# Liberalism - Key to Entrepreneurial and Innovation Success: Estonian Case Study

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*Abstract*

*Since its independence in 1991 Estonia has successfully overpassed the challenges of the transition period being in the present of one the most technologically developed nations of Europe. The present research is intended to evaluate the relationship between Estonian pro-market regulation, entrepreneurship and innovation. In order to reach relevant conclusions in this regard there have been used both qualitative and quantitative methods of analysis. In such a way, it could be comprehensively reviewed the process of Estonian economic development from a relatively underdeveloped USSR republic to an advanced innovation driven economy. The results show that pro-market governmental regulation has favourably influenced Estonian entrepreneurship, while it fostered country's innovation capacities. It has been concluded that the economic "miracle" of Estonia has been at a great extent determined by proper government regulation oriented towards economic liberalisation.*

*Keywords*: Economic transition; reforms; Estonian innovation; entrepreneurship; economic liberalism

*Jel Code*: F15; F23; H20; P16; O38

## 1. Introduction

According to Niall Ferguson competition and science are one of the most important factors which allowed the Western civilization to develop. Innovation is the driving force of progress in every aspect of human activity. In the present conditions of growing global economic competition being innovative can assure you competitive advantages which are determinant for economic success. It has taken centuries to the Western countries i.e. USA, UK, Germany and France to build their powerful economies. Great achievements in terms of economic development has been reached in decades by the Eastern Asian nations including Japan, South Korea, Singapore, China (particularly developed mainland, Taiwan, Hong Kong). Yet,

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Estonia made its economic miracle neither in centuries nor in decades, it has taken 19 years for this small former Soviet Republic to become economically developed.

Estonia regained its independence from the USSR in 1991. Mart Laar (2007), the Prime-Minister of Estonia within 1992-1994, mentions that 50 years of Soviet occupation created huge economic disparities between Estonia and the free world. For instance, by 1987 the GDP per capita of Finland was around $14 thousand, while the Estonian was only $2 thousand. Yet, the real challenge was to overcome the communist economic mentality which for decades eradicated the entrepreneurial spirit of the population. Presently it can be difficult to imagine how obsolete the Soviet economy was at the time of collapse and how difficult the transition to market economy will be. Most of former Soviet republics have not succeeded even close to build efficient market mechanisms, some of them became dictatorial, other are drowning in corruption and kleptocracy. Nevertheless, the case of the Baltic States, in particular of Estonia, is a successful one. Estonian economic transition is a relevant case-study for scholars and policy makers being an example of efficient governance, integrity, patriotism and mostly of strategic thinking.

The innovation and entrepreneurial success of Estonia is based on the economic, social and political reforms undertaken in 90s. The lessons which Estonia can teach resume to the words of Lescek Balcerowicz who said that "Bitter medicine is easier to take in one dose than in a prolonged series of doses". Moreover, crisis is an opportunity to innovate, search for best and change. Furthermore, Mart (2007) comes to underline that "*if essential reforms must be accomplished in a relatively short time, preparation time is also brief*". The reforms must not be delayed and the reforms pack should not be divided.

The present research is intended to outline the steps Estonian government has undertaken to create an attractive entrepreneurial environment and the main policies drawn to foster Estonian innovation capacities as to compete for profitable niches in the global innovation value chains. Thus, it is expected to highlight the interdependence between the governmental policies, entrepreneurial environment and the raise in the innovation capacities of Estonia. In such a way, it will be possible to empirically analyse Estonian economic competitiveness taking into consideration the social and political aspects. Therefore, the economic competitiveness will be associated with social and political efficiency, since an advanced economy is not only defined by the size of GDP per capita, but also by the way the population benefits from it, country's institutional resilience and innovation productivity.

The research results shows that the efficient governance offered Estonia a prominent legal framework which set up clear market rules based on neo-liberalistic principles. It motivated entrepreneurs to invest and grow. Thus, in the conditions of flourishing business environment driven by competition, entrepreneurs started to invest in innovation, be more flexible to succeed in a competitive market, the fact raising the overall country's innovation performance.

