EVALUATION OF ATTRACTIVENESS OF THE EU MEMBER STATES FOR FOREIGN DIRECT INVESTMENT

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Abstract. The world is increasingly being affected by globalisation, and investment is being affected by this continuous process. Investment is an important determinant of a country's growth, its micro- and macroeconomic development, and the overall economic well-being. Attractiveness for investment is an indicator that reveals accessibility and competitiveness of a region with all its material and non-material resources compared to other regions with similar characteristics. Based on systematic and comparative literature analysis, this article reviews the concepts of foreign direct investment (FDI) and FDI attractiveness, and examines FDI evaluation methods and models. The major purpose of the article is to evaluate attractiveness of the EU member states for FDI. Research methods: synthesis and comparison of the concepts and methods available in scientific literature, secondary data analysis, statistical data processing, multi-criteria evaluation methods. Results of research: developed model for evaluating the attractiveness of particular countries for FDI comprises three groups of determinants (baseline determinants, political and legal determinants, price and quality determinants), by empirical studies revealed that the countries classified by the United Nations as a group of Western Europe and other countries are most attractive for FDI.

Keywords: Foreign direct investment (FDI), FDI attractiveness.

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Introduction

Foreign investment has become a major economic driver for many countries, and it is a way for developing economies to discover the potential of innovative activity areas. Countries often face the need for restructuring, modernization and digitalisation. Domestic investors are not always capable of carrying out restructuring at their own expense; then foreign investment is expected. Foreign investors select a country for investment for a number of reasons: the market size, activity area, geographical location, time zone, political stability, labour force, expansion potential, tax system, and so forth. The European Union countries represent a huge market with favourable conditions for trade, high-skilled workers, the single currency used in most of the member states and a democratic political system, which makes the Union a very attractive market for many investors. The EU investors can come from other member states or represent the countries outside the EU. Investors from non-member states tend to have poorer investment conditions, more legal constraints, a longer process of acknowledging the necessary legal documents and a longer time to set up a business. Meanwhile, investors from other EU member states can take advantage of simpler and faster processes, easier accommodation of delegated business representatives, knowledge sharing, adjustment to familiar cultures and application of the EU common laws (one only needs to get acquainted with the national legal system). Nevertheless, not all EU member states are equally attractive to foreign investors and their yields may vary widely.

The analysis and comparison of various economic and social indicators reveal which of them most contribute to a country's attractiveness for investment, and which correlate conversely. Comparing the inflows of investment and other economic and social indicators for the period 2011–2019, this article aims to identify the major indicators that determine a country's attractiveness for investment.

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1. Scientific literature analysis

1.1. The concept of foreign direct investment

Investors who decide to develop or expand their business in another country, employ foreign direct investment (FDI) to relocate part of their business. This could be done through acquiring a company that is already operating in the target country or establishing a branch in this country. Investors tend to expect significantly higher returns from developing economies but frequently select developed ones to prevent the problems of a lack of expertise or an unfavourable economic or political situation. Host countries, in particular developing economies, are also looking forward to FDI.

FDI may have positive and negative effects. Scientific literature highlights the following advantages of FDI (Lozada & Kritz, 2020):
– international trade promotion,
– reduced trade tensions at the regional and global levels,
– technology, culture and knowledge sharing,
– diversification into other markets,
– reduced costs and higher efficiency,
– exploited tax benefits,
– visible employment and economic growth.

The negative effects of FDI are twofold: foreign-owned companies can dominate the domestic market and deprive local producers of income; foreign-owned companies can attract the best human capital, thus depriving the domestic economy of high-quality resources (Barrios et al., 2011). Researchers provide slightly different definitions of "foreign direct investment". According to Bayar (Bayar et al., 2020), FDI is a means of increasing a country's competitiveness and promoting economic growth through acquisition of new skills. The European Commission (2010) indicates that FDI refers to the establishment or acquisition of a business in another country. Burns (Burns et al., 2017) believes that FDI is an economic stimulus for low- and middle-income countries. According to Sadeghi (Sadeghi et al., 2020), FDI is an element of globalization that allows investors to produce goods and provide services from anywhere in the world. Bojnec and Fertő (2018) note that FDI is one of the processes that allows economic internationalization, while Series (Nitescu, 2018) argues that FDI refers to a long-term economic relationship through which an investor from another country can exercise significant influence over an investee. Kearney (Mitra, 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 categorised as horizontal and vertical. Horizontal investment is commonly employed to exploit the (absolute) size of the target market and to avoid (or reduce) trading costs. Meanwhile, vertical investment usually involves different production capacities possessed by particular companies and the differences in national resources. This way, fragmentation of the production chain is due to exploitation of international factors and price differences (Jungmann & Loretz, 2019).

