Article

Assessment of Attractiveness of the Baltic States for Foreign Direct Investment: The TOPSIS Approach

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Abstract: Foreign investment is one of the driving forces of a country's economy. The global foreign direct investment (FDI) flows in 2020 amounted to USD 1 trillion, but FDI distribution varies from country to country. Here, the questions arise as to what determines the choice of foreign investors, what the countries can do/are doing to attract FDI, and which Baltic states are the most attractive for FDI. Based on the scientific literature analysis, the definitions of FDI and the attractiveness for FDI, as referred to in the empirical study, are reviewed; the factors affecting FDI are singled out, and the methods/models that are applicable for assessing FDI are investigated. The major purpose of the article is to assess the attractiveness of the Baltic states for foreign direct investment. Research methods: comparative analysis of the concepts and methods available in the scientific literature, secondary data analysis, statistical data processing, and multi-criteria evaluation methods. The results of the assessment of the attractiveness of the Baltic states for foreign direct investment that were determined by applying the TOPSIS multi-criteria evaluation method helped to determine a country's position in relation to its neighbors and revealed the criteria that weaken or strengthen this position. The results of the research can help the leaders of the states to select the relevant measures to improve their state's FDI attractiveness in relation to other states.

Keywords: foreign direct investment (FDI); FDI attractiveness

1. Introduction

Investment is an important indicator of a country's micro- and macro-economic development and the general economic well-being. The role of investment in economic growth is not limited to an increase in aggregate demand, but also includes a multiplier (investment multiplier) effect. Investment allows beneficiary companies to register higher sales and receive additional profits (Cicea and Marinescu 2020). Effective investment is expected to deliver a positive net present value (Oh and Kim 2018). Not all investment becomes effective in the short run; so, it is usually planned for the long run; the payback period is an important factor when making the final decision. Investment can significantly contribute to the creation of new jobs, the acquisition of new skills, the adoption of new technologies, and the development of scientific research (Sarkodie and Strezov 2019).

After analyzing the models proposed in the scientific literature for assessing a country's attractiveness for foreign direct investment, it can be stated that the methodological tools are not universal and should, therefore, be adjusted to assess the attractiveness of the EU member states for foreign direct investment, with a special attention paid to small countries. Each model has its advantages and limitations, but the general methodological aspects are common for all models, and the major factors can be considered when forming a new model for assessing a country's attractiveness for foreign direct investment.

2. The Concept of Foreign Direct Investment

The term "investment" is derived from the Latin word "investio", which means "to put in" (Valentinavičius 2012). In the scientific literature, investment is described as the

"investment of capital" and is aimed at obtaining a future profit (Antonello et al. 2018). In this case, profit is a compensation for not using capital at the present time and the risk that the investment may not pay off or even become unprofitable. Obtaining profit and investing capital are two separate processes that can take place in parallel or in different periods until the moment when the financial funds are compensated for.

Researchers examine different types of investment. For example, Jungmann and Loretz (2019) categorize investment as domestic and foreign by its territorial characteristics and as direct and indirect by the participation in the investment process; the authors pay more attention to foreign direct investment as an investment method. Černius (2011) classifies investment as capital and financial when an investment object is used and as primary investment, reinvestment, and disinvestment when money is used in the investment process. Wang et al. (2019) focuses on the economic benefits that can be obtained from investment and notes that the economic benefits can include cash flows or capital or can be mixed. Ortiz-de-Mandojana et al. (2019) divides investment by duration into long-term and short-term. The scientific literature analysis reveals that investment can be classified in different ways based on different criteria.

According to the European Commission, investment is an action aimed at expanding a business or getting closer to customers in other economically efficient areas. Investment, according to Shang et al. (2021), is a monetary decision or a tool intended to maximize profits and minimize losses, and it comprises a selected level of risk. Mirza and Stephens (2020) believe that investment is the transfer of capital made in the anticipation of more profitable business alternatives, while Grundy and Verwijmeren (2020) argue that investment is the allocation of funds to tangible assets that need to be monitored but should become profitable.

Generalizing the definitions of investment provided in the various scientific sources, it can be stated that investment is the allocation of monetary funds to material assets or to the provision of services in the hope that this decision will generate profit in the future. Investment can be classified with the consideration of a number of characteristics that are important to an investor and a recipient of the investment.

Investors assess an object's attractiveness for investment depending on the activity area, the capital they want to invest, and the goal they want to achieve by investing. Most of the time, investors look for a new investment object because they expect to obtain higher profits or bear lower costs, but they can also select from several or more objects that are worth investing in.

According to Bayar et al. (2020), foreign direct investment (FDI) is a tool for countries to raise their competitiveness and promote economic growth through the acquisition of new skills. The European Commission (Baiashvili and Gattini 2020) states that FDI refers to the establishment or acquisition of a company in another country. Burns et al. (2017) sees FDI as an economic stimulus for low- and middle-income countries. Sadeghi et al. (2020) suggests that FDI is an element of globalization that allows investors to produce goods and provide services from anywhere in the world. Bojnec and Fertő (2018) propose that FDI is a process that allows the internationalization of the economy, while Alina (2018) indicates that FDI refers to a long-term economic relationship, when an investor from another country can have a significant impact on the entity in which the investment is made. Kearney (2021) notes that FDI is a type of investment that is based on long-term relationships and an investor's interest in another economy.

FDI is classified as horizontal and vertical. Horizontal investment is generally stimulated by the potential to exploit the (absolute) size of the target market and/or to reduce trading costs. Vertical investment is related to the different production capacities of specific companies and the differences in resources possessed by particular countries. Thus, the fragmentation of the production chain results from the exploitation of international factors and price differences (Jungmann and Loretz 2019).

In theory, capital should flow from advanced economies to developing economies, and this tendency should continue until the return on investment becomes equal. In

practice, most FDI is made in advanced economies, although the highest returns can be earned in developing ones (Ly et al. 2018). FDI inflows in developing economies promote innovation, contribute to the reduction in the unemployment rate, stimulate faster economic development, and accelerate the modernization of production technologies (Simelyte et al. 2017). These factors are undoubtedly associated with better exploitation of a host country's potential, but developing economies often face difficulties in attracting new investors.

The analysis of the FDI concepts (Table 1) proposes that FDI is interpreted as an economic instrument based on long-term economic relations or as a process where an investor can transfer the capital and the knowledge accumulated in various areas to a country receiving the investment (Kanapienytė and Činčikaitė 2022). Most often, the capital and the knowledge are transferred after establishing a branch or a subsidiary or after having acquired a company operating in another country.

Table 1. FDI concept explanation.