## 2 Literature review

Proper literature is an essential feature for a relevant research paper. It helps in forming a firm fundament for advancing the knowledge in studied field. Therefore, a subset of relevant literature has been selected to effectively explore the issues related to the innovation experience of Estonia. Thus, according to Ratso (2005), since its independence in 1991, Estonia has experienced important socio-economic changes leading the country from central planned to modern, innovation driven economy. Some of the most demanding challenges were to overcome the post-soviet economic inheritance including inflexible state owned companies, guaranteed product markets, non-existing financial intermediation, guaranteed jobs, trade deficit and fixed prices. To efficiently overcome the transition, Estonia managed to achieve macroeconomic stability by proper monetary, exchange rate and fiscal policies as well as by implementation of comprehensive socio-economic reforms. In such a way, Estonia introduced its currency-kroon, liberalised markets, started and efficiently finalised privatisation of state owned companies, liberalised trade and foreign investments. Despite the short term difficulties and pressure on labour markets, the reforms and policies led to long term economic growth. Sinani & Meyer (2004) mentioned that the policies promoted in the 90's and beginning of 2000's improved the investment climate in Estonia leading to favourable economic spill-overs of considerable magnitude. This is particularly actual when speaking about labour and sales intensive FDI which had favourable effects on economic and productivity growth. Nevertheless, it is argued that local firms will be dried out of business because of higher competition. In the case of Estonia, higher competition led to overall entrepreneurial growth, due to the fact that local businesses were motivated to use more efficiently own resources or search for better ones. Laar (2007) highlighted that the radical reforms promoted in 90's resulted in fundamental changes which put Estonia beyond recognition from its past assuring the impressive economic growth of above 6% till the 2008 crisis. In such a way, this small former soviet country is catching up to Western Europe's living standards. Economic growth was accompanied by impressive innovation and technological jump which put the nation among the global and European hi-tech leaders. Laar as former prime minister of Estonia mentions that despite the reforms were unpopular and were regarded at the beginning with animosity "This was a dirty job, but someone had to do it. Once set in motion, the train cannot be easily stopped, and this is actually the only thing that matters." Kalvet (2001) pointed up that Estonia's economic "miracle" has been fuelled by the laissez faire approach to economy. The establishment of well-functioning market mechanisms primordial, the task successfully realised by the government in 90s through rapid and large scale privatisation and liberal investment laws. Estonia compared to other former soviet countries had managed liberalise trade, attract investments and combat corruption by reducing the bureaucratic apparatus and the respective pressure upon the business environment. At the same time Sinani & Meyer (2001) underlined that the economic reforms pursued in the 90s led to favourable climate for attracting FDI and boost local businesses. Growth in the competition favoured the domestic output since more investments were made in intangible and machinery assets. Nevertheless, few local firms succeeded in facing the competition from foreigners, since they had increased financing capabilities, resources and managerial expertise. Yet, the firms which did succeed created a stable and progressive fundament for Estonian economy to grow.

Small countries such as Estonia need to invest time and effort into creating high international connectivity. The small size of domestic market does not provide enough opportunities in creating larger and more sophisticated structures unless it assured economic openness. The integration of Estonia into regional value chains in the 90's as well as into the European Union in 2004 boosted internal entrepreneurial spirit due to the absence of restrictions and previously made investments into education. The first steps made at the end of 90s towards knowledge economy brought important present benefits. The success of Estonia's innovation relies on systemic approach to fostering entrepreneurship (Roolaht, 2012). Janton-Drozdowska & Majewska (2016) mentions that to assure stable and above the average economic growth, the former communist countries, including Estonia, need to escape the cost efficiency trap since they are not competitive on this area compared to Asian countries, especially China and Asian tigers. The only way to succeed in the global competition is to exploit the potential of geographical location accompanied by efficient infrastructure to facilitate the knowledge spill-over. At the same time, Rae & Westlake (2014) highlighted that innovation improves the Estonian economic competitiveness. By declaring in 2000 the internet as a basic human right, Estonia managed to get involved in an ambitious technology race. In the period of 2007-2013 Estonia implemented the Research & Development and Innovation Strategy called "Knowledge-Based Estonia" which synthetizing the achievements obtained in the previous periods. In such a way, it was demonstrated that a small nation can successfully integrate in global value chains competing larger nations with more legacy infrastructure.

Growth of FDI led to increased local competition which motivated the businesses to increase the investments into innovation having a positive impact on country's productivity. Thus, Estonia was capable of entering new markets and reduces the dependency from the traditional one, Russia. The growing labour costs powered by economic growth made it necessary to reduce the production costs through process innovation. Nevertheless, it should be underlined that in the first period since Estonia's independence economic growth was rather extensive than intensive. Only starting with the beginning of 2000s Estonia began to benefit from intensive economic sectors and consequent growth (Masso & Vahter 2008). Kalvet (2004) said that the participation in international supply chains does not guarantee automatic knowledge transfer it requiring significant involvement of local businesses capable of absorbing and disseminating internationalisation knowledge on the local market. Estonia succeeded in attracting FDI and absorbing modern technologies, yet the rise of China and other global low cost technology giants menace its positions. In these conditions, permanent innovation and continuous modernisation of public sector is required to allow ICT industry to produce more complex goods. Damijan (2003) concluded that FDI is by far the most important driver for productivity growth of local firms. In case of Estonia, the FDI provided significant technological transfer. The high degree of economic openness of Estonia including in the area of capital transfer and trade helped the state to overcome the consequences of transition in a relatively short period of time. An important advantage when attracting FDI is the geographical position of the destination. Thus, Goroseanu (2015) concluded that there is important bias when directing investments, the Northern East Europe being more favoured comparing to the Southern counterpart. In such a way, Estonia benefited from its geographical position when attracting FDI. The presence of wealthy and stable neighbours such as Sweden, Finland and Germany played a significant role in Estonia's economic miracle (Garoseanu, 2015). Estonia has used Sweden and Finland as role models establishing a range of similar institutions and programmes. This fact assured high levels of FDI inflows including from Scandinavian countries which had a favourable impact upon its economic productivity. Particular motivations for FDI were a lower than regional corporate tax, favourable economic climate and low cost base. To face higher economic competition, government of Estonia laid the foundation for a strong innovation driven economy by supporting R&D and businesses (Gudgin et al 2011).