In theory, capital should flow from rich to poor countries as long as the return on investment is equal. In practice, FDI mainly takes place in developed economies, although the highest returns can be generated in developing economies (Ly et al., 2018). FDI flows in developing economies foster innovation, contribute to reducing unemployment, accelerate economic development and stimulate modernization of production technologies (Simelyte et al., 2017). These factors are undoubtedly linked to a better exploitation of a host country's potential, but developing economies often face difficulties when trying to attract new investors.

Summarising the above-presented definitions of FDI, it can be stated that FDI is treated as an economic instrument based on a long-term economic relationship or as a process by which an investor can transfer the capital and knowledge accumulated in different areas to a host country. The capital and knowledge are usually transferred through establishing a branch, acquiring a company that is already operating in the target country or opening a subsidiary.

1.2. Methods and models for evaluating a country's attractiveness for FDI

FDI is evaluated by employing several indices which incorporate various criteria. In the latter case, a country's attractiveness for investment is expressed as a single value based on which countries can be ranked. Expressing attractiveness for investment as an index allows to use a number of qualitative and quantitative indicators that can gain several intermediate values or a single index value. Intermediate values can be useful if the research aims to rank a country in a particular group of criteria and compare it with similar countries. The methods for evaluating a country's attractiveness for investment are commonly developed by considering the whole set of available indicators that are divided into particular groups thus forming separate sets, and then intermediate values of the indices are estimated.

Scientific literature analysis revealed that the most common indices representing a country's attractiveness to FDI are as follows: the Global Foreign Direct Investment Country Attractiveness Index (GFICA), the Foreign Direct Investment Confidence Index (FDICI), the Venture Capital & Private Equity Country Attractiveness Index (VPCE) and the Global Attractiveness Index (GAI).

The Global Foreign Direct Investment Country Attractiveness Index (GFICA) is considered a valuable policy tool and can be used by investors as a benchmark before investing their capital. The index covers 109 countries that accumulate nearly 97% of the global direct investment and provides the information on the investment attractiveness of these countries (Jelili, 2013). The index is designed to help countries identify the areas for improvement. The GFICA index comprises 3 major categories: baseline conditions, key factors, and complementary factors.

The GFICA Index is not the only index used to evaluate a country's attractiveness for investment. The Venture

Capital & Private Equity Country Attractiveness Index (VPCE), introduced by Groh et al. (2021) also serves this purpose. The VPCE was developed as a value to help risk and private equity investors evaluate a country's attractiveness for investment. The project was started following a pilot study of the European countries, and after receiving the positive evaluations, it was developed worldwide. The VPCE index currently covers 125 countries around the world (Groh et al., 2018). The VCPE comprises 6 categories: economic activity, market size, tax environment, human capital and social environment, investor protection and corporate governance, and entrepreneurship opportunities (Groh et al., 2018). The final value of the VPCE index is calculated by standardizing the minimum and maximum values; the value of the index may vary between 0 and 100.

More recently, in 2016, the Global Attractiveness Index (GAI) was introduced. The purpose of this index is to provide a representative profile of the attractiveness and competitive sustainability of particular countries, and thus deliver reliable information to help businesses find a favourable environment for growth and process optimization. This index covers 144 countries, and its major purpose is to provide an innovative solution to help investors find the best country to invest in (Saisana et al., 2018). The GAI is unique in that it reconstructs data series from historical data, and its annual report reflects the updates announced by the major international statistical bodies. The GAI comprises 3 indices: the Positioning Index, the Dynamics Index and the Sustainability Index. The GAI was developed considering market-relevant data and future rankings, with a stronger focus on sustainability and the fact that countries have insufficient resources, which means that the indicators tend to constantly change and require updating.