Author	Concept Explanation
(Bayar et al. 2020)	FDI is a means for countries to gain new experience and management skills and to adjust to new production methods and thus raise competitiveness and promote economic growth.
(European Commission 2010)	FDI refers to the establishment of an investor's company or the acquisition of a company (or a controlling stake in a company) in another country.
(Burns et al. 2017)	FDI is a widely recognized economic tool for promoting economic growth, higher wages, and generally better working conditions in low- and middle-income countries.
(Sadeghi et al. 2020)	FDI is a key element of globalization and the combination of capital, technology, management, and entrepreneurship that allows investors in a source country to produce goods and services elsewhere.
(Bojnec and Fertő 2018)	FDI is one of the processes through which the economy is internationalized.
(Alina 2018)	FDI is a long-term economic relationship related to an investor's long-term interests in an economic entity located in a country other than the investor's country.
(Kearney 2021)	FDI is a type of investment that involves a long-term relationship and represents the long-term interest and control of a resident in one economy over an enterprise (a FDI recipient, a subsidiary, or a foreign subsidiary) in another economy.
(Hlaváček and Bal-Domańska 2016)	FDI refers to investment where the largest part of the resources transferred is real capital, allowing an investing company to obtain full or partial control, respectively, as well as the right to participate in decision making when its share exceeds 10 percent of the total property.
(Lenaerts and Merlevede 2018)	FDI refers to investment providing long-term economic benefits, on the basis of which the relationships and interests between a direct investor and a direct investee are formed.

The Factors Affecting FDI

The most common investment attractiveness indices proposed by the scientific literature are as follows: the global foreign direct investment country attractiveness index

(GFICA), the foreign direct investment confidence index (FDICI), the venture capital and private equity country attractiveness index (VPCE), and the global attractiveness index (GAI).

Inward and outward FDI has an impact on domestic economic development and growth (Agnihotri 2019). Outward FDI affects domestic economies in terms of the effect of scale, competition, and knowledge. It helps companies in other countries expand their businesses by providing them with technological and trade benefits. Foreign direct investment helps companies improve efficiency and modernize their production processes.

In the context of the free market, the role of FDI in national economic development has been emphasized for a long time. FDI covers the organizing of new production and the acquisition of existing companies or factories, as well as the creation of joint ventures in a country other than the investor's country. FDI, acting as long-term investment, affects economic growth, which is understood as a long-term trend of increasing production and consumption in a country. Many researchers agree with the opinion that FDI promotes national economic growth both internally (through technology and management practices, greater investment resources available to industry, and the reorientation of the consumption of imported products to the consumption of goods produced by foreign capital companies) and externally (Hnatenko et al. 2020). At the same time, it is worth emphasizing that developed and developing countries have somewhat different factors affecting the attraction of FDI inflows. Most of the time, FDI inflows are affected by similar factors, but there are cases when a certain factor has no effect on a developing or a developed country.

When researching developing countries, quite a lot of attention is paid to the role of institutions in FDI inflows. In this context, FDI inflows are commonly analyzed from three perspectives: the aspect of specific institutions, the significance of institutional quality, and the composite institutional impact indicator (Kurul and Yalta 2017). The aspect of specific institutions is important because corruption has a negative impact on FDI location choices, especially with regard to multinational enterprises, because it raises business costs and perceptions of uncertainty (Milesi-Ferretti and Tille 2011). For this reason, democratic countries tend to attract more FDI than authoritarian ones. The significance of institutional quality indicates that low corruption and nationalization risks, as well as considerably smoother contract enforcement, stimulate FDI inflows, while ineffective institutions, a lack of legal services, and political instability deter FDI inflows (Okada 2013). The composite institutional impact indicator, which is constructed by combining different dimensions of institutional variables, such as bureaucracy, corruption, political instability, and the effectiveness of the legal system, indicates that certain combinations can have either a positive or a negative effect on FDI inflows (Buchanan et al. 2012).

Samborskyi (Samborskyi et al. 2020) perfectly classified the characteristics of a country receiving foreign direct investment. The author divided FDI determinants into four groups. Each group had between three and eight individual indicators that could positively or negatively affect FDI inflows; the author also presents the indicators that affect developing economies but have no impact on developed ones, and vice versa.

The table of the specific characteristics of a host country, compiled by Samborskyi, allows a comparison of the significance of a country's major features and indicators to investors. Some of the features are repeated in more than one category and may provide different results in a different category. An investor has to consider which category is more important. For instance, a country's market size always has a positive effect on FDI in developing economies and a positive or no effect in developed economies. The private sector share of GDP and the absolute wage rate have no significant effects. It can be stated that production factor prices have a negative impact on investors in both developed and developing economies. The effects of the comparative advantages are considered positive in both types of economies, except for the exchange rate, which can have a negative impact due to its instability. The indicators representing institutional characteristics can be either positive or negative. For instance, tax exemptions are viewed negatively in developing economies but have no effect in developed economies, while trade barriers are

viewed negatively in both types of economies. Economic openness is a positive feature of developing economies but is not significant in developed ones.

Before making an investment in a country, investors very carefully assess the potential threats and risks. They know what indicators need to be considered and what profits and growth can be expected in the future. The countries that expect to attract investment try to present the most favorable indicators and thereby interest potential investors. A lot of information and many indicators are now publicly available, making it easy for investors to compare economies and find the most attractive option (Lahrech et al. 2020). Sometimes an investment in a developing economy can seem riskier, especially if an investor is not convinced about the competences of the labor force or is a pioneer in a particular business area. Developing economies often seem more attractive because of lower costs, but other indicators, such as political instability or poor infrastructure, can be extremely unfavorable, and then an investor will select a developed economy as a safer and more stable option.

When assessing countries as a target for investment, the most common accounting methods are also considered. An investor finds it easier to compare several options if a standardized accounting system is used. Previous studies show that the international financial reporting standards adopted in target countries have a significant impact on the level of FDI inflows and returns, depending on the degree to which the international financial reporting standards are applied (Golubeva 2020).

Summarizing the propositions in the literature focused on the factors affecting FDI inflows (see Table 2); it can be stated that investors tend to look for large markets where production and labor are relatively cheap; investors are also interested in tax exemptions; they expect a target country to be politically stable, to have non-corrupt institutions, an open economy, a well-developed infrastructure, and to allocate funds for research and development. Despite all their expectations, investors tend to use various methods for assessing investment attractiveness and to prioritize economies before making the final investment decision.

Table 2. The factors affecting FDI.