OECD (2015) underlined that Estonia has built an impressive ICT sector and strong business creation. Nevertheless, few business firms collaborate with research institution, while exports are based on low and medium technological goods. The FDI inflows in high value added products are small. Infrastructure has been considerably improved, yet there is a range of difficulties the businesses face. One of the most demanding issues is the corporate bankruptcy procedures which are long rising exit costs for entrepreneurs. Despite major achievements in terms of human capital, high contribution rates to the compulsory private pension funds as well as generous early retirement schemes put additional pressure upon the business sector. However, the prudent fiscal policy based on low budgetary deficits is beneficial to Estonia's economy providing long terms economic growth prospective. Callegari (2015) underline the scarce significance of FDI spill-overs upon the capacity to engage in exports. In contrast with other studies, the horizontal spill-overs were qualified as insignificant not affecting the intra industry dimension but rather the inter industry one.

Combating corruption and shadow economy is one of the conditions to boost economic development and entrepreneurship. They are consequences of excessive bureaucratic pressure which should be tackled first in order to establish a proper climate for businesses. Estonia succeeded in 90s to implement prominent reforms which reduced bureaucracy and therefore corruption and shadow economy did not affected Estonia at the extent they did in other former soviet countries. Nevertheless, the level of shadow economy is Estonia is higher than in Western European countries, therefore, authorities should undertake efforts to raise transparency in the business sector, to close executive, legislative and tax loopholes (Schneider & A.T. Kearney 2013). Kattel et al (2007) concluded that Estonia needs further investments into R&D related sectors to assure economic growth. Estonia should re-orient the economy from labour cost efficiency to knowledge driven principle since cost efficiency-economic growth potential is limited considering the small country's population and large presence of FDI in the economy. Thus, it is expected that Estonia in the future will enhance the capacities of technological and innovation related economic clusters, they assuring the future development direction. At the same time Ukrainski & Varblane (2014) stated that Estonia is presently moving towards a knowledge driven economy with rapid speed, the existing gap comparing to OECD leaders is shrinking. Estonia remains an absorber of FDI and has not reached the economic phase to become an exporter. Nevertheless, the innovation and technological capacities laid down in 90's and beginning of 2000's enhance the present Estonia's economic competitiveness which is succeeding in reaching global markets. Moreover, according to Marcinek et al (2011) new approaches to education and learning enhanced Estonian knowledge base having favourable economic impact. In such a way, reformed education system of Estonia assured the economy with qualified and high skilled labour resources with a large share of human capital.

Particularly, it is necessary to mention that the European Union's policies in the area of innovation and entrepreneurship had a favourable impact upon the member states' business environments including Estonia. They fostered the national efforts in this direction boosting institutional and private capacities through the provision of funding. At the same time, it was accelerated inter-communitarian exchange of good practice and experience which provided the Eastern European nations with the possibility to obtain the required high-end innovation and entrepreneurial skills (Crudu & Ignatov 2016). Sirbu et al (2017) as well as Crudu & Ignatov (2017) come to deepen the research in this area highlighting the relations between entrepreneurship, innovation and economic sustainability of the European Union, in general, and of Estonia, in particular. In this case, entrepreneurship is the driver of innovation, while innovation is the moving force of sustainable economic development. Thus, Estonian national efforts accompanied by European Union's initiatives on innovation and entrepreneurship consolidated the country's capacities making Estonia one of the most technological developed nations in Europe. This is a considerable achievement taking into account the challenges the state had to tackle including the centralized communist economy, the transition period and the reforms.

## 3 Methodology

The present paper is based on both on qualitative and quantitative methods of analysis in order to reach relevant conclusions. In such a way, qualitative methodology is involved to assess the impact of Estonian market oriented governmental regulation upon the country's business. Moreover, it is qualitatively evaluated the economic profile of Estonia in the early 90s. There is created a step-by-step review of reforms intended to tackle the main socio-economic and political challenges inherited since the fall of Soviet Union and those of the transition period. Furthermore, there are regarded the main pillars of present Estonian innovation performance which has been set up at the end of 90s. Summing up, the qualitative analysis is applied to identify the background of Estonian economic development and innovation performance or, in other words, to highlight the "cause" from the cause-effect relation. The effect side of the relation is underlined through the use of quantitative methodology. Consequently, it is assessed the Estonian entrepreneurial profile in the period of 2008-2016. The main indexes considered for this purpose are Economic freedom Index, Corruption Perception Index, Macroeconomic Environment, Market efficiency, Business sophistication Index, Ease of Doing Business Index. Where it is relevant, Estonian entrepreneurial performance indicators are assessed in comparison with some neighboring Estonia countries, Western European counterparts and some former USSR republics. Finally, it is applied the correlation analysis to investigate the relationship between entrepreneurial environment & the evolution of gross R&D expenditure of Estonia. Through performing this correlation it is supposed to identify either the business is the main sector contributing to R&D or not. At the same time, it is analysed the correlation coefficient between Estonian R&D expenditure and some indexes of innovation performance including the Global Innovation and innovation score according to the European Innovation Scoreboard. Therefore, it can be concluded if entrepreneurial environment & innovation are interconnected.

