invest, thus creating unnecessary costs and not solving the most pressing issues. Tax incentives allow companies to choose the most productive investment strategies; they reduce risks of investing in a wrong project as companies possess necessary know-how; they reduce administrative costs; and they encourage cooperation and additional investment in private sector. These incentives usually appear in one of three kinds (Kesner-Skreb, 2001):

1. tax deferrals – which enable companies to defer the tax payment;
2. tax allowance – they allow companies to reduce the profit at base for an amount exceeding actual investment in R&D;
3. tax credits – which provide companies with the possibility of reducing the tax liability for part of the R&D expenditure.

We argue tax credits to be most effective in creating both immediate and long-term effects. They would encourage companies to invest in R&D in their sector, to utilize and improve the current know-how, and to stimulate overall private sector to make additional investments. Additionally, we encourage volume-based incentives, where the credit is based on the absolute volume of R&D expenditure, as oppose to incremental-based ones, where the credit is driven by the increase in R&D spending over a base figure. This is because the incremental approach provides limited encouragement to SMEs whose R&D expenditure is at a steady level. To sum, R&D tax credits would enable companies with the possibility of reducing the tax liability for part of R&D expenditures under certain conditions to start-up companies, outsourcing companies, and other formal structures that bring multinational ICT companies to the domestic market, thus creating a supportive environment for local ICT companies without interfering with their business models, and allowing unhindered private sector growth that would beget economic development.

The positive example of the abovementioned approach is present in the UK where the similar scheme was introduced in 2000 for SMEs. Any company that carries out R&D is eligible to qualify, and definition of R&D is broad and takes place across the whole range of company operations as long as the key principles are respected, which include (HMRC CIRD manual):

- seeking to achieve an advance in science or technology
- subject to scientific or technological uncertainty
- conducted in a systematic and thorough fashion

The UK government introduced volume-based structure, where the credit is based on the absolute volume of R&D expenditure. They also identified eligible cost which include staffing costs, consumable costs, software, subcontractors and research contribution. Up to 33.35 percent of qualified expenditure is available as a cash credit for SMEs, and 11 percent for large companies. To ensure proper execution, a working group was established, known as the R&D Consultative Committee. Member include representative from governmental tax department, treasury, delegates from the industry, and other business, technical and trade bodies (HMRC CIRD manual). As at 2013, about 100 000 claims have been made and over £9.5 billion of relief has been claimed (HMRC, 2015).

Many other examples of similar policies are present in countries across the world. In most of them, an elaborate system of financial incentives is available to fuel R&D for both domestic investments and growth opportunities abroad. Such systems constantly shift aiming to align with ever-changing political and social landscapes. In some countries, mentioned incentives are designed to foster overall growth, while in others, they target specific sectors. Most developed incentives that bring about important growth results are listed and summarized in Deloitte's analysis on tax credits (Deloitte, 2015):

- Australia: SMEs are eligible for a refundable tax credit of 45 percent of qualified research expenses (QREs), but QREs are not deductible. SMEs are entities with gross receipts of less than AUD 20M that are not more than 50% controlled by exempt entities.
- Austria: A refundable 12 percent volume based tax credit is available for all taxpayers to the extent the credit exceeds the amount of the company's tax liabilities (10 percent for fiscal years commencing before 1 January 2016).
- Belgium: Excess tax deductions may be converted into a tax credit refundable after five years if not utilized.
- Canada: 35 percent federal ITCs for small Canadian-controlled private corporations (CCPCs) on up to CAD 3M of qualified expenditure per year. This limit applies to all corporations in an associated group. The corporate group of companies must have less than CAD 800K of taxable income and less than CAD 50M in taxable capital employed in Canada (TCEC) to qualify for the refundable ITCs. These caps are based on the prior year.

- France: If research tax credits are not utilized within three years, the taxpayer receives a refund for the unutilized credit. Research credits are refundable for SMEs, new companies, young innovative companies and companies facing financial issues.
- Ireland: Unused credits may be carried back one accounting period and carried forward indefinitely. If there are unutilized credits after the carry back, the taxpayer may apply for a refund (payable over three years), subject to certain limitations and caps.
- Singapore: There is an option to convert up to SGD 100K of tax deductions into a non-taxable cash grant for each qualifying tax year from 2013 to 2018 at the rate of 60 percent (i.e., SGD 60K).
- Spain: The requirements that must be met to qualify for refundable credits limit opportunities for refunds.

While different countries use different policy approaches, they all share economic and social benefits that come from investments in R&D. Truth be, the magnitude of economic effects is hard to measure, but Ernst & Young did a good job in the USA in 2005 (EY, 2005):

- 17,700 corporations claimed \$6.6 billion in R&D Tax Credits on their tax returns in 2005. Approximately 11,300 C corporations and 6,400 S corporations claimed the credit.
- Corporations claiming the R&D Tax Credit in 2005 divided up by size are 29% had \$1 million in assets or less, 25% with assets of \$1–\$5 million, 25% with assets of \$5–\$25 million, and 21% with assets of \$25 million or more.
- 14,953 corporations with less than \$50 million in total assets claimed more than \$891 million in Federal Research and Experimentation Tax Credits.
- 71.2% of these corporations had a Standard Industrial Classification in some type of Manufacturing, the remaining 28.8% include Services, Information, and Agriculture.

The abovementioned examples represent a summary of policies conducted across the world. While they all vary in duration, structure, eligible costs, and amount of tax credit, they all certainly create many benefit for companies and countries in which they are being implemented. Top 5 benefits defined by Swanson Reed (2017) include:

- The start-up business benefit: the R&D tax credit is designed to help all business finance R&D initiatives, which means clear benefits for small and start-up companies. In the USA, such companies can apply up to \$250 000 of R&D credit against payroll liability.
- Increases company's bottom line: R&D tax credit helps companies reduce state tax liabilities, but it also becomes their asset in increasing the market values. Money save as a result of such incentives can be re-invested in further R&D activities, thus additionally create company's growth and cash flow.

- Motivates national innovation: tax credit helps companies improve their products, processes, technology, and software, which, in turn, helps them generate higher company profits and incentivize better human capital
- Maintains competitiveness in the globalized economy: incentives such as tax credits help companies to become more efficient and to gain technological advancements that strengthen their presence in a global market place. R&D tax credits improve company's ability to compete in the global market, and they, therefore, help countries to compete in the global economy.
- Makes investing in R&D worthwhile: in most of the countries the definition of companies that can apply for tax credits is wide, allowing a great number of companies to claim and enjoy benefits, as long as they invest in R&D.

Having in mind the abovementioned, it is even clearer that Bosnia and Herzegovina should immediately begin working on defining and implementing R&D tax credits policies in the ICT sector, and from there, expand to other fast growing sectors.

4. CONCLUSIONS

In the recent years the importance of investing in R&D in became one of the main discourses between economic and political leaders in BiH. It has been agreed that top priorities for BiH are to design and implement policy measures to encourage investments in R&D and innovation capabilities in the business sector, and to stimulate the development of an Information and Communications Technology (ICT) cluster and provide the cluster with common infrastructure and other tools for joint R&D and innovation (WorldBank, 2016). Additionally, STI defined tax incentives for companies that invest in research activities as one of its nine priority goals for the short-term period. Unfortunately, specific instruments have not been defined and concrete actions did not take place.

In this paper, we underlined R&D tax credits for the companies in ICT sector as the key policy to achieving economic growth in the future. Such policy would increase R&D spending which would result in a corresponding increase in productivity thus leading to per capita income growth. Moreover, advocated policy is cost-effective and sustainable, connecting the public research institutions and the private sector, within and across industries.

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