Factors	Studies
Population	(Avetisyan 2020; Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Pantelidis and Nikolopoulos 2008; Younsi and Bechtini 2019)
Market size	(Pantelidis and Nikolopoulos 2008; Maza and Villaverde 2015; Avetisyan 2020)
GDP per capita	(Avetisyan 2020; Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Pantelidis and Nikolopoulos 2008; Younsi and Bechtini 2019)
Unemployment	(Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Paul et al. 2014; Younsi and Bechtini 2019)
Education	(Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Paul et al. 2014; Younsi and Bechtini 2019)
Energy consumption	(Pantelidis and Nikolopoulos 2008; Maza and Villaverde 2015; Avetisyan 2020)
Transport infrastructure	(Avetisyan 2020; Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Pantelidis and Nikolopoulos 2008; Younsi and Bechtini 2019)
Communication infrastructure	(Pantelidis and Nikolopoulos 2008; Maza and Villaverde 2015; Avetisyan 2020)
Ease of doing business	(Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Paul et al. 2014; Younsi and Bechtini 2019)

Table 2. *Cont.*

Factors	Studies
Trade openness	(Pantelidis and Nikolopoulos 2008; Maza and Villaverde 2015; Avetisyan 2020)
FDI inflows	(Avetisyan 2020; Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Pantelidis and Nikolopoulos 2008; Younsi and Bechtini 2019)
Inflation	(Pantelidis and Nikolopoulos 2008; Maza and Villaverde 2015; Avetisyan 2020)
Bribery and corruption	(Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Paul et al. 2014; Younsi and Bechtini 2019)
Political stability	(Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Paul et al. 2014; Younsi and Bechtini 2019)
Property rights	(Avetisyan 2020; Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Pantelidis and Nikolopoulos 2008; Younsi and Bechtini 2019)
Regulatory quality	(Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Paul et al. 2014; Younsi and Bechtini 2019)
Government efficiency	(Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Paul et al. 2014; Younsi and Bechtini 2019)
The rule of law	(Pantelidis and Nikolopoulos 2008; Maza and Villaverde 2015; Avetisyan 2020)
Income tax rates	(Avetisyan 2020; Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Pantelidis and Nikolopoulos 2008; Younsi and Bechtini 2019)
Research and development costs	(Pantelidis and Nikolopoulos 2008; Maza and Villaverde 2015; Avetisyan 2020)
Labor costs	(Bruneckienė 2010; Kersan-Skabic 2015; Kurul and Yalta 2017; Paul et al. 2014; Younsi and Bechtini 2019)

3. Methodology

The major purpose of the research is to assess the attractiveness of the Baltic states for foreign direct investment by applying the TOPSIS (the technique for order of preference by similarity to ideal solution) method; weight coefficients are assigned with consideration of the expert evaluation results obtained after applying the AHP method. Based on the scientific literature analysis, the major factors affecting FDI were identified, and the model was developed (R_{TUI}):

$$R_{TUI} = F(w_1, R_1, w_2, R_2, w_3, R_3, w_4, R_4, w_5, R_5, w_6, R_6, w_7, R_7, w_8, R_8, w_9, R_9, w_{10}, R_{10}, w_{11}, R_{11}, w_{12}, R_{12}, w_{13}, R_{13}, w_{14}, R_{14}, w_{15}, R_{15}, w_{16}, R_{16}, w_{17}, R_{17}, w_{18}, R_{18}, w_{19}, R_{19}, w_{20}, R_{20}, w_{21}, R_{21} \tag{1}$$

here:

$w_1 \ldots w_n$—weight coefficients;
R_1—factor of population;
R_2—factor of market size;
R_3—factor of GDP per capita;
R_4—factor of unemployment;
R_5—factor of education;
R_6—factor of energy consumption;
R_7—factor of transport infrastructure;
R_8—factor of communication infrastructure;
R_9—factor of ease of doing business;

R_{10}—factor of FDI inflows;
R_{11}—factor of trade openness;
R_{12}—factor of inflation;
R_{13}—factor of bribery and corruption;
R_{14}—factor of political stability;
R_{15}—factor of property rights;
R_{16}—factor of regulatory quality;
R_{17}—factor of government efficiency;
R_{18}—factor of the rule of law;
R_{19}—factor of income tax rates;
R_{20}—factor of research and development costs;
R_{21}—factor of labor costs.

The expert evaluation was conducted between 1 July and 31 July 2022. Seven persons representing government institutions and commercial banks participated in the expert evaluation. To process the data of the expert evaluation, the AHP method was applied to estimate the indicator weights, i.e., the significance. The AHP method was carried out in a few stages.

First, the column sum of the pairwise comparison matrix was calculated:

$$C_i = \sum_{i=1}^{m} c_{ij} \tag{2}$$

Second, the matrix of the paired scores was normalized:

$$x_{ij} = \frac{c_{ij}}{C_i} \tag{3}$$

Next, the criteria weight coefficients were estimated:

$$w_j = \frac{\sum_{j=1}^{n} x_{ij}}{n} \tag{4}$$

here:
$\sum_{j=1}^{n} x_{ij}$ —the row sum of the normalized matrix;
N—the number of criteria;
w_j—the weight of a single criterion.

Then, the significance of the AHP was verified:

$$C.R. = \frac{C.I.}{R.I.} \tag{5}$$

here:
n—the number of indicators;
$C.I.$—compatibility index;
$R.I.$—the value of T. Saaty's coefficients.

The TOPSIS is a simple multi-criteria decision-making method. Its idea, introduced by Yoon and Hwang in 1981, is that "the optimal alternative has the smallest distance from the ideal solution and the largest distance from the 'negatively ideal' solution". This method is widely used to complete decision making. This is because the method is simple, easy to understand, and computationally efficient and has the ability to measure the relative performance of alternative solutions (Rahim et al. 2018).

The calculation steps in the TOPSIS method are as follows (Łatuszyńska 2014).

First, a normalized decision matrix is developed (see Formula (6)).

$$r_{ij} = \frac{x_{ij}}{\sqrt{\sum_{i=1}^{m} x_{ij}^2}} \tag{6}$$

here:

r_{ij}—a standardized matrix with criteria weights $w_j = w_1, w_2, w_3, \dots, w_n$;
w_j—the criterion weight for all js and $\sum j = 1 \ w_j = 1$.

The ideal solution matrix, which considers the ideal positive (see Formula (7)) and the ideal negative (see Formula (8)) solutions, is developed by the following formula:

$$A^+ = \{v_1^+, \dots, v_n^+\} = \{(max_i v_{ij} | j \in I'), (min_i v_{ij} | j \in I'')\} \tag{7}$$

$$A^- = \{v_1^-, \dots, v_n^-\} = \{(max_i v_{ij} | j \in I'), (min_i v_{ij} | j \in I'')\} \tag{8}$$

here:

I' is related to the benefit criteria;
I'' is related to the cost criteria;
v—denotes normalization of the weight matrix, $v_{ij} = w_j * r_{ij}$;
A^+—a positive ideal solution matrix;
A^-—a negative ideal solution matrix.

Next, the distance from the positive ideal solution (see Formula (9)) and the negative ideal solution (see Formula (9)) is calculated:

$$s_i^+ = \sqrt{\sum_{j=1}^{n} \left(v_{ij} - v_j^+\right)^2} \tag{9}$$

here:

s_i^+—an alternative distance from the positive ideal solution, where $i = 1, 2, 3, \dots, m$;
v—normalization of the weight matrix.

$$s_i^- = \sqrt{\sum_{j=1}^{n} \left(v_{ij} - v_j^-\right)^2} \tag{10}$$

here:

s_i^-—an alternative distance from the negative ideal solution, where $i = 1, 2, 3, \dots, m$;
v—normalization of the weight matrix.

The positive ideal solution is estimated by the following function (see Formula (11)):

$$CC_i^+ = \frac{s_i^-}{s_i^* + s_i^-} \tag{11}$$

here:

CC_i^+—the positive ideal solution;
s_i^+—an alternative distance from the positive ideal solution;
s_i^-—an alternative distance from the negative ideal solution.