## 4 Results

### a. Market oriented governmental regulation

In the middle of 80s it was clear that the Soviet Union needs extensive reforms to defibrillate its flat lining economy. Mikhail Gorbachev in 1985 proposed a comprehensive reforms' plan called "Perestroika" to model the Soviet economy on Western manner. It was an ambitious initiative, yet, it came too late and in a relatively short time USSR collapsed under the burden of shortage, poverty, corruption and inter-ethnic conflicts. The Soviet inheritance the countries have received was dismantling. Besides the weak economies, no market mechanisms and hyper-inflation, the newly formed states obtained poorly functioning institutions, identity crises and lack of market knowledge. The transition, the process of restructuring economies on the Western manner, affected all former Soviet Republics. Some of them succeeded in overcoming this period, namely the Baltic States, other stuck in the middle, i.e. Ukraine, Moldova, Georgia, while the last plunged into either semi-authoritarian regimes or completely dictatorial ones.

Estonia in 2004 joined the EU and in 2010 the OECD. This fact means that the country has completely overpassed the transition and has successfully built modern market driven economy with a relatively high degree of competitiveness. This major achievement has been reached in a relatively short period of time starting with the beginning of 90s. In order to understand the path Estonians have made to reach the status of economically developed state it is necessary to examine the weak starting points. Ratso (2005) identified them as the state owned companies, guaranteed product-markets, no open economy, no real value for money, fixed prices, no real financial intermediation, guaranteed jobs providing no motivation for workers. Nevertheless, to this list it should be added the hyperinflation which in Estonia reached 1076% (1992), contraction of GDP (-21.2% in 1992), de-industrialisation and fall of population's welfare (-20% of GNI per capita in the period of 1990-1994) (Erixon, 2010). The fall of USSR and consequent failure of planned economy created an enormous economic vacuum, with which the government of Estonia, as well as of other post-USSR nations, had to deal.

The first step undertaken by Estonian government to stabilise the economy was to offer the country a stable currency. The newly created Bank of Estonia driven by young market oriented economists and led by Siim Kallas, contrasted with old socialist thinking, they were determinant in assuring the success of the monetary reform (Erixon, 2010). Estonian own currency, the Kroon, was an instrument of empowering the country's economic independence from Russia. The monetary policy of Estonia was based on pegged exchange rates principle. It was conducted by a monetary board which adjusted the rate of peg taking into account the economic needs. This is an important factor for a country which is dealing with hyper-inflation trying to restore its monetary credibility (Erixon, 2010). Besides this, the government has gone through strict budgetary control minimising budget deficits. Balancing the budget required radical cuts in subsidies and governmental expenditure. In such a way it was assured the macroeconomic stabilisation of economy providing a favourable environment for business (Laar, 2007). These measures were unpopular accompanied by protests and demonstrations, therefore, it is important to underline the efficiency the government was able to implement reforms. Second step which was undertaken by the Estonian government was to liberalise the trade. According to Mart Laar (2007) the transition from the first stage of reforms to the second one was decisive in assuring the future country's economic prosperity. Thus, Estonia reduced the barriers to trade including the tariff and non-tariff ones. The main goal was to make the country an attractive free trade zone, this initiative provoked massive protests, yet it was imperative for economic success. Laar comes to underline that the openness boosted competition, reconstruction and economic growth. The third step was to empower the rule of law. The success of Estonia in reaching this aim was based on clear and non-interpretable laws enforcing institutional accountability, especially those involved in justice creating efficient civil service system. It was reduced the involvement of bureaucratic apparatus in business, thus being excluded corruption. Heavy regulation and uncertain rules were eradicated abolishing the power of officials to interfere in business (Laar). The fourth step was the implementation of a proper property reform. In such a way it was enforced the ownership. The privatization was made highly operatively with no restriction for foreign capital based on open bid system or the property was returned to legitimate owners whose property was confiscated by communists. Laar underlines that an imperative condition for privatizing was to guarantee a necessary level of investments and a minimum number of workplaces. Last step which was undertaken regards the implementation of the flat tax system. The main aim was to offer initiative for entrepreneurs to assume risks in the conditions of favourable business environment. The reform was directed towards reducing the lever the bureaucracy can interfere in business relations. Moreover, the flat tax was directed towards raising savings and investments "*encouraging people to create new wealth*" (Laar, 2007). Main factors which assured the success of tax reform in Estonia were transparency, simplicity and efficiency and ease in understanding. It is imperative to mention that these steps required strong political willingness and courage expressed through strong coalition in Parliament which enforced the government to undertake them.