A.T. Kearney's Foreign Direct Investment Confidence Index (FDICI) covers 25 countries worldwide. This index is focused on developed countries only. The index has been used since 1998; it is produced once a year and focuses on the markets that can attract largest investments over the following three years. The index is based on primary data obtained through surveying senior executives of the world's leading corporations. The ranks are estimated based on the questions about the likelihood of the respondent companies investing directly in the market over the following three years. Unlike other backward data on FDI flows, the FDICI provides the analysis of future markets where investment is intended to be made over the next three years. Although the FDICI is considered historically sound, the practice suggests that investors' intentions may change due to economic or political changes in potential host markets, reviewed quality objectives, feasibility of a project in a potential host market, or other reasons (Mitra, 2021).

Filimonova and Skvorstova (2017) developed a deterministic model of the integral criterion that evaluates attractiveness of a region for foreign investment. The model reflects the level of the corporate technosphere safety and a region's attractiveness for market investment. The model is universal and can be adjusted to any region.

Dorożyński et al. (2018) developed a model that indicates why special economic zones are more attractive for investment than the rest of the regions.

On balance, scientific literature proposes a number of models to evaluate a country's (a region's) attractiveness for FDI. Each model has its own specificities and focuses on different problems and includes different factors (see Table 1).

Table 1. Factors affecting countries attractiveness for direct investment (source: Pantelidis & Nikolopoulos, 2008 (1); Paul et al., 2014 (2); Kersan-Skabic, 2015 (3); Maza & Villaverde, 2015 (4); Economou et al., 2017 (5); Younsi & Bechtini, 2019 (6); Ouechtati, 2020 (7); Avetisyan, 2020 (8))

Factors	1	2	3	4	5	6	7	8
GDP per capita	+		+		+	+		+
Market size	+			+				+
Macroeconomic stability	+							
Strength of financial institutions %, GDP	+							
Political stability	+				+	+		+
Legal framework	+				+	+	+	
Bureaucratic procedures	+							
Bribery and corruption	+	+	+		+	+		
Legislation on the promotion of foreign capital	+							
Labor cost	+			+				
Human capital	+		+	+		+		+
Energy price	+							
Energy consumption	+					+		
Income tax rates	+	+	+		+			
Indirect tax revenue collected	+	+						+
Taxes on international trade	+		+					
Personal income tax collected	+							
Investment incentives	+							
Transport infrastructure	+	+	+	+				+
Communication infrastructure	+	+	+			+		
Research and development costs	+			+				
Inflation					+	+		+
Government gross debt, % GDP	+							
Exports, % GDP								+
GDP growth rate			+					
Population			+	+				+
Education		+		+				
Freedom of investment		+	+					
Quality of electricity supply		+						
Unemployment		+	+	+			+	

Factors	1	2	3	4	5	6	7	8
Average salary per month		+	+	+				
FDI inflows			+	+		+	+	
Freedom of ownership			+				+	+
Large-scale privatization			+					
Fiscal freedom			+					
Competition policy			+					
Gross added value				+				
Part of production				+				
High-tech sector				+				
Inflexibility of labor law		+	+	+			+	
Trade openness				+	+	+	+	
Regulatory quality					+	+	+	
Easy to do business		+					+	
Government efficiency					+	+		
Competition in services								+
Tariff complexity								+
Efficiency of border management								+

Considering the problem of this research, the authors employ different evaluation methods and focus on different factors, but some recurring factors are clearly visible in the models developed during the research. The specifics of the developed models may also differ due to the prevailing period and historical reasons.

2. Methodology

The major purpose of this research is to evaluate attractiveness of the EU member states for foreign direct investment by employing the model developed for evaluating a country's attractiveness for foreign direct investment. The model covers three major evaluation levels based on significance of the determinants (baseline determinants, political and legal determinants, price and quality determinants). The list of the determinants assigned to each level is not exhaustive, nor is the set of indicators representing each determinant (see Table 2).

Table 2. List of factors and indicators determining countries' attractiveness for foreign direct investment

Factor	Indicator
1 level (baseline determinants)	
Population	Population, total (source: World bank, n.d.)
Market size	Market size (source: World bank Economic Forum Global Competitiveness Index, n.d.)
GDP per capita	GDP per capita (current US$) (source: World bank, n.d.)
Unemployment	Unemployment with advanced education (% of total labor force with advanced education) (source: Eurostat, n.d.); Unemployment with basic education (% of total labor force with basic education) (source: Eurostat, n.d.)

