

# From Efficiency to Innovation-Driven Economy with Stimulation of Innovation

Misko Dzidrov, Ljubica Stefanovska Ceravolo, Simeon Simeonov

**Abstract**—the terms of entrepreneurship, entrepreneurs and innovation have been increasingly recognized and connected with well-being and economic development of the country. Here we arise the question on influence of innovation on the economic growth of the Eastern European countries. Porter's three stages growth cycle: factor, efficiency and innovation driven is used for defining the factors affecting and comparison of the countries in the East Europe region.

**Index Terms**—Development, Efficiency, Entrepreneurship, Growth, Innovation, Resources.

## 1 INTRODUCTION

Entrepreneurship as a term has become an increasingly widespread around the world, where the society and the entrepreneurs themselves connected the term with well-being and economic development of the country. In addition to this the role of innovation has to be emphasized as a prime source of entrepreneurial opportunities. Innovation as a factor has been measured in a set of criteria that includes the number of new products invented and new services offered, new high-tech jobs created, level available employees with innovation know-how, new business plans, models and routes to market (Sappin, 2016)[11].

Here we arise again the question that was part of the previous research on influence of innovation on the economic growth of the eastern European countries [6], and that is the entrepreneurial effect on growth in correlation to the economic development of the countries. Porter et al (2002)[8] used three stages growth cycle: factor, efficiency and innovation driven stage where it is expected to have separate product structure and even different structure when it comes to entrepreneurs and start-ups.

## 2 THE DRIVE TO ECONOMIC DEVELOPMENT

The main question is why entrepreneurship and innovation stimulate the growth of the countries. And many will argue that this is expected since they create new jobs, they stimulate the market competition and from all of that they increase market output, hence they stimulate country's economy. This is easily seen in economies where entrepreneurship and innovation are integrated in the normal functioning of the market and the economy. But what about Eastern European countries that have to stimulate activities to increase entrepre-

neurship and innovation in their countries.

Acemoglu (2006) [1] sees innovative entrepreneurship as a specific mechanism for productivity growth in advanced economies, where the most noticeable difference between the economies comes from the independence of the technology, where those that are leaders in the technological development and innovation, disperse it to those that fall behind in development (Gries and Naude 2008, 2010), [4]. Generally speaking, economic growth in any economy is driven by new technologies and their creative applications. This is seen in many historical examples where periods of rapid innovations led to the strong economic growth of the country (Sappin, 2016)[11]. Countries like Macedonia and the other Eastern European countries, entrepreneurship is mostly based on imitation opposite to the developed economies where innovation and change most likely comes from the cooperation between small entrepreneurial start-ups and companies with developed R&D departments (Baumol 2002 - as in [10]). This can go on in depth where Stam and van Stel (2009) as in [10] analyzed the effect of entrepreneurship and innovation, where they find that entrepreneurship has very low effect in low income economies, where the opposite prevails in developed economies. This brings us to the most important key for entrepreneurship and innovation stimulation, and that is the human factor, more precisely the level of education of the population. Having an educated population that creates in environment that supports entrepreneurship and innovation is the key for successful economic development in any economy. Well educated population has the freedom to work creatively and take reasonable risks for new entrepreneurial steps to redefining problems (solutions) to create new jobs, to address environmental and socio economic issues in support to the economy. Of course all of this is supported on a local and national level from the country, where thus is especially noticeable in the entrepreneurship opportunities in high income countries, where qualified and educated entrepreneurs have a great help and are well connected to the local network.

Another key influence that entrepreneurship and innova-

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tion bring is the stimulus in the country and the region throughout expansion of their idea and business in the markets. They contribute directly to the “region’s productivity and earnings that “increase revenue strength of the economy and promotes the overall welfare of a population” (Sappin, 2016)[11]. This brings the question of political support for regional integration that will ease the regional entrepreneurship throughout joint planning and investments in infrastructure. This is very common in innovation driven economies and regions, but parts of East Europe are still struggling with conflicts that happened in the 90’s, but left a big scar in the region. This kind of issues burden the development and instead of supporting the economy with entrepreneurship and innovation, local economies are coping with day to day functioning deprived of ex-situations. On the other side this is much needed in the time when the world has become a global village with interconnected economy and huge dependency on foreign markets.

serve the natural resources, fight new environmental problems and with that indirectly encourage local and regional growth.

### 3 MEASUREMENTS

All Easter European countries are in the group of the modest innovators, but there have been some improvement in the recent years. We will present comparison of the countries on different criteria regarding the level of innovation, where the main argument will be the situation with Macedonia.