Once the business environment was offered a favourable climate to develop and flourish the innovation performance of Estonia has considerably increased, considering the innovation as one of the most important outputs provided by business. However, at the beginning the Estonians had to learn to innovate and boost entrepreneurial spirit. This process was influence by two factors, the spill-overs of FDI which allowed the technological transfers and the government initiatives promoted in education. Thus, by 1998 all schools in Estonia had computers and internet access. In 2000, the Estonian government declared internet access as a basic human right and stimulated the spread of Wi-Fi technologies. Also, in that period it was developed a modern and efficient e-government system, and most of the services started being accessible online which considerably reduced the resource and time waste. To benefit from the FDI technology spill-overs takes a long time involving economic clusters and structures, however, the digital opportunities depend on economic and technology literacy of the people involved. In such a way, the innovation breakthrough in Estonia was assured more by the education and economic base laid in 90s and less by the FDI. This fact is proved by the formation of a strong private sector in Estonian digital economy, thus, Skype formed and ruled mainly by Estonian geeks was sold to Ebay in 2005 for $2.6 billion (The Economist, 2013). According to Fortune (2017) another digital company from Estonia TransferWise handles about $1 billion a month in exchanges around the world. Furthermore, Estonia is going further in its digital economy, implementing e-residency, digital diplomacy, 5G internet system and Blockchain technologies. The Economist underlined that for 2013 15% of Estonian GDP is made by the online sector.

**b. Estonian entrepreneurial profile**

The reforms of the Estonian government in the field of entrepreneurship have had a favourable impact upon the country's business climate. Thus, this small former Soviet economy became one of the most attractive destinations for investments in Europe. The improved business activity had propelled state's economy, the GDP per capita growth (PPP), in the period of 2006-2016, was 35%, while within 2000-2016, 68%. For comparison, the economic growth of France was in the same periods were 21% and 37% respectively (own calculations based on data provided by the World Bank).

Within 2008-2016 Estonia has improved its entrepreneurial profile. Presently, it is positioned in the top 10 freest economies of the World (#9), having relatively efficient system of enforcing the rule of law, favourable for business regulation, effective bureaucratic system and open economy (table 1).

The policies promoted in the 90s have built a stable fundament for present macroeconomic competitiveness of Estonia (the Macroeconomic Environment Competitiveness, the third sub-index of the Global Competitiveness Index provided by the World Economic Forum) (Table 1). The policy of having a balanced budgetary policy fosters the country's economic stability since the government is not limited to efficiently react to business cycles. Thus, Estonian governmental debt for 2016 was 9.5% from the country's GDP and only 7% in 2009 when the world economic and financial crisis hit the global economy. For comparison, the size of debt of France for 2016 was 96% and 79% in 2009. Even the wealthy countries from the Northern Europe have registered higher levels of public debt compared to Estonia. Thus Sweden, Denmark have the government debt of over 40% from states' GDP while the neighbouring to Estonia Finland more than 60%. The rest of the Baltic States have also recorded public debt of more than 40% (Eurostat).

Estonia is also one of the leading nations in terms of Ease of Doing Business Index, #16. It is a complex indicator comprising the following business dimensions such as the ease of starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency. Relatively high efficiency of Estonia in dealing with these business dimensions created favourable conditions to attract investments and develop innovation driven activities since they require flexibility and transparency (table 1).

Estonia is ranked in top 20 most competitive countries in terms of market efficiency which is the sixth pillar of general economic competitiveness. It shows that Estonia produces competitive products driven by favourable demand – supply conditions, insuring that the goods are efficiently traded. Moreover, the relatively high position of the country in this top, considering its small population of 1.3 million inhabitants, underlines that there is a high degree of market competition, both domestic and foreign, and of business productivity. It also underlines the low degree of governmental intervention in the market neither limiting the inflows of FDI nor restricting trade (table 1).

Estonia has overcome the transition period succeeding in escaping the endemic corruption, poverty and instability, characteristics of most former soviet or communist republics. Consequently, according to the Corruption Perception Index Estonia is ranked 22nd, (table 1) a much higher position as compared to neighbouring Lithuania 38th and Latvia 44th, Russia and Ukraine 131st, Hungary and Romania 57th, Poland, 29th and Moldova 123rd. This achievement was reached through the reforms limiting the implication of bureaucracy in the economy which were undertaken in the 90s and deepened at the beginning of 2000s. It can be observed that Estonia overpasses many of EU countries in this dimension including France #22, Portugal #29, Spain #41, Italy #60, Greece #69 and Bulgaria #79 (Transparency International).