Factor	Indicator
Education	Students enrolled in tertiary education by education level (source: Eurostat, n.d.); Pupils enrolled in upper secondary education by programme orientation (source: Eurostat, n.d.)
Energy consumption	Primary energy consumption (TWh) (source: Our World in Data, n.d.)
Transport infra-structure	Quality of port infrastructure (source: World Economic Forum, n.d.); Quality of air transport infrastructure (source: World Economic Forum, n.d.); Quality of railroad infrastructure (source: World Economic Forum, n.d.); Quality of roads (source: World Economic Forum, n.d.)
Commu-nication infra-structure	Individuals using the Internet (% of population) (source: World bank, n.d.); Fixed broadband subscriptions (per 100 people) (source: World bank, n.d.); Mobile cellular subscriptions (per 100 people) (source: World bank, n.d.)
Easy to do business	Start-up procedures to register a business (number) (source: World bank, n. d.); Time required to start a business (days), (source: World bank, n.d.); Cost of business start-up procedures (% of GNI per capita) (source: World bank, n.d.)
Trade openness	Trade openness: exports plus imports as percent of GDP (source: The Heritage Foundation, n.d.)
FDI inflows	Foreign direct investment, net inflows (% of GDP) (source: World bank, n.d.)
Inflation	Inflation, consumer prices (annual %), (source: World bank, n.d.)
2 level (political and legal determinants)	
Bribery and corruption	Control of Corruption: Percentile Rank, (source: World bank, n.d.)
Political stability	Political Stability and Absence of Violence/Terrorism: Percentile Rank (source: World bank, n.d.)
Property rights	Property rights index (0-100) (source: World bank, n.d.)
Regulatory of quality	Regulatory Quality: Percentile Rank (source: World bank, n.d.)
Government efficiency	Government Effectiveness: Percentile Rank, (source: World bank, n.d.)
The rule of law	Rule of Law: Percentile Rank (source: World bank, n.d.)
3 level (price and quality determinants)	
Income tax rates	Profit tax (% of commercial profits) (source: World bank, n.d.)
Research and development costs	Research and development expenditure, percent of GDP (source: The United Nations, n.d.)
Labor costs	Labour cost for LCI (compensation of employees plus taxes minus subsidies) (source: Eurostat, n.d.)

The significance of the attractiveness of the European Union countries for investment is calculated according to the function (see Eq. (1)):

$$P_{100} = F(w_{11}, P_{11}, w_{12}, P_{12}, w_{13}, P_{13}), \tag{1}$$

where: P_{100} – an estimate of the country's attractiveness for foreign direct investment; P_{11} – level 1 factors estimate; P_{12} – level 2 factors estimate; P_{13} – level 3 factors estimate; $w_{11,12,13}$ – weighting factors.

Attractiveness of the EU member states for foreign direct investment is evaluated by applying multi-criteria methods: Simple Additive Weighting (SAW) and the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS).

The SAW method is a simple and commonly used solution for multiple attributes (see Eq. (2)) (Salehi & Izadikhah, 2014).

$$S_j = \sum_{i=1}^{m} w_i r_{ij}, \tag{2}$$

where: S_j – the multi-criteria evaluation value of the jth alternative; w_i – the weight of the ith indicator; r_{ij} – the normalised value of the ith indicator for the jth alternative.

$$\sum_{i=1}^{m} w_i = 1 . \tag{3}$$

Many articles employ normalisation (or transformation) of the primary data to obtain the best value of a criterion (highest for the maximization criterion, and lowest for the minimization criterion) to provide the highest value equal to the unit (Zavadskas et al., 2008). Normalization of the primary data is performed based on Eq. (3). After obtaining the normalized data, the result is calculated based on Eq. (4).

$$r_{ij} = \frac{r_{ij}}{\sum_{j=i}^{r_{ij}} r_{ij}}, \tag{4}$$

where: r_{ij} – the value of the ith indicator for the jth object.

