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Indexes as Business
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Abstract

Every year several world organizations evaluate countries according different criteria and determine their indexes, such as KOF Index of Globalization, Corruption Perception Index, Global Competitiveness Index, Global Innovation Index, and others. These indexes later are used for analysis of the aspects of entrepreneurship activities in specific countries. One particular application of indexes is related to analysis and evaluation of the business environment of the country. The entrepreneurship is affected by many factors; to research all of them is very time and effort consuming process. The proposed approach (i.e., use of indexes) is targeted and can yield results of the practical significance. The goal of the current paper is to compare indicators of the Baltic countries with average indicators of the European Union by using selected indexes that characterize business environment. To reach this goal we set the following tasks: (1) to characterize theoretical framework of indexes that pertain to the business environment; (2) to perform comparative analysis of selected indicators of business environment of the Baltic countries and the EU according to 4 indexes; (3) to make conclusions about business environment in the Baltic countries, especially in Latvia, on the basis of indexes. The current study employs the logical-constructive method – comparison of theoretical notions with empirical data. The factor analysis allows identifying and comparing factors within chosen indexes. The benchmarking is used to estimate indicators of the Baltic countries and compare them mutually and with the average indicators of the EU – it allows to identify the best examples and calculate the deviation. The graphic method allows depicting information visually and making subsequent analysis.

KEYWORDS: Indexes, Business Environment; KOF Index of Globalization; Corruption Perception Index; Global Competitiveness Index, Global Innovation Index.

Introduction



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In the contemporary conditions of market globalization for entrepreneurs, it is very important to find methods and instruments for business environment evaluation. One of the most operative approaches is to employ various country evaluation indexes that are available. Every year several world organizations evaluate countries according different criteria and determine their indexes, such as KOF Index of Globalization, Corruption Perception Index, Global Competitiveness Index, Global Innovation Index, and others. Indexes, on the global scale, serve as performance indicators (clear benchmarks), but at the same time, they are the basis for the asset relocation research. In other words, indexes in their various manifestations, serve as data for important business decisions. Steven Schoenfeld (2004) points out that, perhaps the most significantly, indexes

are often the basis for investment vehicles. Analyses of dynamics of global ratings compiled by international organizations over several years show which countries have been increasing their competitiveness and which have lost their position. Most of the countries involved perform assessment of their business environment based on indexes. These indexes can serve also as problem indicators in business environment. Based on comparative study of indexes the respective governments can work out problem solving strategies taking into account positive experience of other countries.

Recently there have been fair number of publications about countries' competitiveness, business environment based on the international rankings. Let us mention a few examples. Thus, S. Keišs and E. Čerkovskis (2016) in their article on the business environment in Latvia in the light of global ratings take into account such indexes as Global Competitiveness Index, Economic Freedom Index, Global Prosperity Index, and Business Environment Assessment Index. The most important among these, in authors' opinion is the latter one, since this survey make it possible to find out which administrative obstacles, bureaucratic and regulatory barriers cause issues for entrepreneurs. The survey comprises 10 aspects of business environment, such as starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts, and resolving insolvency. The authors conclude that Latvian business environment is sufficiently highly evaluated, that is, Latvia takes 22nd place among 189 countries' surveyed; still, in order to position the country as an attractive business and investment economy, it is necessary to make long-term decisions on economic development. (Ibid.) Likewise, the press release prepared by the Stockholm School of Economics (the strategical partner of WEF Global Competitiveness Report in Latvia) regarding Latvia's ranking in the Global Competitiveness Index states the main problematic factors in the order of priority: tax rates, ineffective governance and bureaucracy, access to financing, complexity of tax regulations, inadequately educated labor force, and instability of policy formation practices. (Stockholm School of Economics, 2015) Depiction of the similar analysis can be found in the article "Assessing the Level of Competitiveness of the Republic of Kazakhstan on the Basis of World Ranking Analysis" (Aimagambetov, Stefanov & Kuttybaeva, 2016) where the authors conclude that most advantageous factors for the country development are the following: the favorable location, the existence of vast reserves of mineral resources and political and macroeconomic stability. Whereas the disadvantageous are the lack of diversification of industry, technological backwardness, as well as insufficient level of governance and management. The results of the current analysis show specific directions for future development, i.e., the realms that are to be improved. Yet another researches to be mentioned here are "Reviews of the competitiveness of European countries" (Ciocanel, 2015), "Comparing the innovation performance of EU candidate countries: an entropy-based TOPSIS approach" (Kaynak, Altuntas & Dereli, 2017), and "Landmarks on the evolution of global competitiveness. Analysis on the example of the European Union member states" (Tudose & Rusu, 2015). The first investigation analyzes the results of the application of some widely recognized models, used in evaluating the competitiveness performances between different countries (altogether 29 European states) and the causal relationship between WEF global competitiveness index and IMD competitiveness scoreboard. The second research is aimed at analysis of innovation performance of four European Union countries (Macedonia, Iceland, Serbia and Turkey) using entropy-based TOPSIS (Technique for Order Preference by Similarity to an Ideal Solution) method. Whereas the third scholarly article mentioned above is based on data obtained from the reports of the World Economic Forum, it aims at the identification of the specifics of the member states of the EU, the authors conclude that. These examples demonstrated the