Moderate results are shown by Estonia in terms of its business sophistication, #44 (table 1). This fact indicates that the country's entrepreneurial performance including the main business pillars, the quality of Estonia's overall business networks and the quality of individual firms' operations and strategies, are still underdeveloped. From the perspective of the present research this situation could be exemplified by the relative recent formation of capitalist relations in Estonia, or in other words, Estonia lacks the entrepreneurial traditions which require longer period of time and more complex social interactions. For instance, the Western Europe has been building these capitalist relations for centuries. Thus, the initiatives of the Estonian government in education are beneficial since they help developing entrepreneurial spirit in schools. Moreover, an important spill-over of FDI is the experience and knowledge transfer. Thus, in the future it could be expected that Estonia will close this gap.

**Table 1: Entrepreneurial profile of Estonia**

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|
| Economic freedom Index (A) | 12 | 13 | 16 | 14 | 16 | 13 | 11 | 8 | 9 |
| Corruption Perception Index (B) | 27 | 27 | 26 | 29 | 32 | 28 | 26 | 23 | 22 |
| Macroeconomic Environment (C) | 23 | 47 | 19 | 21 | 20 | 22 | 20 | 15 | 12 |
| Market efficiency (D) | 24 | 28 | 29 | 29 | 31 | 30 | 26 | 22 | 20 |
| Business sophistication Index (E) | 50 | 48 | 56 | 53 | 51 | 51 | 48 | 43 | 44 |
| Ease of Doing Business Index (F) | 18 | 22 | 17 | 18 | 24 | 21 | 22 | 17 | 16 |

*Source:* (A) The Heritage Foundation, www.heritage.org. (B) Transparency International, www.transparency.org. (C, D, E) World Economic Forum, www.weforum.org. (F) World Bank, www.doingbusiness.org.

In order to have a more comprehensive view upon the researched subject, it has been decided to perform a comparative analysis between the entrepreneurial performances of Estonia and of several former communist countries, which in the present are integrated into the European Union, and namely Lithuania, Latvia, Hungary, Romania and Poland (table 2). In such a way, it could be remarked either the Estonian entrepreneurial and innovation performances are following a regional tendency or not. By comparing the information provided in the table 1 and 2, it could be noticed that Estonia is leading on overall in terms of the selected indicators both at the beginning of the researched period, 2008, and at the end, 2016. The country which comes close the most in terms of Economic freedom in 2016 is Lithuania, ranked 13th followed by Latvia 36th, Estonia being ranked the 9th. In terms of Corruption perception index only Poland is approaching Estonia, being ranked on 29th position. Estonia is also leading in terms of Macroeconomic environment competitiveness, ranked 12th, the closest states are Latvia and Romania, 24th and 28th respectively. Furthermore, Estonia has higher market efficiency with no country even getting closer. Nevertheless, in terms business sophistication, the superposition of Estonia is smaller (table 1&2). At the same time, Estonia has competitive advantages in terms of ease of doing business as compared to the other states, having 16th position, while Lithuania only 20th.Therefore, it can be underlined that the reforms implemented and the promoted economic liberalism fostered entrepreneurial competitiveness of Estonia, it leading in all the selected dimensions.

**Table 2: Entrepreneurial profiles of Lithuania, Latvia, Hungary, Romania and Poland**

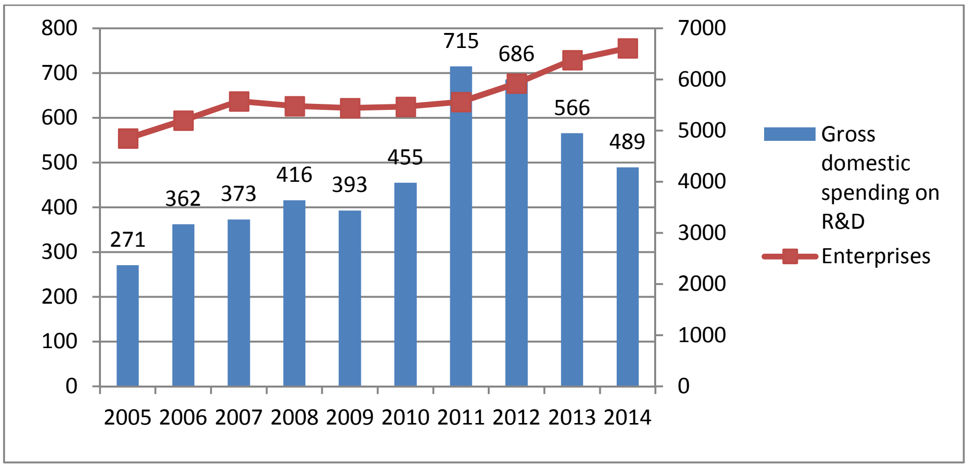
| | | Economic freedom Index (A) | Corruption Perception Index (B) | Macroeconomic Environment | Market efficiency (D) | Business sophistication Index (E) | Ease of Doing Business Index (F) |
|---|---|---|---|---|---|---|---|
| Lithuania | 2008 | 26 | 58 | 52 | 48 | 49 | 22 |
| | 2016 | 13 | 38 | 34 | 39 | 42 | 20 |
| Latvia | 2008 | 38 | 52 | 71 | 52 | 83 | 26 |
| | 2016 | 36 | 44 | 24 | 49 | 58 | 22 |
| Hungary | 2008 | 43 | 47 | 115 | 66 | 68 | 45 |
| | 2016 | 58 | 57 | 47 | 59 | 113 | 42 |
| Romania | 2008 | 68 | 70 | 76 | 67 | 78 | 48 |
| | 2016 | 61 | 57 | 28 | 80 | 104 | 37 |
| Poland | 2008 | 83 | 58 | 50 | 65 | 62 | 74 |
| | 2016 | 39 | 29 | 45 | 47 | 54 | 25 |