Innovation Scoreboard [5] measures innovation using set of criteria including the number of new products invented, the percentage of high-tech jobs, and the number of graduates available to tech industry employers. It compares countries' performance on each of the 25 predetermined innovation dimensions and indicators over an eight-year time period (Figure 1). In the last Innovation Scoreboard, by the European Commission, in 2016 Sweden is the most innovative country in Europe, boosted by human resources management and high-quality academic research. Then, Denmark, Finland, Germany and the Netherlands follow, making the top 5 innovation economies in Europe. Easy visible is that there is a huge difference between areas in Europe, especially between East European countries that struggle to modernize and the members of the European Union that are the leaders in innovation. There are, also countries that are in their post-economic crisis recovery, like Greece and Spain with in a way obstructed innovation levels compared to the previous years. (Figure 2)



Fig.1. Innovation scoreboard 2016, by European commission

Consistently entrepreneurship and innovation bring vation for economic development with addressing environmental changes that affects natural resources. The preservation of what we have and what can be salvaged will be a great base for the economy in the future. New inventions and entrepreneurship approaches are much needed in some industries that are affected by the changes in the environment and sometimes innovation is the only solution for some new problems. All of this will increases productivity and enhances economic development in a long term. Macedonia and the region are slowly experiencing changes in the environment (heavy rains with floods) that needs fast reaction, especially in agriculture that is very relevant to the region since most of the counties are agriculture economies. Addressing new challenges with innovation and entrepreneurship approaches will help to con-

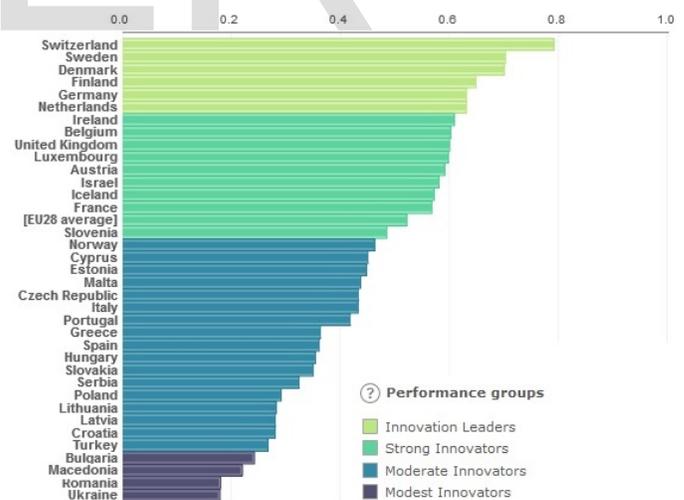


Fig. 2. Comparative analysis of innovation performance in EU Member States, other European countries,

Source: Innovation Scoreboard, European commission, 2016

Macedonia is a Modest Innovator. Innovation performance has increased over time. The country has been gradually catching up to the performance level of the EU: its relative performance improved from 33% in 2008 to 42% in 2015. (Figure 3)

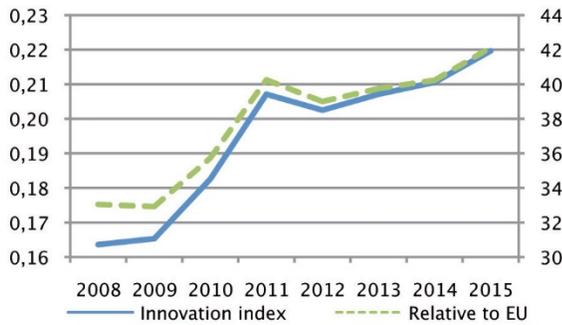


Fig. 3 Macedonia compared to the EU average  
Source: Innovation Scoreboard, European commission, 2016

Macedonia is performing below the EU average for nearly all 25 dimensions and indicators. The report states that the worst performing dimension is the Finance and support for innovation. There are some relative changes, which give better hope for the next years in Non-R&D innovation expenditures and SMEs with product or process innovations. One more dimension that has increased and will affect the overall situation in the upcoming period and it is related to the previously said is the increased Human resources (8.6%) dimension.

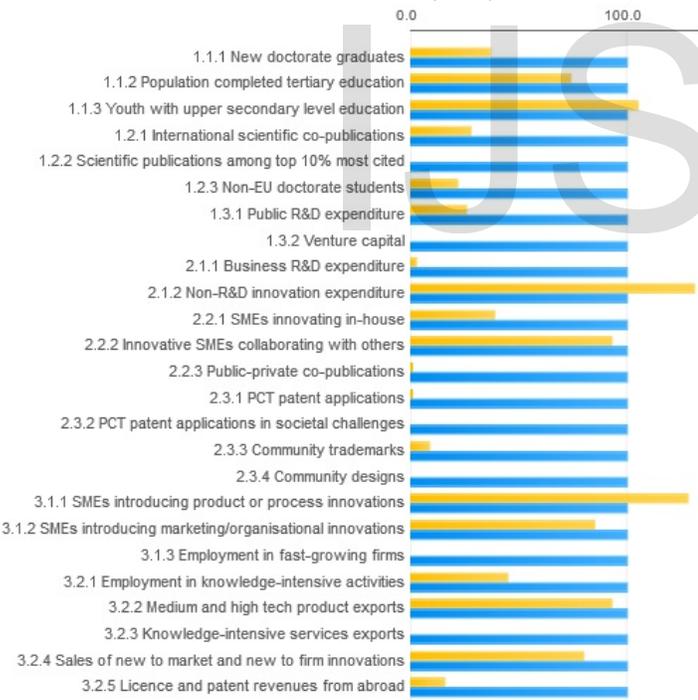


Fig. 4 Comparison of all dimensions and indicators for Macedonia and EU 28 average  
Source: Innovation Scoreboard, European commission, 2016