importance of using different international ratings in assessment of the current status of affairs, the positive and negative trends of business development, the business climate (favorable or unfavorable for foreign investments), the level of corruption, etc. In other words, this is a process of benchmarking; it allows redefine qualitative and quantitative coordinates of improvement through competitiveness and sustainable performance.

The proposed approach (i.e., use of indexes) is targeted and can yield results of the practical significance. The goal of the current paper is to compare indicators of the Baltic countries with average indicators of the European Union by using selected indexes that characterize business environment. To reach this goal we set the following tasks: (1) to characterize theoretical framework of indexes that pertain to the business environment; (2) to perform comparative analysis of selected indicators of business environment of the Baltic countries and the EU according to 4 indexes; (3) to make conclusions about business environment in the Baltic countries, especially in Latvia, on the basis of indexes. The research questions of the present study are:

- _ Which global indexes can be used for characterization and analysis of business environment in the particular country?
- _ What is the situation of the Baltic contrives in comparison with the average EU indicators?
- _ Do indexes make it possible evaluation prospective export markets?

The current study employs the logical-constructive method – comparison of theoretical notions with empirical data. The factor analysis allows identifying and comparing factors within chosen indexes. The benchmarking is used to estimate indicators of the Baltic countries and compare them mutually and with the average indicators of the EU – it allows to identify the best examples and calculate the deviation. The graphic method allows depicting information visually and making subsequent analysis. The theoretical background of the current research consists of publications that disclose information regarding indexes and their application (Ahmad, 2001; Berger, 2008; Dreher, 2008; and others).

The research limitation: only those indexes were chosen that concern economical categories used for business environment assessment; the indexes were compared without identifying ground factors used in index calculation. The research data period: years of 2015 and 2016.

This article includes analysis of four different types of indexes related to business environment – the KOF Index of Globalization, the Corruption Perception Index, The Global Competitiveness Index, and the Global Innovation Index.

Globalization Indexes, KOF Index of Globalization

Globalization as enhanced trade and financial integration poses both opportunities and challenges to national economies. As opportunities there can be mentioned such factors as division of labour and specialization according to comparative advantage; in turn, negative factors include inability to erect and maintain regulatory and redistributive institutions, lack of financing for social needs, increase in evasion of international/global financial regulatory institutions into national regulations, problems in macroeconomic management, etc. (Rodik, 2007) In the theoretical literature these challenges are being described as so-called “open economy trilemma”. Namely, if government imposes fixed exchange rates and capital mobility, it has to give up monetary autonomy. If it wants monetary autonomy and capital mobility, it has to go with floating exchange rates. If it wants to combine fixed exchange rates with monetary autonomy (at least in the short run), it has to restrict capital mobility. (Ibid.) M. Caselli in his book “Trying to Measure Globalization. Experiences, Critical Issues and Perspectives” (2012) concentrates upon methodologies

of measuring globalization and differences between indexes, taking into account their characteristics, i.e. one-dimensionality or multi-dimensionality. Although multidimensionality is one of the most distinctive features of globalization, there are instruments that measure the phenomenon by considering only one of its dimensions—usually the economic one. The fact that some measurement instruments focus exclusively on this dimension is not surprising, given that, as pointed out in the first chapter, globalization is widely regarded as a phenomenon which is primarily if not exclusively economic in nature. At the same time, D. Rodrik poses some criticism of the globalization indices. Firstly, he admits that the principal defect of all indices is the use of an excessively large number of variables and indicators that can lead to decrease of countries that can supply necessary data. Secondly, the massive amount of indicators can decrease reliability of data. Thirdly, variety of sources can hamper the timeliness of information. Fourthly, there can be misbalanced representation of data (some aspects get more attention than others do). (Ibid.) Still, despite these shortcomings different globalization indices serve as instrument to measure position of the country in the global market.