The method is based on a weighted average. The evaluation score for each alternative is calculated by multiplying the scale given to the alternative of a particular attribute by the relative importance weights assigned directly by a decision maker, and then summing the products representing all the criteria. The advantage of this method is that it is a proportional linear transformation of the raw data, which means that the relative order of magnitude of the standardized scores remains unchanged (Afshari et al., 2010).

The TOPSIS is one of the multi-criteria decision-making methods first introduced by Yoon and Hwang (Ding et al., 2016). This method is widely used to complete decision-making. This is because its concept is simple, easy to understand, efficient to calculate, and allows to measure the relative performance of an alternative decision (Rahim et al., 2018).

Calculation steps in the TOPSIS method are as follows (Łatuszyńska, 2014).

First, a normalized decision matrix is formed (see Eq. (5)):

$$r_{ij} = \frac{x_{ij}}{\sqrt{\sum_{i=1}^{m} x_{ij}^2}}, \tag{5}$$

where: r_{ij} – standardised matrix with criteria weights $w_j = w_1, w_2, w_3, \ldots, w_n$; w_j – the weight of a particular criterion for all j^{th} and $\Sigma_j = 1$ $w_j = 1$.

Then the distance from the positive idea decision (see Eq. (6)) and the negative ideal decision (see Eq. (7)) is estimated:

$$s_i^+ = \sqrt{\sum_{j=1}^{n} \left(v_{ij} - v_j^+\right)^2}, \tag{6}$$

where: s_i^+ – the alternative distance from the positive ideal decision, where $i = 1, 2, 3, ..., m$; v – normalisation of the weight matrix.

$$s_i^- = \sqrt{\sum_{j=1}^{n} \left(v_{ij} - v_j^-\right)^2}, \tag{7}$$

where: s_i^- – the alternative distance from the negative ideal decision, where $i = 1, 2, 3, ... , m$; v – normalisation of the weight matrix.

The positive ideal decision is estimated by employing the following function (see Eq. (8)):

$$CC_i^+ = \frac{s_i^-}{s_i^* + s_i^-}, \tag{8}$$

where: CC_i^+ – the positive ideal decision; s_i^+ – the alternative distance from the positive ideal decision; s_i^- – the alternative distance from the negative ideal decision.

This way, the alternative rank is obtained. Alternatives C^+ are ranked from the highest to the lowest value. The alternative with the highest value C^+ is the best decision.

In summary, both the SAW and TOPSIS methods are among the simplest multi-criteria evaluation methods. Their estimation is quite simple, the results are easy to understand, both methods allow to rank the obtained coefficients, which allows to compare the results. Both methods can consider a large number of complex criteria and then normalise the data to obtain comparable results. Nevertheless, because the models are not characterised by the consistency of results, the results can be quite dynamic. Given the differences in the estimations, it is not surprising that different final results are obtained.

3. Research results

The SAW and TOPSIS multi-criteria evaluation methods were applied to estimate the values representing the attractiveness of the EU member states for FDI; then the states were ranked according to the values obtained. The attractiveness of 27 EU member states was evaluated over the 2009–2019 period. By applying the SAW method (see

Table 3. Rating of the attractiveness of the European Union countries for foreign direct investment in 2009–2019. SAW method

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
France	7	3	10	9	4	3	1	1	1	1	1
Germany	5	6	5	3	2	2	2	2	2	2	2
Sweden	4	4	3	4	7	7	6	3	3	3	3
Denmark	3	5	2	2	5	6	3	4	4	4	4
Netherlands	9	8	6	7	6	8	5	5	5	7	5
Austria	8	7	8	6	8	5	4	8	6	5	6
Finland	2	2	1	1	3	4	7	7	7	6	7
Luxembourg	1	1	4	5	1	1	8	6	8	10	8
Belgium	6	10	9	10	9	9	9	9	15	9	9
Ireland	12	9	11	11	10	10	10	10	9	8	10
Czhechia	11	12	16	14	11	11	11	12	10	11	11
Estonia	15	13	12	13	12	12	14	11	11	12	12
Slovenia	14	14	14	12	13	14	15	14	14	13	13
Hungary	16	19	18	18	19	21	19	19	21	22	14
Lithuania	18	21	20	20	14	13	20	16	12	16	15
Portugal	13	15	15	16	17	17	13	13	13	14	16
Spain	19	17	7	8	16	16	16	15	16	15	17
Poland	24	25	21	21	23	20	18	20	20	18	18
Italy	23	22	19	19	18	19	17	18	19	19	19
Latvia	21	26	23	23	20	15	21	22	23	20	20
Cyprus	10	11	13	15	15	18	23	21	22	26	21
Romania	27	27	26	27	25	25	25	25	26	23	22
Malta	17	16	17	17	21	23	12	17	17	17	23
Slovakia	22	23	22	22	24	24	22	23	24	21	24
Bulgaria	26	18	27	26	26	26	26	27	18	25	25
Croatia	20	20	24	24	22	22	24	24	25	24	26
Greece	25	24	25	25	27	27	27	26	27	27	27