Thus, the rank of the alternatives is obtained. Alternative C^+ is ranked from its highest to its lowest value. The alternative with the highest value of C^+ is the best solution.

4. Research Results

After the expert survey, the compatibility of the opinions was evaluated by using the AHP method. The evaluation confirmed (CR = 0.03) that the results of the survey can be trusted and applied in the next steps of the investigation.

Based on the calculations performed, weight coefficients were assigned to each factor (see Table 3).

Table 3. Weight coefficients.

w1	w2	w3	w4	w5	w6	w7	w8	w9	w10	w11	w12	w13	w14	w15	w16	w17	w18	w19	w20	w21
0.08	0.08	0.08	0.04	0.04	0.04	0.04	0.08	0.025	0.025	0.025	0.025	0.03	0.03	0.03	0.03	0.03	0.03	0.08	0.08	0.08

To comprehensively assess the attractiveness of the Baltic states for FDI, the dynamics of the relevant indicators in three Baltic states during the period of 2010–2020 was analyzed.

Figure 1 indicates that the population in the Baltic states tended to decrease during the period under consideration. Only in Estonia are the changes in this indicator comparatively insignificant. The largest population decline is observed in Lithuania.
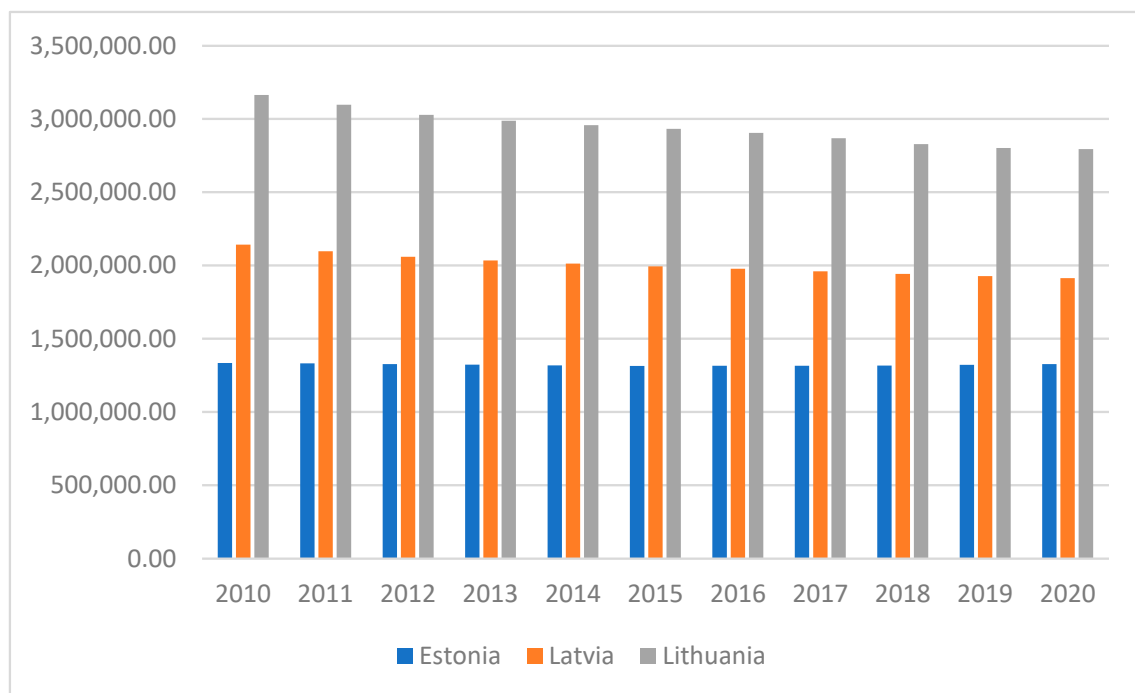

Figure 1. Population dynamics in the Baltic states over the period of 2010–2020.

The data in Figure 2 show that GDP per capita varied significantly in Estonia during the period considered. A very similar change can be observed in Lithuania and Latvia (from 2010 to 2011, the GDP per capita slightly decreased; from 2011 to 2015, it was constantly growing; in 2016, it slightly decreased and started growing again).

The data in Figure 3 indicate that foreign direct investment in the Baltic states fluctuated during the period under consideration and was negative in Lithuania and Latvia in 2010 and in Estonia—in 2016.
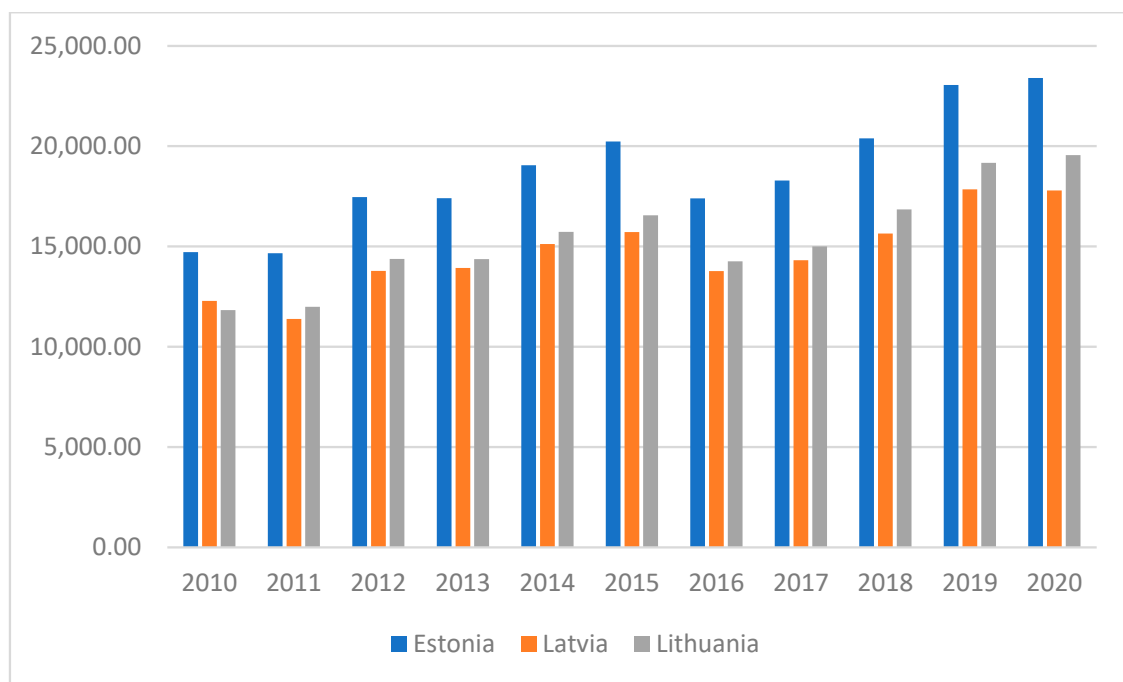
Figure 2. GDP per capita dynamics in the Baltic states over the period of 2010–2020.
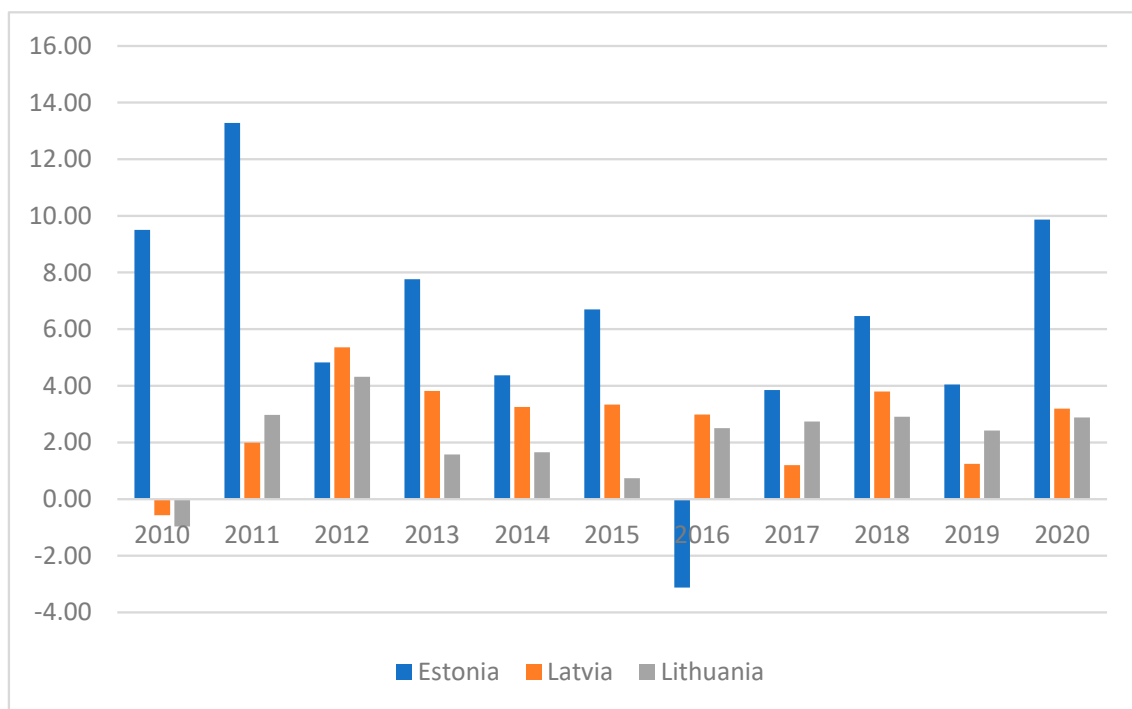