Among numerous indexes that are employed for assessment of a country performance within international/global milieu we can mention the Bertelsman Stiftung's Transformation Index (BTI), the Maastricht Globalization Index, the New Globalization Index (NGI), and, the most important in our opinion, - the KOF Index of Globalization. Let us shortly dwell on the first three indices before turning to the KOF Index.

The Bertelsmann Stiftung's Transformation Index (BTI) analyses and evaluates the quality of democracy, a market economy and political management in 129 developing and transition countries. It measures successes and setbacks on the path toward a democracy based on the rule of law and a socially responsible market economy. The BTI is the first cross-national comparative index that uses self-collected data (according to 17 criteria) to comprehensively measure the quality of governance during processes of transition. The BTI aggregates the study into two indices: the Status Index and the Management Index. The Status Index is formed by calculating the total of average scores for the political and economic transformation whereas the Management Index is formed by calculating the scores for management criteria (acumen with which decision-makers steer political processes). (Transformation Index BTI) Every year the foundation publishes the Globalization report composed according to the criteria mentioned above. Thus, for example, the Globalization Report 2016 states that between 1995 and 2014, a group of emerging countries grew massively in importance relative to the group of developed countries, as well as that the raise of emerging countries is primarily due to their improved competitiveness relative to competitiveness of all economies. (Bohmer et. al., 2016)

The Maastricht Globalisation Index is calculated by aggregating eleven indicators referring to five dimensions of globalization: political, economic, sociocultural, technological, and ecological. In particular, the most distinctive features of this instrument are its consideration of globalization's ecological dimension and its inclusion of an indicator relative to the arms trade in the political dimension. (Caselli, 2012) More specifically, the political domain comprises such indicators as in-country embassies, membership in international organizations, and military-industrial complex; the economic domain includes such indicators as trade and share of GDP – transactions between domestic and foreign affiliates, as well as private capital flows; the social and cultural domain – cross border migration, tourism, awareness of global issues (climate change, human rights, etc.); the technical domain comprises such indicators as communication technologies, use of internet, social media platforms, etc.; the environmental domain – bio capacity as measure of land productivity, ecological deficit of traded goods and services, etc. (Figge & Martins, 2014)

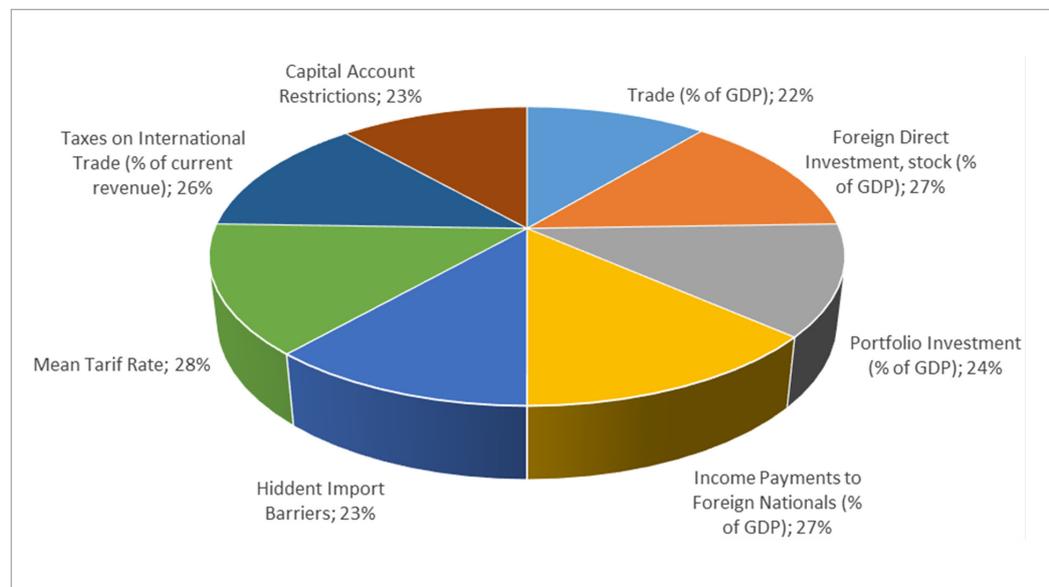
The New Globalization Index (NGI) is a composite index constructed to measure the relative globalization level of a group of countries according to 21 variable. This index differs from other indices because it takes into account, in addition to economic aspects, international student mobility and environmental issues; besides that, the NGI forms a weighted sum of bilateral trade flows using the geographical distances between trading partners as weights. In sum, the index comprises three dimensions - finance, trade and politics, and social globalization. (Vujakovic, 2010)