*Source:* (A) The Heritage Foundation, www.heritage.org. (B) Transparency International, www.transparency.org. (C, D, E) World Economic Forum, www.weforum.org. (F) World Bank, www.doingbusiness.org.

**c. Calculating the interdependences: Entrepreneurship & Research and Development; Research and Development & Estonian Innovation performances.**

To reach the goals of the present research, it is necessary to find out if there is any relation between Estonian entrepreneurship and the gross domestic expenditure on R&D. In such a way it will be possible to identify the degree to which the R&D activity in Estonia is driven by resident businesses. According to the figure 1, it can be remarked that the country's spending on R&D oscillated throughout the period of 2005-2015, the highest values being reached in 2011, $715 million and in 2012, $686 million. The number of enterprises in the researched 10 years increased with 36% from 4850 in 2005 to 6613 in 2014 (figure 1). It was calculated the correlation coefficient between the total number of enterprises and the country's research and development expenditures. Thus, it was identified a relatively strong correlation coefficient of 0.54 (note: correlation considered the period of 2005-2014). This fact demonstrates that there is a direct link between the entrepreneurial activity in Estonia and the R&D spending of the country. Thus, the higher the number of entities the higher will be the investments in R&D.

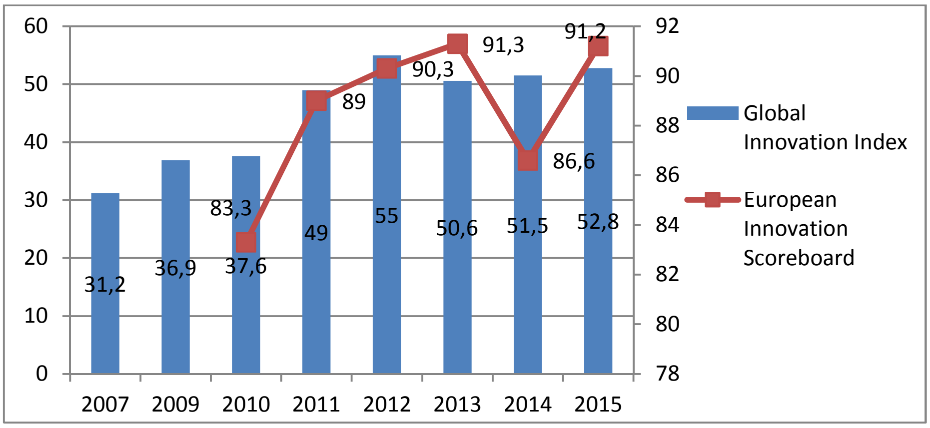
**Fig. 1: Estonian Gross domestic spending on R&D and total number of enterprises in Estonia**




*Source: OECD (2017)*

As it can be remarked in figure 2, the innovation performance of Estonia within the period of 2007-2015 has generally increased. Thus, according to Global Innovation index, country's score has increased from 31.2 to 52.8. Consequently, in 2015 Estonia ranked 23rd while in 2007, 31st. Within the researched period Estonia has climbed 8 positions the fact underlining the clear tendency of the country to increase its innovation competitiveness. In order to have a more comprehensive understanding of Estonian innovation performance it has been examined the country's score according to the European Innovation Scoreboard. Thus, within the period of 2010-2015, Estonia has increased its score from 83.3 at the beginning of the period to 91.2 at the end (figure 2). Since the indexes have different methodologies to assess the states' innovation performances, the superposition of both would enhance the quality of the analysis of the interconnection between Estonian R&D spending and consequent innovation competitiveness. In such a way, it will be possible to assess the connection between the evolution of Estonian business, country's R&D activity and, respectively, the country's innovation performance. It was found out that there is strong correlation between R&D spending and both Global Innovation Index score and European Innovation Score of 0.76 and respectively 0.51. In such a way, it could be inferred that higher R&D expenditure is due to increased entrepreneurial activity which pushed the country's innovation performance, the fact exemplified by both high correlation indexes.