Figure 3. Foreign direct investment dynamics in the Baltic states over the period of 2010–2020.

The most significant changes in government effectiveness during the period under consideration can be observed in Latvia and Lithuania, which caught up with Estonia and even outperformed it in 2016 (Figure 4).
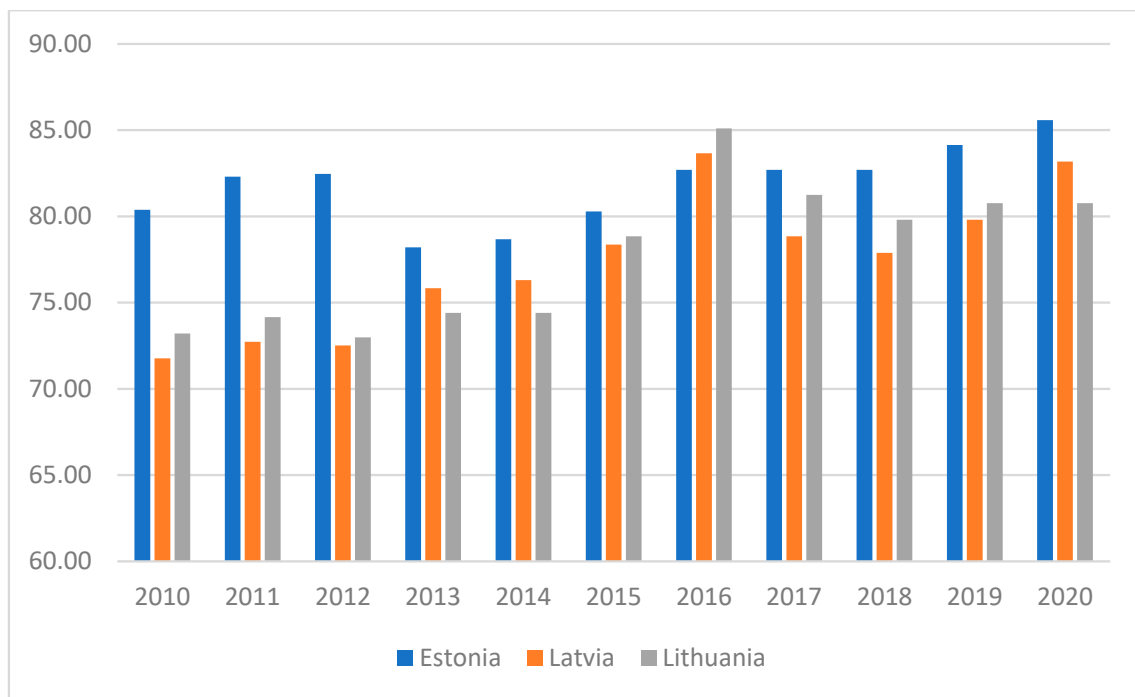
Figure 4. Government effectiveness dynamics in the Baltic states over the period 2010–2020.

The fluctuations in the research and development expenditure indicator were similar in all three Baltic states during the period under consideration. The highest rates were recorded in Estonia, while the lowest—in Latvia (Figure 5).
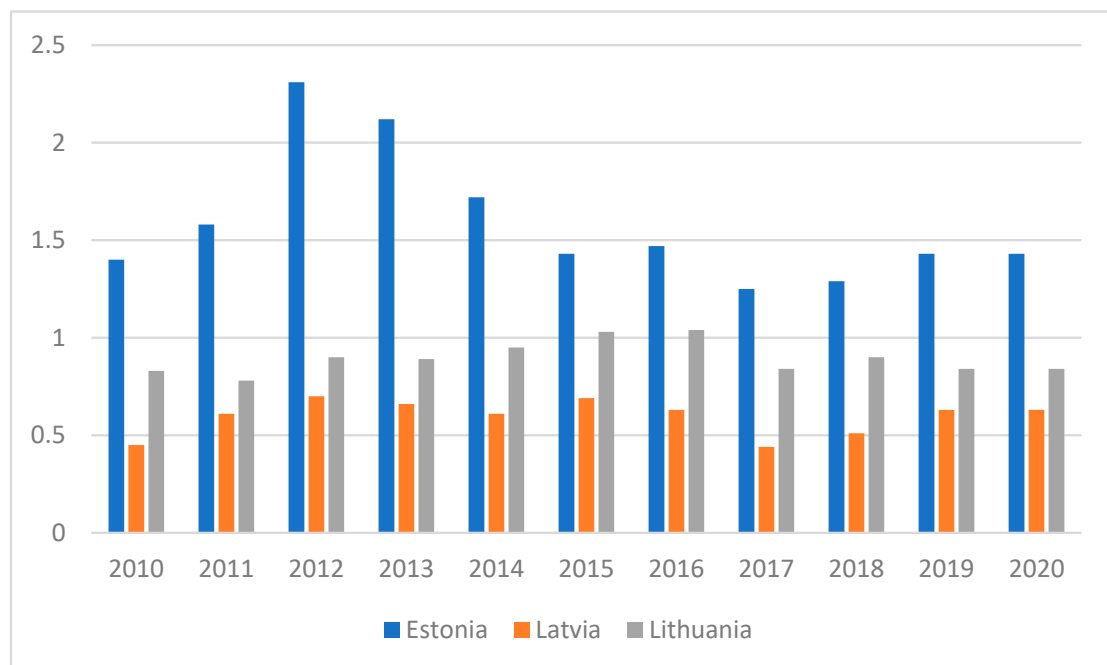