Market globalization more and more influences business organizations; it compels them to look for solutions to ensure their competitiveness. In order to comprehend globalization on the European level the authors of the current paper propose to compare ratings of all three Baltic countries (Latvia, Lithuania and Estonia) and the average European level according to all eight factors of the KOF Index of Globalization. In our opinion, this index offers the best methodology to assess the level of globalization in each particular country set against the background of the average level.

The KOF Index of Globalization was introduced in 2002. The Index covers three main divisions – economic globalization that includes long distance flows of goods, capital, services and information; political globalization characterized as diffusion of government policies; and social globalization – the spread of ideas, information, images and people. (Dreher, et.al, 2008) Since our interest lies in the realm of economy, let us briefly dwell on its eight sub dimensions: (1) *trade* – the sum of exports and imports of goods and services measured as share of GDP; (2) *foreign direct investment, stocks* – the sum of inward and outward FDI stock; (3) *portfolio investment* – the sum of portfolio investment assets stocks and portfolio investment liabilities stocks; (4) *income payments to foreign nationals* – employee compensations paid to non-resident workers and investment income; (5) *hidden import barriers* – the answer to the question if tariff and non-tariff barriers significantly reduce the ability of imported goods to compete in the domestic markets; (6) *mean tariff trade*; (7) *taxes on international trade* – import duties, export duties, profits of export or import monopolies, exchange profits, and exchange taxes; (8) *capital account restrictions* – foreign ownership of companies and types of capital controls. (Caselli, 2012) The weights of these indices and variables are depicted in the figure 1.

Figure 1

Indices and Variables of Economic Globalization in KOF Index (KOF Index of Globalization. Indices and Variables, 2015)



In order to analyse the business environment the authors of the current research compare the index of economic globalization of three Baltic countries with the average European Union index (see figure 2).

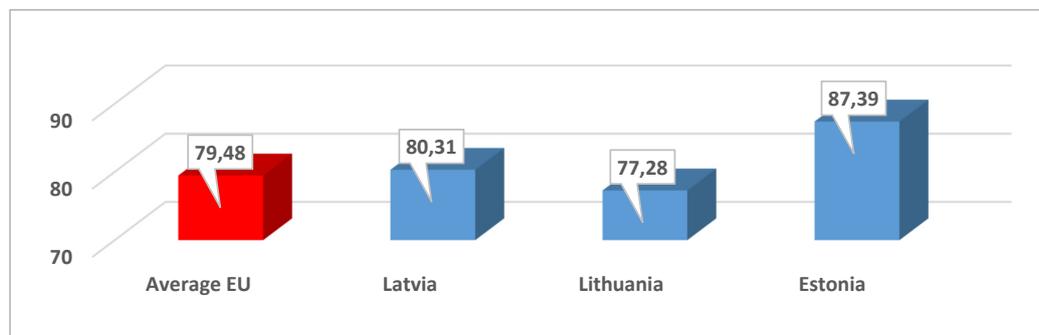


Figure 2

Economic Globalization in KOF Index 2015 (KOF Index of Globalization. Rankings, 2015)

The average index of the EU is 7948. All three Baltic countries are quite close to this average level – Estonia (87,39) and Latvia (803) are above the average index, while Lithuania (77,28) is slightly below it. The comparative analysis of economic globalization indexes demonstrates that economies of all three Baltic states are competitive on the European scale and ready to participate in market globalization processes as strong players.