Table 3), the states were ranked from most attractive to least attractive for FDI with consideration of the values for 2019. Based on the results, France is the most attractive country for FDI, followed by Germany and Sweden. The Czech Republic is 11th. The relatively low results are demonstrated by the Southern European countries (Portugal, Spain, Italy, Cyprus, Malta and Greece).

It should be noted that the results obtained by applying the SAW multi-criteria evaluation method to research the selected 11-year period are quite dynamic. The results indicate that Greece has the worst ratings and tends to be the last or penultimate in the rating table since 2013; thus, it can be considered the least attractive country for FDI in the EU.

The results obtained when evaluating the attractiveness of the EU member states for FDI through the TOPSIS method (see Table 4) are slightly different from the results obtained through the SAW method.

Table 4. Rating of the attractiveness of the European Union countries for foreign direct investment in 2009–2019. TOPSIS method

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Luxembourg	1	1	1	1	1	1	1	1	1	3	1
Sweden	4	3	3	3	2	2	4	4	3	2	2
France	10	8	8	7	8	8	6	6	6	5	3
Denmark	6	6	4	10	7	7	8	8	8	4	4
Finland	2	2	2	2	3	4	3	2	2	6	5
Germany	5	5	5	5	4	6	7	5	7	7	6
Austria	8	7	10	6	10	9	10	9	9	8	7
Ireland	3	4	11	9	6	5	2	3	5	1	8

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Cyprus	7	10	7	4	9	3	5	10	10	23	9
Netherlands	11	9	6	8	5	10	9	7	4	15	10
Belgium	9	12	9	11	11	11	12	13	16	10	11
Estonia	12	13	12	12	13	12	11	11	12	12	12
Portugal	13	15	17	16	14	14	18	17	11	11	13
Czhechia	14	14	14	14	12	13	14	14	13	9	14
Spain	17	20	13	13	19	17	16	12	17	14	15
Slovenia	16	16	16	15	16	15	15	15	14	13	16
Lithuania	20	19	18	17	15	16	13	18	18	17	17
Hungary	18	23	20	21	22	21	22	20	24	25	18
Italy	23	22	24	23	23	24	23	23	23	20	19
Latvia	21	18	22	22	20	22	20	21	20	18	20
Slovakia	19	17	21	20	21	20	19	19	19	21	21
Poland	22	21	19	19	18	18	17	16	21	19	22
Croatia	24	24	23	24	25	23	24	22	22	22	23
Malta	15	11	15	18	17	19	21	24	15	16	24
Bulgaria	25	25	26	25	26	25	27	26	25	24	25
Greece	26	26	25	26	24	26	26	27	27	27	26
Romania	27	27	27	27	27	27	25	25	26	26	27

The general tendency remains the same, with most developed EU member states sharing first 11 positions. The leader Luxembourg retained its leading position over the entire 2009–2019 period, except the year 2018. Luxembourg was followed by Sweden and France. The most dynamic results were estimated for Cyprus which was ranked 9th in 2019, but had fallen to the 23rd position in 2018, reaching the record low over the period under consideration. In 2014, Cyprus was ranked 3rd, which was the record high. No other country is characterized by similar rating fluctuations.

When comparing the ratings obtained by applying the SAW and TOPSIS methods, it can be seen that Denmark, Estonia and Bulgaria were ranked the same in both rating tables. Based on the TOPSIS method, Romania was ranked last, and Greece – penultimate in 2019. The Southern European countries were ranked higher by the TOPSIS than SAW method, but only Cyprus was in the top 10, while other Southern European countries shared their rankings with the Warsaw Pact countries.