Figure 5. Research and development expenditure dynamics in the Baltic states over the period of 2010–2020.

After reviewing the dynamics of the relevant indicators and proceeding further into the research, we employed the TOPSIS method to assess the positions of the Baltic states in terms of their investment attractiveness (see Table 4).

Table 4. Assessment of investment attractiveness of the Baltic states based on the TOPSIS method (with different weight factors).

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estonia	1	1	1	1	1	1	1	1	1	1	1
Lithuania	2	3	2	2	2	2	2	2	2	2	2
Latvia	3	2	3	3	3	3	3	3	3	3	3

The results in Table 4 show that the Baltic states slightly changed their positions in terms of investment attractiveness during the period under consideration (2010–2020). During the entire period, Estonia remained the most attractive state for FDI, followed by Lithuania and Latvia. Only in 2011 was a noticeable change between the second and third positions observed. Thus, the results propose that the Baltic states remain relatively stable in terms of their attractiveness for FDI. One of the robustness checks of the multi-criteria methods is the sensitivity analysis with respect to weights. In this article, we chose to evaluate the reliability of the multi-criteria decision, taking into account the change in the weighting factor (Podvezko 2006). Expert evaluations are stochastic in nature: changing, for example, the composition of the expert group will change both the values of the indicator evaluations and the corresponding ranking table. Thus, in order to check whether the results obtained are sensitive to the change in the weighting factor, the assessment of the investment attractiveness of the Baltic states was repeated using the TOPSIS method (with the same weighting factors).

The opposite results were obtained when equal weight factors were used. The results in Table 5 indicate that the positions of the Baltic states in terms of their investment attractiveness were not as stable as in Table 4. The significant changes can be observed in every position, and the leading country dropped to the third position in 2015 and 2020.

Table 5. Assessment of the investment attractiveness of the Baltic states based on the TOPSIS method (with equal weight factors).

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Estonia	1	3	1	1	3	2	1	1	1	1	2
Lithuania	2	1	3	3	1	3	2	2	3	3	3
Latvia	3	2	2	2	2	1	3	3	2	2	1

5. Conclusions and Discussion of the Findings

1. Based on the results of the scientific research, the concept of investment is defined as the allocation of monetary funds for material assets or the provision of services, with the expectation that this decision will become profitable in the future.
2. Investment attractiveness is not a completely static concept. Most of the authors analyzed perceive investment attractiveness as an indicator that shows the accessibility of the region, the resources, and the infrastructure, the advantage over competitors, and the specific benefits related to the area.
3. There is no unified investment attractiveness instrument; considering that investment attractiveness is influenced by many different factors, the author of the article sought to comprehensively assess the investment attractiveness of the Baltic states by using multi-criteria methods, including the following factors: population, market size, GDP per capita, unemployment, education, energy consumption, transport infrastructure, communication infrastructure, ease of doing business, trade openness, FDI inflows, inflation, bribery and corruption, political stability, property rights, quality regulation, government efficiency, the rule of law, income tax rates, research and development costs, and labor costs.
4. After evaluating the attractiveness of the Baltic countries for FDI, Estonia can be said to remain the most attractive for FDI throughout the considered period (2010–2020).

The evaluated results for Latvia and Lithuania changed only in 2011, when Lithuania was in the third position and Latvia in the second position.

There is a lot of cross-sectional research on foreign direct investment: Impact of foreign direct investment on the country economy Assessment for competitiveness (Danilevičienė and Lukšytė 2017); Human Capital and FDI Inflow: An Assessment of the African Case (Cleeve et al. 2015); Aid, Infrastructure, and FDI: Assessing the Transmission Channel with a New Index of Infrastructure (Donaubauer et al. 2016); Connections between FDI, Corruption Index and Country Risk Assessments in Central and Eastern Europe (Iloie 2015); Foreign direct investment and regional economic development in Russia: an econometric assessment (Iwasaki and Suganuma 2015); and many more. The abundance of research shows the relevance and versatility of the chosen object. In continuing the research, it would be possible to assess the attractiveness of the investments of the regions and to observe the differences between them.

References

Agnihotri, Anurag. 2019. Study of Linkages between Outward Foreign Direct Investment (OFDI) and Domestic Economic Growth: An Indian Perspective. *Financial Markets, Institutions and Risks* 3: 43–49. Available online: http://armgpublishing.sumdu.edu.ua/journals/fmir/volume-3-issue-1/article-4/ (accessed on 20 April 2021). [CrossRef]

Alina, Nitescu. 2018. Aspects of Foreign Direct Investment in the Romanian Economy. *Annals-Economy Series, Constantin Brancusi University, Faculty of Economics* 0: 125–30.

Antonello, Michele, Luca Cipani, and Wolfgang J. Runggaldier. 2018. Minimizing Capital Injections by Investment and Reinsurance for a Piecewise Deterministic Reserve Process Model. *Scandinavian Actuarial Journal* 2018: 907–32. Available online: https://www.tandfonline.com/doi/full/10.1080/03461238.2018.1471001 (accessed on 20 April 2021). [CrossRef]

Avetisyan, Ani. 2020. Country Attractiveness: Analysis of the Main Factors. *Finance: Theory and Practice* 24: 58–74. Available online: https://financetp.fa.ru/jour/article/view/1043 (accessed on 15 May 2021). [CrossRef]

Baiashvili, Tamar, and Luca Gattini. 2020. Impact of FDI on Economic Growth: The Role of Country Income Levels and Institutional Strength. EIB Working Papers 2020/02, European Investment Bank (EIB). Available online: https://www.econstor.eu/bitstream/10419/214165/1/1690460822.pdf (accessed on 1 January 2020).