The second index to be analysed in the current research is the Corruption Perception Index (CPI). The level of corruption in any given country shows the limitation of business environment and obstacles to business development. Corruption is a complex social, political and economic phenomenon that is prevalent in all countries in varying degrees. According F. Galtung (2006), J. G. Lambsdorff (2007), Ahmad (2001) and other researchers, corruption, in general, takes four main forms: bribery, embezzlement, fraud and extortion. The real level of corruption is difficult to determine technically, therefore, the Transparency International focuses upon perception of corruption. The Transparency International's Corruption Perceptions Index (since 1996) ranks countries in terms of the degree to which corruption is perceived to exist among public officials and politicians. It is a composite index, drawing on corruption-related data from expert and business surveys carried out by a variety of independent and reputable institutions. (Rohver, 2009) The CPI currently ranks 168 countries "on a scale from 100 (very clean) to 0 (highly corrupt). The lower-ranked countries exhibit untrustworthy and badly functioning public institutions; even though there exist anti-corruption laws, they are often ignored. People frequently face situations of bribery and extortion, misappropriation of public funds and official indifference when seeking justice. Higher-ranked countries tend to have higher degrees of press freedom, access to information about public expenditure, stronger standards of integrity for public officials, and independent judicial system. The higher score, the lower corruption level. (Corruption Perception Index. Topline Report, 2015)

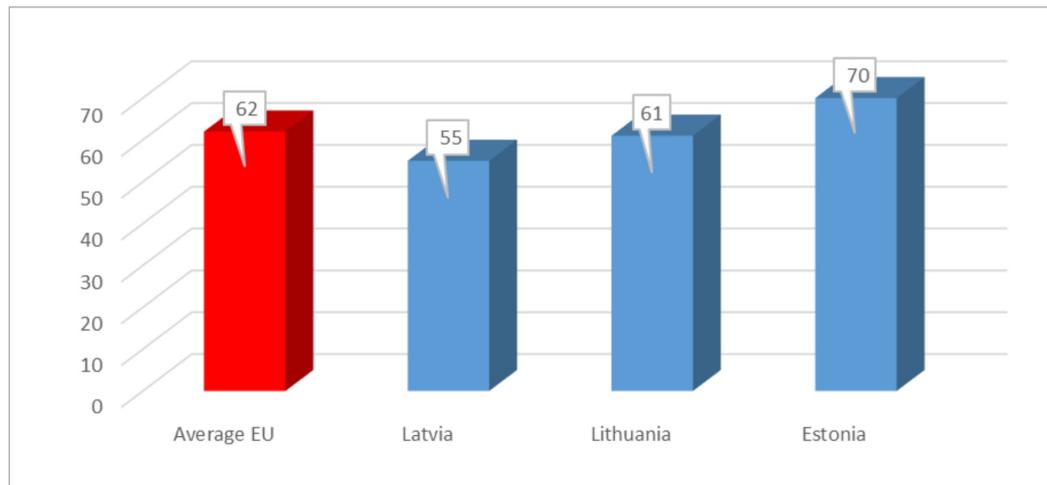
Analysing situation of the Baltic countries against the background of the average European level (figure 3) we can see that Estonia (70 pts.) scores much higher than the European average (62 pts.), Lithuania (61 pts.) closely follows, but Latvia (55) lags far behind.

Since corruption places constraints upon free and earnest competition and hinders development of entrepreneurship, Latvia has to pay serious attention to raise awareness of critical issues related to functioning of public institutions, anti-corruption legislation, misuse of public funds, etc.

Corruption Perception Index

Figure 3

Corruption Perception Index 2015 (points)
(Corruption Perception Index. Topline Report, 2015)