**Fig. 2: The evolution of innovation performance score of Estonia***




*Source: Cornell University, INSEAD, and the World Intellectual Property Organization & European Commission (2017).*

**Note: The Global Innovation Index's score for 2007-2010 was multiplied with 10, to minimise outliers which occurred due to the change of index's scale of calculation.*

It can be underlined that comparing the calculated correlations (table 3) there is a clear tendency of the Baltic States, particularly Estonia and Lithuania and less Latvia, to lead both in more favourable conditions and regulations for business environment and in the innovation field. Thus, the R&D spending of Estonia, Latvia and Lithuania is more interconnected with the evolution of the business comparing to the rest of the countries. It is necessary to remind that R&D expenditure is the main driver of innovation. In these conditions, it could be remarked that the Baltic States are more business driven than the other countries from the region. As it could be expected, the correlation coefficient between GDP spent and Global Innovation Index scores is high for all countries, excluding Romania. Yet, the same could not be said for the correlation of GDP spending on R&D and the innovation scores of the countries according to European Innovation Scoreboard (table). This difference occurs as a result of indexes' particularities in calculating innovation performance. Therefore, it could be considered relevant only the double-matched correlations as to draw up consistent conclusions. Thus, Estonia record the strongest overall correlation, followed up by Lithuania and Latvia, the fact which is not surprising considering the economic similarities between the Baltic States. Yet, Estonia is the leading Baltic nation in terms of entrepreneurship and innovation taking into account more favourable entrepreneurial profile as compared to Lithuania and Latvia. Therefore, it could be marked that the reforms implemented and the policies promoted by Estonia in 90s fostered its business capacities and enforced its competitive advantages allowing the smallest country from the region becoming an innovation driven hub.

**Table 3: Summary of Correlations**

| | GDP spent on R&D & Nr. of enterprises | GDP spent on R&D & Global Innovation index | GDP spent on R&D & European Innovation Scoreboard |
|---|---|---|---|
| Estonia | 0,54 | 0,76 | 0,51 |
| Lithuania | 0,58 | 0,72 | 0,47 |
| Latvia | 0,59 | 0,63 | 0,05 |
| Hungary | -0,94 | 0,83 | -0,61 |
| Romania | 0,00 | -0,23 | 0,13 |
| Poland | -0,44 | 0,96 | -0,71 |

*Source: Own calculations*

## 5 Conclusions

The present researched was aimed at finding out the relation between the evolution of Estonian entrepreneurial competitiveness and its effects on country's innovation performance which assured the state impressive economic success. Firstly, the present Estonian economic prosperity is based on market oriented governmental regulation which was implemented in the 90s. Due to the reforms implemented, Estonia was able in a relatively short period of time to completely overpass the transition period, join the European Union and enter in the prestigious club of wealthy countries- OECD. It were identified the key directions which the socio-economic reforms followed, the main lessons which Estonians do teach us regarding building a competitive economy and the economic results of fostering innovation in the country. Secondly, it has been selected several indicators to outline the Estonian entrepreneurial profile including the Economic freedom Index, Corruption Perception Index, Macroeconomic Environment, Market efficiency, Business sophistication Index and the Ease of Doing Business Index. It was concluded that Estonia is one of the leading European countries in terms of entrepreneurship, the fact proved by the relatively high scores and rankings. This is an important achievement for the former soviet space demonstrating that the economic success resides in pragmatic thinking and right approaches in meeting challenges. Thirdly, it was found out that the level of R&D spending is interdependent with the level of country's business activity, between them being a strong correlation coefficient of 0.54. In such a way, the government of Estonia by assuring a proper entrepreneurial environment, characterised by low implication of bureaucracy in the economy, stable budgeting, put the base for country's innovation progress. Consequently, it was calculated the interconnection between R&D spending and the evolution of state's indicators of innovation performance, Estonian Global Innovation Index & score according to European Innovation Scoreboard. It was established that the correlation between them is strong, 0.76 and respectively 0.51. On overall, this fact demonstrates that the Estonian business is in a large part responsible for the nation's innovation capacities being the primary driver of innovation. Therefore, the Estonian economic and innovation success is based on proper regulated entrepreneurship based on neo-liberalistic principles.

The economic model followed by Estonians starting with 90s allowed them to overpass in a relatively short period of time the transition and its consequences. The country succeeded in strengthening its competitive economic advantages making possible to compete with larger economies. This fact was demonstrated through analysing Estonia's business environment and innovation performance in comparison with several former socialist countries including Lithuania, Latvia, Romania, Poland and Hungary.

There have been identified several limitations of the research. Firstly, the open access data provided by the World Bank, and OECD are not always recent, for some indicators i.e. number of enterprises or R&D spending. Second limitation refers to the correlation as an instrument of analysis which does not always provide relevant results and interdependences, therefore proper datasets should be considered. Moreover, the correlation should be considered only to identify interconnections and less causality, for the scope of the last, correlation should be accompanied with other methods of analysis i.e. fundamental or empirical. Lastly, there has not been assessed the influence of FDI upon Estonian entrepreneurial and innovation performance. Therefore, further research is needed in order to identify the role of FDI in consolidating the business and innovation capacities of Estonia. It could be also performed an economic sectorial analysis of Estonian entrepreneurship and innovation to underline which industries or sectors are leading in this area and which are lagging behind. Moreover, it could be analysed the performance of Estonia in the regional context.

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