By applying the TOPSIS method (see Figure 1), Romania and Bulgaria were found to take the lowest positions in 2019, 27th and 25th respectively. Among the Baltic countries, Estonia performed best, followed by Lithuania and Latvia. The biggest change was recorded in Hungary that fell from the 18th position in 2009 to the 25th position in 2018, which was the record low position over the period under consideration. Lithuania's ranks also moved up 7 positions in the 2009–2019 period. In 2009, Lithuania was ranked 20th, but in 2015, after a steady improvement in its positions, the country was ranked 13th, thus reaching its record high. Later

Lithuania's ratings started dropping, and in 2019 it was ranked 17th.

The results estimated for Poland are also quite dynamic: from its 22nd position in 2009, the country moved up 5 positions and was ranked 17th in 2015, which was the best country's achievement in terms of its attractiveness for FDI. Other EU member states retained similar positions with no major jumps.

The ranks representing the attractiveness of the EU member states for FDI based on the TOPSIS method indicate that most states did not change their ranks or changed insignificantly moving up or down one or two positions. In the 11-year period, Malta had the most significant drop in its rank which fell down 9 positions. Ireland's rank also dropped quite significantly – 5 positions, while France is characterised by the biggest rise in its rank – the country moved up 7 positions. Italy's rank also increased quite significantly – 4 positions. Estonia, Portugal, the Czech Republic, Slovenia, Hungary, Poland, Bulgaria, Greece and Romania did not change their positions throughout the period under consideration.

The results representing the attractiveness of the EU member states for FDI based on the SAW method (see Figure 2) are slightly more dynamic. Most countries changed their ranks within two to three positions. The most significant drop can be seen in Cyprus – the country's rank dropped 11 positions, followed by a significant drop in Luxembourg's rank – it fell down 7 positions. Malta and Croatia fell 6 positions. France and Poland are characterized by the biggest rise in their ranks – they moved up 6 positions. The Czech Republic is the only country not to change its rank throughout the 2009–2019 period. Sweden, Slovenia, Latvia and
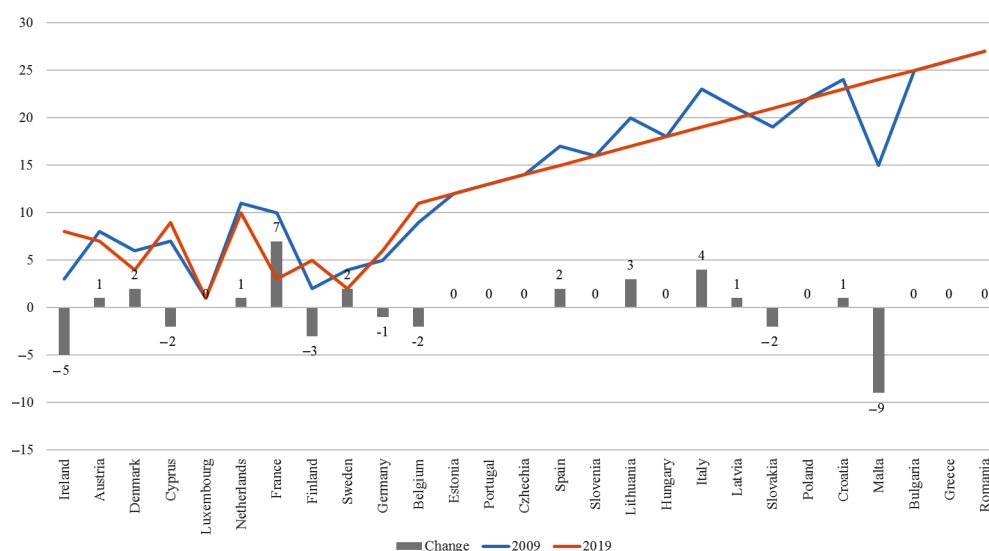
Figure 1. Changes in the ranks representing the attractiveness of the EU member states
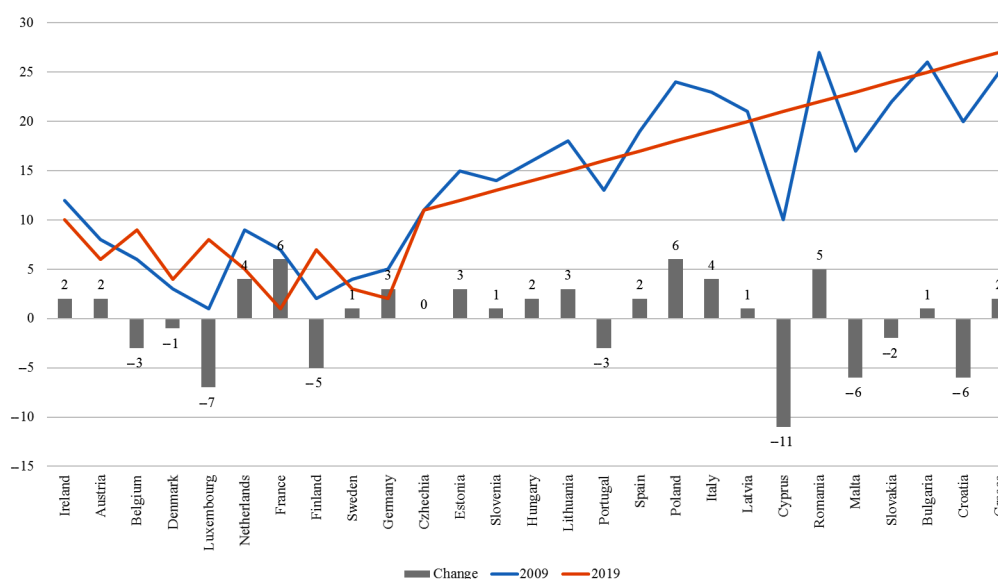for FDI in 2009 and 2019, based on the TOPSIS method