Global Competitiveness Index

The third index to be analysed in the current article is the Global Competitiveness Index (GCI), compiled by the World Economic Forum. Thus, the index of the years 2015-2016 comprises 140 countries. (The Global Competitiveness Report 2015-2016, 2016) For over 35 years, the Global Competitiveness Report series has shed light on the key factors and their interrelations that determine economic growth and a country's level of present and future prosperity. By doing so, it aims to build a common understanding of the main strengths and weaknesses of an economy so stakeholders can work together to shape economic agendas that address challenges and enhance opportunities. The report describes competitiveness as the set of institutions, policies, and factors that determine the level of productivity of an economy, which in turn sets the level of prosperity that the country can earn. (Ibid.) There is vast amount of literature regarding national competitiveness starting from the classical definition and scheme proposed by M. Porter. (Porter, 1990) Porter's "diamond" includes such aspects as firm strategy, structure and rivalry; demand conditions; related and supporting industries; factor conditions. Here we can mention also T. Berger's reflections upon the status of research. He concludes that the nation's competitiveness is determined by four main factors, that is, the ability to sell, the ability to earn, the ability to adjust, and the ability to attract. (Berger, 2008) A great deal of attention is paid to also to the concepts of competitiveness environment (country's openness to the world economy; world economy's openness to the region); political stability; country's geographical position; living conditions, cultural environment; climate and natural resources, demographic situation), economic policy (attitude towards foreign investments and market economy; level of government bureaucracy; low inflation policy; taxes and credit aid; pricing and its regulation; corporate governance, trade policy; exchange rate policy), and competitiveness of business infrastructure factors (level of wages; quality of labor; ecological environment; stability of supplies and raw materials; existence of land suitable for business activities; transport and communication; research and technology infrastructure). (Reiljan et.al, 2000). The specific approach to measure nation's competitiveness on the global scale is worked out by E. Meiliene, S. Neverauskaite and R. Aidis (2015) The authors propose to measure the country's competitiveness through the aspect of Technology-Intensive Innovative Enterprises Index, that includes 57 indicators (7 indicators determine human capital factors; 8 – networking; 14- efficiency of policies; 17 – innovative capacity of a country; 12 – innovative level of a country). L. Wenzel and others (2013) propose a method of measuring competitiveness applying Canonical Correlation Analysis (CCA). Among others, we would like to mention three research papers. The first of them is entitled "A new perspective on the competitiveness of nations." (Onsel et al., 2008)

The article addresses two major methodological issues: (1) the choice of weights to use to aggregate the underlying primary data concerning micro and macroeconomic factors; (2) the specification of the stages of countries and understanding criteria that have the greatest impact on the specification of relative position of the countries in the terms of competition. The second research utilized a structural model that decomposes competitiveness into its quantitative micro-level and qualitative macro-level. (Ezeala-Harrison, 2014) Whereas the third research by S. Perez-Moreno and others (2016) proposes to implement a multi-criteria approach with new alternative normalization and aggregation formulas for such pillars of competitiveness. The authors have worked out three alternative global competitiveness indices (weak, strong and mixed) with different degrees of substitutability, as well as the mixed index without normalizing. At the same time, we would like to admit, that there is certain criticism of using the Global Competitiveness Report to assess country's macro-economic competitiveness (Djogo & Stanisic, 2016), namely, the World Economic Forum's definition of macroeconomic competitiveness and the following methods of measurement are not the best solution for measuring the current macroeconomic competitiveness, as there exists a gap between a change in the level of productivity of the country and macroeconomic performance of the country in short time period.

The Global Competitiveness Index analyses the most problematic factors of doing business that can be the ground for assessment of business environment in the country. By analysing these factors, it is possible to determine the obstacles for country development and work out the strategic plan. The factors analysed in the this article demonstrates that there exist significant differences among all three Baltic countries and the average level of the European Union (Figure 4). It has to be noted that higher score indicates more problematic level.