Bayar, Yilmaz, Rita Remeikiene, Armenia Androniceanu, Ligita Gaspareniene, and Ramunas Jucevicius. 2020. The Shadow Economy, Human Development and Foreign Direct Investment Inflows. *Journal of Competitiveness* 12: 5–21. Available online: https://www.cjournal.cz/index.php?hid=clanek&bid=archiv&cid=352&cp= (accessed on 17 May 2021). [CrossRef]

Bojnec, Štefan, and Imre Fertő. 2018. Globalization and Outward Foreign Direct Investment. *Emerging Markets Finance and Trade* 54: 88–99. Available online: https://www.tandfonline.com/doi/full/10.1080/1540496X.2016.1234372 (accessed on 5 January 2021). [CrossRef]

Bruneckienė, Jurgita. 2010. Šalies Regionų Konkurencingumo Vertinimas Įvairiais Metodais: Rezultatų Analizė Ir Vertinimas. *Economics & Management* 15: 25–31. Available online: http://web.b.ebscohost.com/ehost/detail/detail?vid=5&sid=46d29dc4-d367-454e-a17f-0384733d0561%40pdc-v-sessmgr06&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3D%3D#AN=53172840&db=bsu (accessed on 17 March 2020).

Buchanan, Bonnie G., Quan V. Le, and Meenakshi Rishi. 2012. Foreign Direct Investment and Institutional Quality: Some Empirical Evidence. *International Review of Financial Analysis* 21: 81–89. Available online: https://linkinghub.elsevier.com/retrieve/pii/S1057521911000871 (accessed on 17 March 2020). [CrossRef]

Burns, Darren K., Andrew P. Jones, Yevgeniy Goryakin, and Marc Suhrcke. 2017. Is Foreign Direct Investment Good for Health in Low and Middle Income Countries? An Instrumental Variable Approach. *Social Science & Medicine* 181: 74–82. Available online: https://linkinghub.elsevier.com/retrieve/pii/S0277953617302083 (accessed on 20 April 2021).

Černius, Gintaras. 2011. Namų Ūkio Finansų Valdymas. Available online: https://repository.mruni.eu/bitstream/handle/007/16837/9789955194057.pdf?sequence=1&isAllowed=y (accessed on 20 April 2021).

Cicea, Claudiu, and Corina Marinescu. 2020. Bibliometric analysis of foreign direct investment and economic growth relationship. A research agenda. *Journal of Business Economics and Management* 22: 445–66. Available online: https://journals.vilniustech.lt/index.php/JBEM/article/view/14018 (accessed on 17 May 2021). [CrossRef]

Cleeve, Emmanuel A., Yaw Debrah, and Zelealem Yiheyis. 2015. Human Capital and FDI Inflow: An Assessment of the African Case. *World Development* 74: 1–14. Available online: https://linkinghub.elsevier.com/retrieve/pii/S0305750X1500087X (accessed on 7 September 2021). [CrossRef]

Danilevičienė, Irena, and Vilma Lukšytė. 2017. The Assessment of Foreign Direct Investment Influence on The Country's Economic Competitiveness. *Mokslas-Lietuvos Ateitis* 9: 183–96. Available online: https://journals.vilniustech.lt/index.php/MLA/article/view/549 (accessed on 7 September 2021).

Donaubauer, Julian, Birgit Meyer, and Peter Nunnenkamp. 2016. Aid, Infrastructure, and FDI: Assessing the Transmission Channel with a New Index of Infrastructure. *World Development* 78: 230–45. Available online: https://linkinghub.elsevier.com/retrieve/pii/S0305750X15002375 (accessed on 23 November 2021). [CrossRef]

European Commission. 2010. *Towards a Comprehensive European International Investment Policy*. Brussels: European Commission, vol. 13, Available online: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0343:FIN:EN:PDF (accessed on 23 November 2021).

Golubeva, Olga. 2020. Maximising International Returns: Impact of IFRS on Foreign Direct Investments. *Journal of Contemporary Accounting & Economics* 16: 100200. Available online: https://linkinghub.elsevier.com/retrieve/pii/S1815566918301401 (accessed on 23 November 2021).

Grundy, Bruce D., and Patrick Verwijmeren. 2020. The External Financing of Investment. *Journal of Corporate Finance* 65: 101745. Available online: https://linkinghub.elsevier.com/retrieve/pii/S0929119920301899 (accessed on 7 October 2021). [CrossRef]

Hlaváček, Petr, and Beata Bal-Domańska. 2016. Impact of Foreign Direct Investment on Economic Growth in Central European Countries. *Engineering Economics* 27: 294–303. Available online: http://www.inzeko.ktu.lt/index.php/EE/article/view/3914 (accessed on 12 September 2021).

Hnatenko, Iryna, Ihor Kuksa, Iryna Shtuler, Olga Orlova-Kurilova, and Viktoriia Rubezhanska. 2020. Innovation cluster as a mechanism for ensuring the enterprises interaction in the innovation sphere. *Management Theory and Studies for Rural Business and Infrastructure Development* 41: 487–500. Available online: https://ejournals.vdu.lt/index.php/mtsrbid/article/view/418 (accessed on 7 October 2021). [CrossRef]

Iloie, Raluca Elena. 2015. Connections between FDI, Corruption Index and Country Risk Assessments in Central and Eastern Europe. *Procedia Economics and Finance* 32: 626–33. Available online: https://linkinghub.elsevier.com/retrieve/pii/S2212567115014422 (accessed on 11 May 2022). [CrossRef]

Iwasaki, Ichiro, and Keiko Suganuma. 2015. Foreign Direct Investment and Regional Economic Development in Russia: An Econometric Assessment. *Economic Change and Restructuring* 48: 209–55. Available online: http://link.springer.com/10.1007/s10644-015-9161-y (accessed on 3 July 2022). [CrossRef]

Jungmann, Hendrik, and Simon Loretz. 2019. On the Measurement of Investment Types: Heterogeneity in Corporate Tax Elasticities. *The World Economy* 42: 478–508. Available online: https://onlinelibrary.wiley.com/doi/10.1111/twec.12672 (accessed on 5 May 2022). [CrossRef]

Kanapienytė, Laura, and Renata Činčikaitė. 2022. Evaluation of attractiveness of the EU member states for foreign direct investment. *Business and Management* 12: 114–23.

Kearney, Andrew Thomas. 2021. On Shaky Ground. Available online: https://www.kearney.com/foreign-direct-investment-confidence-index (accessed on 20 July 2022).