Figure 2. Changes in the ranks representing the attractiveness of the EU member states for FDI
in 2009 and 2019, based on the SAW method

Bulgaria rose very slightly in their ranks – by just one position.

As expected, the results estimated for separate countries varied when applying different methods, but the general tendencies remained similar. The most advanced EU member states, such as France, Germany, Sweden, Denmark, the Netherlands, Austria, Finland, Luxembourg, Belgium and Ireland, are most attractive for FDI. Estonia and the Czech Republic are leaders in terms of their attractiveness for FDI among the EU member states under the Warsaw Pact. The newest members of the EU – Bulgaria, Romania and Croatia – are least attractive for FDI. Among the countries of the Southern Europe, Greece is least attractive, while Portugal – most attractive for FDI.

Conclusions

1. Foreign direct investment is determined by different factors depending on an investor's purpose in a host country. When investing in developed economies, the price factor is less important, but macroeconomic indicators, quality, population's education, political and legal factors are extremely important. The models analysed in this research always consider macroeconomic indicators as most significant ones. Some authors focus on the factors representing transportation and connections which should ensure efficient logistics and communication. The models employed for evaluating a country's attractiveness for FDI can be categorised as scientific and commercial. In the case

of the use of commercial models, the investment attractiveness ranks estimated for particular countries are announced at least once a year.

2. The system of the factors affecting FDI allows to identify the major FDI determinants, to conduct a detailed evaluation of a country's attractiveness for FDI, and to analyse FDI attractiveness in terms of time, country groups and factor groups. The model developed for evaluating the attractiveness of particular countries for FDI comprises three groups of determinants (baseline determinants, political and legal determinants, price and quality determinants) most significantly affecting FDI attractiveness. All the groups contain a different number of determinants but are equally important.

3. Application of the model for evaluating the attractiveness of the EU member states for FDI revealed that the countries classified by the United Nations as a group of Western Europe and other countries are most attractive for FDI. This group is followed by the EU member states under the Warsaw Pact, while the poorest results were estimated for the Southern Europe countries. The research also disclosed that the ranks estimated for the group of Western Europe and other countries cannot be assessed unambiguously, and it is difficult to say which countries are most attractive for FDI as the leading positions changed when applying the SAW and the TOPSIS multi-criteria evaluation methods to research the 2009–2019 period. Estonia and the Czech Republic were most attractive for FDI among the EU member states under the Warsaw Pact throughout the entire period under consideration. They remained the leaders in their group when applying both multi-criteria evaluation methods. The poorest results were estimated for Bulgaria, Croatia and Romania. These countries were the last to join the EU and are least unattractive for foreign direct investment.

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