Another dimension that is in line with the EU 28 average and it is also related to the human factor is the Youth with upper secondary level education. As well as Population completed tertiary education. Having an educated population that creates in environment that supports entrepreneurship and innovation is one of the keys for successful economic development in any economy.

Here we will use another comparison of the countries and the position of Macedonia using the The Global Entrepreneurship Monitor (GEM) [3]. This is a project that assist annually the entrepreneurial activities, aspirations and attitudes of individuals across a wide range of countries. Macedonia's key index is TEA (Total Early-stage Entrepreneurial Activity) rate stands at 6.6% for 2013. This level of entrepreneurial activity is in line with that of other countries in the region. This indicates early-stage entrepreneurial activity in the country. This index is one of the most commonly used indicators for entrepreneurial activity, where higher GEM is common for lower GDP per capita countries. Basing on the information from the report, countries are grouped regarding their GDP per capita and countries are divided into factor, efficiency and innovation driven economies, where Macedonia is in the group of efficiency driven economies. This is important because efficiency driven economies have efficiency enhance conditions that even though not directly related to entrepreneurship, they are indirectly contributing to the development of markets and entrepreneurship, leading the country in a group of innovation driven economies. We see this as a positive signal, particularly because it is accompanied with relative political stability and relatively good business environment.

TABLE 1.  
Economies by Geographic Region and Economic Development Level

Region	Factor-Driven Economies	Efficiency-Driven Economies	Innovation-driven Economies
Europe - EU28		Croatia <sup>1</sup> , Estonia, Hungary <sup>1</sup> , Latvia <sup>1</sup> , Lithuania <sup>1</sup> , Poland <sup>1</sup> , Romania, Slovak Republic <sup>1</sup>	Belgium, Czech Republic, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Slovenia, Spain, Sweden, United Kingdom
Europe - Non-EU28		Bosnia and Herzegovina, Macedonia, Russia <sup>1</sup> , Turkey <sup>1</sup>	Norway, Switzerland

<sup>1</sup> In transition phase between Efficiency-Driven and Innovation-Driven

Source: Global entrepreneurship monitor 2013 global report

In Macedonia, there has been an increase in the promotion of entrepreneurial opportunities in recent years, but the report states that this "has not resulted in an increase in the number of startups". This is huge related to the limited number of consumers, limited geographic markets and it can be also related to the general preference in Macedonian society for working in

the public sector or for large companies. This is all very similar to other countries in its region.

The biggest support of entrepreneurship in Macedonia comes from few key factors, like the government policies and programs that have been introduced in the last years, relatively cheap and educated labor, the ease of business registration and the moderated taxes. Though it is an important factor, not many new startups are using the good geographic location of the country and the proximity to the European Union.

The biggest constraints come from what we have previously stated, the lack of innovative financing. Another halt is seen in the lack of research & development institutions and the linkages between research and business.

#### 4 CONCLUSION

The question of correlation between entrepreneurship, innovation and countries growth has been analyzed by many different researchers. There is a clear connection that has been proven in developed economies in Europe. The main problem represents how to transfer that knowledge and experience in developing countries, or more specifically in East Europe where most of the countries are far behind the "innovation countries" in EU. The challenge to move from efficiency driven to innovation driven economy stays as a task for each different country, as for Macedonia, as part of those countries some points have been raised in this research. The main challenges that remain for the future development of Macedonia's economy throughout innovation are to maximize the entrepreneurial potential by nurturing entrepreneurs themselves, especially if knowing that there is a great potential in the human factor and their education potential. In the same direction it is needed to foster partnership relations with organizations of employers/employees to enhance their capacity. This is also connected to the much needed modernization of the formal and non-formal education systems and fostering even more entrepreneurial education since primary school. There is a much needed increase in the level of governmental financial and also non-financial support for R&D and connecting it to the industry. Regarding the business start-ups, beside the governmental financial help, support is also needed in form of "guiding", low costs to start and tax incentives for all new business. Here we will mention also the need to promote alternative types of entrepreneurship, like social entrepreneurship, or women entrepreneurs and green economy innovations and startups, that have to be supported and easier access to funding has to be provided.

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