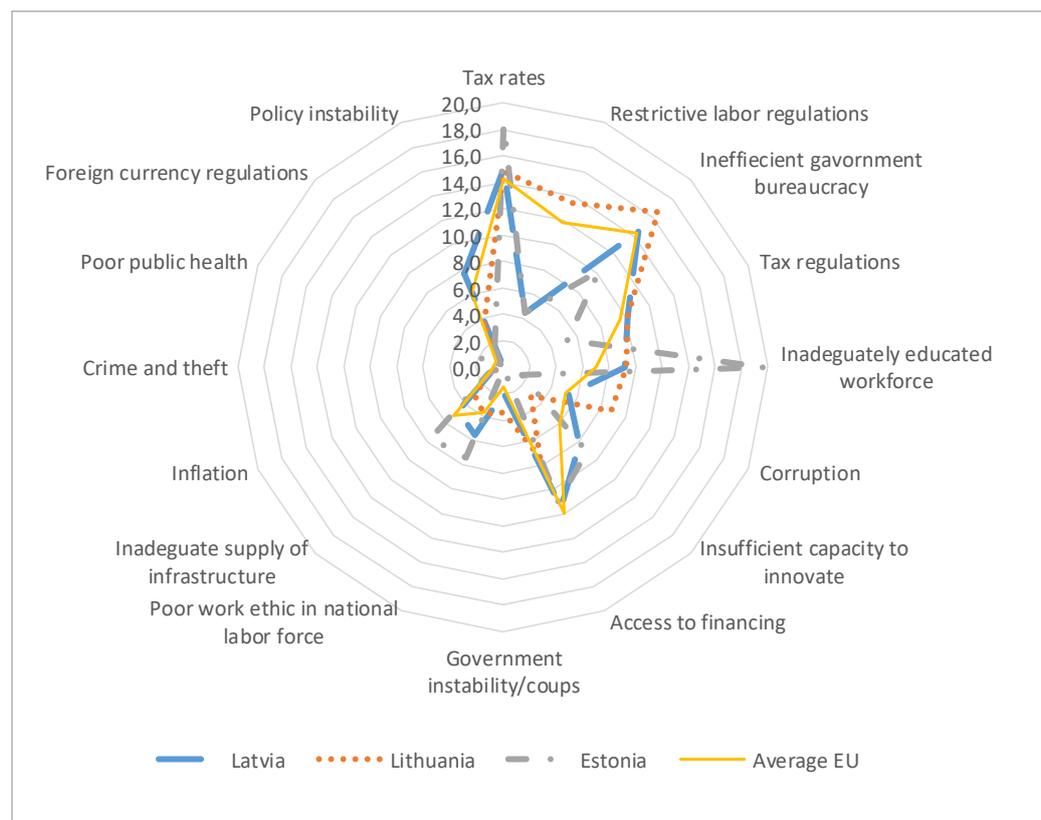


Figure 4
Most problematic factors for doing business, 2015-2016 (Authors')

As we can see Latvia, among other Baltic countries, ranks the highest (in the negative way) in such areas as tax rate (alongside with Lithuania), crime and theft, policy instability, inefficient governance, insufficient innovation level, although according to most indices, Latvia comes close to the average EU level. Thus, it is possible to see which spheres are in need of improvement. Table 1 shows the comparison of the average result of three Baltic countries and the EU according to all 12 pillars of competitiveness (institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labour market efficiency, financial market development, technological readiness, market size, business sophistication, innovation).

Table 1
Global
Competitiveness
Index, 2015 – 2016

Global Competitiveness Index	Latvian	Lithuania	Estonia	Average EU
Institutions	4.0	4.2	5.1	4.5
Infrastructure	4.4	4.7	5.0	5.1
Macroeconomic environment	5.6	5.4	6.1	5
Health and primary education	6.2	6.3	6.5	6.3
Higher education and training	5.0	5.3	5.5	5.2
Goods market efficiency	4.5	4.6	5.1	4.7
Labor market efficiency	4.6	4.4	5.0	4.4
Financial market development	4.2	4.1	4.8	4.2
Technological readiness	5.2	5.6	5.4	5.4
Market size	3.2	3.5	3.0	4.3
Business sophistication	4.1	4.3	4.3	4.6
Innovation	3.4	3.7	4.1	4.2

Source: Authors'

According to this comparison, it is possible to see that Estonia is above the average level of the EU in 7 parameters, but Latvia and Lithuania are in most cases close or below the average EU scores. Only according to three pillars Market size, Business sophistication and Innovation the average scores of the EU are higher than the according ones of the Baltic countries.

Global Innovation Index

One of the most important indexes to used for business environment evaluation is the Global Innovation Index (GII). The GIi aims to capture the multi-dimensional aspects of innovation and provide tools for developing long-term strategies. The innovation is measured by a composite index, the so-called Summary Innovation Index (SII). It sums up the results of several different partial indices in three areas (the driving force of innovation, the activities of enterprises and the results of innovative activities). Individual areas (components) are ascribed certain categories of indices in 8 dimensions of innovation, which in total led to the creation of a set of 25 indices, describing in detail the innovativeness of each state. (Lacka, 2015) The GIi helps to create an environment in which innovation factors are continually evaluated. In 2015 this 141 world countries were included the GIi ranking. The GIi adopts a broad notion of innovation. It is formulated like this: An innovation is the implementation of a new or significantly improved product (good or service), a new process, a new marketing method, or a new organizational method in business practices,

workplace organization, or external relations. (Global Innovation Index 2015) Today, innovation capability is seen more as the ability to exploit new technological combinations; it embraces the notion of incremental innovation and 'innovation without research'. The index includes such sub-categories as institutions, human capital and research, infrastructure, market sophistication, business sophistication, knowledge and technology outputs, creative outputs. These factors are divided into two categories – input sub-indices that characterize country's ability to create innovative environment and output sub-indices – results of innovative activities. Figure 5 shows scores of the Baltic counties set against the background of the average EU values.