Kersan-Skabic, Ines. 2015. The Importance of Corporate Taxation for FDI Attractiveness of Southeast European Countries. *Panoeconomicus* 62: 105–22. Available online: http://www.doiserbia.nb.rs/Article.aspx?ID=1452-595X1501105K (accessed on 24 March 2022). [CrossRef]

Kurul, Zühal, and A. Yasemin Yalta. 2017. Relationship between Institutional Factors and FDI Flows in Developing Countries: New Evidence from Dynamic Panel Estimation. *Economies* 5: 17. Available online: https://www.mdpi.com/2227-7099/5/2/17 (accessed on 27 March 2022). [CrossRef]

Lahrech, Abdelmounaim, Sami Zaki Alabdulwahab, and Safaâ Bouayach. 2020. Nation branding and how it is related to foreign direct investment inflows. *International Journal of Economics and Financial Issues* 10: 248–55. Available online: https://www.econjournals.com/index.php/ijefi/article/view/9345 (accessed on 3 July 2022). [CrossRef]

Łatuszyńska, Anna. 2014. Multiple-criteria decision analysis using Topsis method for interval data in research into the level of information society development. *Folia Oeconomica Stetinensia* 13: 63–76. [CrossRef]

Lenaerts, Karolien, and Bruno Merlevede. 2018. Indirect Productivity Effects from Foreign Direct Investment and Multinational Firm Heterogeneity. *Review of World Economics* 154: 377–400. Available online: http://link.springer.com/10.1007/s10290-017-0298-9 (accessed on 17 October 2021). [CrossRef]

Ly, Amadú, José Esperança, and Nebojsa S. Davcik. 2018. What Drives Foreign Direct Investment: The Role of Language, Geographical Distance, Information Flows and Technological Similarity. *Journal of Business Research* 88: 111–22. Available online: https://linkinghub.elsevier.com/retrieve/pii/S0148296318301334 (accessed on 17 October 2021). [CrossRef]

Maza, Adolfo, and José Villaverde. 2015. A New FDI Potential Index: Design and Application to the EU Regions. *European Planning Studies* 23: 2535–65. Available online: https://www.tandfonline.com/doi/full/10.1080/09654313.2015.1020771 (accessed on 5 May 2022). [CrossRef]

Milesi-Ferretti, Gian-Maria, and Cédric Tille. 2011. The Great Retrenchment: International Capital Flows during the Global Financial Crisis. *Economic Policy* 26: 289–346. Available online: https://academic.oup.com/economicpolicy/article-lookup/doi/10.1111/j.1468-0327.2011.00263.x (accessed on 23 January 2022). [CrossRef]

Mirza, Afrasiab, and Eric Stephens. 2020. Securitization and Aggregate Investment Efficiency. *Journal of Financial Intermediation* 52: 100894. Available online: https://linkinghub.elsevier.com/retrieve/pii/S1042957320300486 (accessed on 23 January 2022). [CrossRef]

Oh, Hyun, and Woo Kim. 2018. The Effect of Analyst Coverage on the Relationship between Seasoned Equity Offerings and Investment Efficiency From Korea. *Sustainability* 10: 2704. Available online: http://www.mdpi.com/2071-1050/10/8/2704 (accessed on 17 December 2021). [CrossRef]

Okada, Keisuke. 2013. The Interaction Effects of Financial Openness and Institutions on International Capital Flows. *Journal of Macroeconomics* 35: 131–43. Available online: https://linkinghub.elsevier.com/retrieve/pii/S0164070412001103 (accessed on 17 December 2021). [CrossRef]

Ortiz-de-Mandojana, Natalia, Pratima Bansal, and J. Alberto Aragón-Correa. 2019. Older and Wiser: 'How CEOs' Time Perspective Influences Long-Term Investments in Environmentally Responsible Technologies. *British Journal of Management* 30: 134–50. Available online: https://onlinelibrary.wiley.com/doi/10.1111/1467-8551.12287 (accessed on 5 December 2021). [CrossRef]

Pantelidis, Pantelis, and Efthymios Nikolopoulos. 2008. FDI Attractiveness in Greece. *International Advances in Economic Research* 14: 90–100. Available online: http://link.springer.com/10.1007/s11294-007-9106-y (accessed on 3 February 2022). [CrossRef]

Paul, Andreea, Oana Cristina Popovici, and Cantemir Adrian Călin. 2014. The Attractiveness of CEE Countries for FDI. A Public Policy Approach Using the Topsis Method. *Transylvanian Review of Administrative Sciences* 10: 156–80.

Podvezko, Valentinas. 2006. Neapibrėžtumo Įtaka Daugiakriteriniams Vertinimams. *Verslas: Teorija ir Praktika* 7: 81–88. [CrossRef]

Rahim, Robbi, S. Supiyandi, A. P. U. Siahaan, Tri Listyorini, Andy Prasetyo Utomo, Wiwit Agus Triyanto, Yudie Irawan, Siti Aisyah, Mufida Khairani, Siti Sundari, and et al. 2018. TOPSIS method application for decision support system in internal control for selecting best employees. *Journal of Physics: Conference Series* 1028: 012052. [CrossRef]

Sadeghi, Pegah, Hamid Shahrestani, Kambiz Hojabr Kiani, and Taghi Torabi. 2020. Economic Complexity, Human Capital, and FDI Attraction: A Cross Country Analysis. *International Economics* 164: 168–82. Available online: https://linkinghub.elsevier.com/retrieve/pii/S211070172030264X (accessed on 3 February 2022). [CrossRef]

Samborskyi, Oleksandr, Oksana Isai, Iryna Hnatenko, Olga Parkhomenko, Viktoriia Rubezhanska, and Olena Yershova. 2020. Modeling of Foreign Direct Investment Impact on Economic Growth in a Free Market. *Accounting* 6: 705–12. Available online: http://www.growingscience.com/ac/Vol6/ac_2020_65.pdf (accessed on 5 December 2022). [CrossRef]

Sarkodie, Samuel Asumadu, and Vladimir Strezov. 2019. Effect of Foreign Direct Investments, Economic Development and Energy Consumption on Greenhouse Gas Emissions in Developing Countries. *Science of The Total Environment* 646: 862–71. Available online: https://linkinghub.elsevier.com/retrieve/pii/S0048969718328602 (accessed on 14 March 2022). [CrossRef]

Shang, Xuesong, Hebing Duan, and Jingyi Lu. 2021. Gambling versus Investment: Lay Theory and Loss Aversion. *Journal of Economic Psychology* 84: 102367. Available online: https://linkinghub.elsevier.com/retrieve/pii/S0167487021000076 (accessed on 14 March 2022). [CrossRef]

Simelyte, Agne, Gitana Dudzeviciute, and Aušra Liucvaitiene. 2017. Scandinavian foreign direct investment and economic growth of the baltic states. *European Journal of Sustainable Development* 6: 105. Available online: https://ecsdev.org/ojs/index.php/ejsd/article/view/505/502 (accessed on 21 April 2022). [CrossRef]

Valentinavičius, Stasys. 2012. Investicijos. Available online: https://www.vle.lt/straipsnis/investicijos/ (accessed on 20 July 2022).

Wang, Jinhuan, Liyin Shen, Yitian Ren, J. Jorge Ochoa, Zhenhua Guo, Hang Yan, and Zezhou Wu. 2019. A Lessons Mining System for Searching References to Support Decision Making towards Sustainable Urbanization. *Journal of Cleaner Production* 209: 451–60. Available online: https://linkinghub.elsevier.com/retrieve/pii/S0959652618332700 (accessed on 12 April 2022). [CrossRef]

Younsi, Moheddine, and Marwa Bechtini. 2019. Does Good Governance Matter for FDI? New Evidence from Emerging Countries Using a Static and Dynamic Panel Gravity Model Approach. *Economics of Transition and Institutional Change* 27: 841–60. Available online: https://onlinelibrary.wiley.com/doi/10.1111/ecot.12224 (accessed on 20 July 2022). [CrossRef]