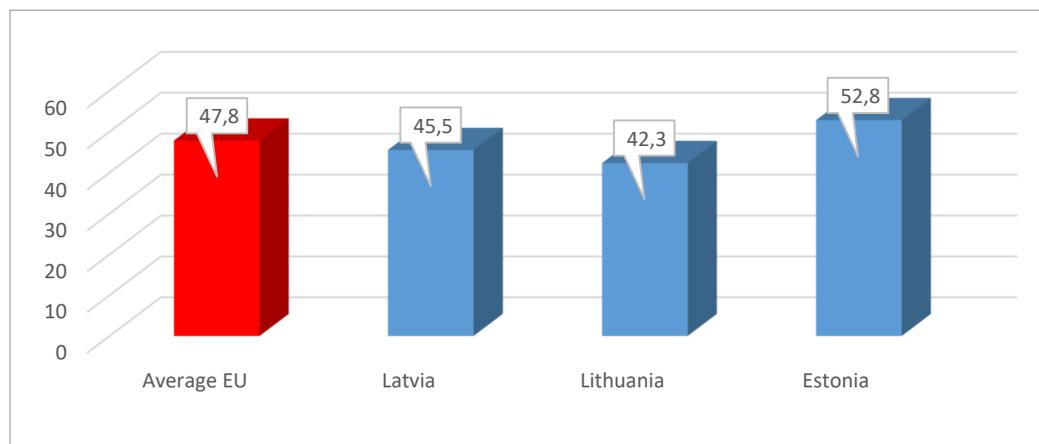


Figure 5

The Global Innovation Index 2015 (The Global Innovation Index, 2015)

The higher score demonstrates country's accomplishments in the realm of innovations. In the European Union the average ratio is 47,8. Estonia's rate is 52,8, that is above the European level, whereas Latvia is ranked quite close to the European mean data with the score 45,5, but Lithuania exhibits the ratio of 42,3.

1 The indexes allow estimating operatively the business environment from different perspectives (corruption, globalization, etc.), they can be instruments for evaluation as well as indicators of the primary factors of investment and export.

2 According to our research, the indexes that can be used for assessing business environment are the KOF Index of Globalization, the Corruption Perception Index, The Global Competitiveness Index, and the Global Innovation Index.

3 The KOF Index of Globalization is developed by the Swiss Federal Institute of Technology, Zurich; it is being published since 1002. In 2015 the Index included 207 countries. The Index is assessment of Economic globalization (36%), Social globalization (37%) and Political globalization (27%). The ratio of the Baltic countries is the following: Estonia – 87,39, Latvia – 80,31 and Lithuania – 77,28; that is very close or above the average European Union ration. This indicates that economy of these countries is able to participate in market globalization processes as equal players.

4 The Corruption Perception Index (CPI) is worked out by the Transparency International «One global movement sharing one vision: a world in which government, business, civil society and the daily lives of people are free of corruption», founded in 1993. In 2015, the Index included 175 countries. Estonia (70) exhibits results that are much higher than the average EU results, whereas Lithuania (61) is close to the average ratio, but Latvia's result (55) shows that the country that there are serious problems that should be solved.

Conclusions

- 5 The Global Competitiveness Index (GCI) is compiled by the World Economic Forum, in 2015-2016 the Index included data about 140 countries. The Global Competitiveness Index identifies and evaluates the most problematic factors for doing business, thus it can be the framework for business environment evaluation in each particular country. The current research shows that there are difference among the Baltic countries; the further analysis of these differences makes it possible to identify factors that hinder development and work out the strategy to solve problems.
- 6 The Global Competitiveness Index consists of 12 pillars. The index shows that Estonia's indicators in 7 positions is ranked above that the average indicators of the EU, but Latvia and Lithuania by the most part is close to the average ratio of the EU. Only in 3 positions - Market size, Business sophistication and Innovation – The average EU indices are higher than in Estonia, Latvia and Lithuania.
- 7 The Global Innovation Index (GII) aims to capture the multi-dimensional facets of innovation and provide the tools that can assist in tailoring policies to promote long-term output growth, improved productivity, and job growth. The GII helps to create an environment in which innovation factors are continually evaluated. In 2015 the Index included 141 country. Within European Union the average ratio is 47,8. Estonia's ratio (52,8) is above the average, but Latvia's (45,5) and Lithuania's (42,3) ratios are slightly below the EU ratio.

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