

DIRECTIONS OF FOREIGN CAPITAL DESTINATIONS IN THE EU COUNTRIES AND THE TURMOIL OF THE GLOBAL ECONOMY

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Purpose: The main aim of this paper is to examine whether COVID-19 pandemic and Russo-Ukrainian War have reshaped significantly FDI patterns within EU countries. The main hypothesis is formulated as follows: while the COVID-19 pandemic and the Russo-Ukrainian war have had an impact on the economies of European Union countries, the attractiveness of FDI destinations within the EU has remained relatively unchanged.

Design/methodology/approach: The study uses statistical data on FDI inflows to EU countries from 2015 to 2022, analyzing two periods: 2015-2018 and 2019-2022. The study utilizes World Bank data and includes a range of economic and investment parameters. The Authors used the PCA and the HCPS method to verify whether the recent events influence the directions of FDI inflows.

Findings: The conducted research indicated that according to chosen parameters EU countries may be grouped in three clusters, similar in the context of chosen economic and socio-demographic indicators in relation to FDI inflows. As research results show, despite economic changes caused by COVID-19 pandemic and the Russo-Ukrainian war, the investment attractiveness of countries grouped within a given cluster has not changed significantly.

Research limitations/implications: In this article, the research is focused on general foreign capital flows. We cannot assume that there are changes in the forms of the capital invested what is recommended to analyze in the future research.

Originality/value: This research is significant for several reasons. Firstly, it provides valuable insights into FDI inflows into the EU in current economy changes. Secondly, the research findings can contribute to a better understanding of the impact of FDI on the EU's economic development. Finally it also formulates recommendations for future studies on factors that determine FDI inflows in particular economies. As a value added, the Authors proved that common determinants can be identified for specific groups of EU countries, given the ongoing economic changes. Moreover, in countries belonging to cluster 1, there are significant differences in the set of factors determining FDI inflows between 2015-2018 and 2019-2022.

Keywords: foreign direct investment, investment attractiveness, clusters.

Category of the paper: Research paper.

1. Introduction

The European Union has long relied on Foreign Direct Investment (FDI) as a cornerstone of its economic growth and competitiveness. The formation of clusters, geographic concentrations of interconnected companies and institutions, has amplified the impact of FDI within the EU. However, the unprecedented challenges posed by the COVID-19 pandemic and the ensuing Russian-Ukrainian war have fundamentally altered the investment landscape.

The COVID-19 pandemic triggered an unprecedented health and economic crisis, leading to a global recession. Lockdowns, travel restrictions, and uncertainty about the future of the economy significantly eroded investor confidence. The outbreak of war in Ukraine in 2022 further exacerbated the situation. The conflict sparked a new wave of geopolitical uncertainty, rising energy and commodity prices, and disruptions to supply chains. Investors became more cautious and could began to avoid risky investments, further limiting capital flows to the region.

Even though the war in Ukraine and the COVID-19 pandemic led to unprecedented upheavals in the global economy, the impact of these events on foreign direct investment (FDI) in the European Union might be more multifaceted. Although both the pandemic and the war have elevated investor uncertainty, theoretically resulting in diminished capital flows, lockdowns, supply chain disruptions, and geopolitical risks have undoubtedly influenced corporate investment decisions. Nonetheless, these same events have given rise to new investment prospects, especially in sectors linked to the green transition, digitalization, and security.

This article examines whether these events have reshaped significantly FDI patterns within EU countries. We have formulated following hypothesis:

H: While the COVID-19 pandemic and the Russo-Ukrainian war have had an impact on the economies of European Union countries, the attractiveness of FDI destinations within the EU has remained relatively unchanged.

We have identified common determinants of FDI inflows for specific groups of EU countries as an additional contribution to the research. While the determinants of FDI inflows into individual economies may differ, the Authors suggest that common determinants can be identified for specific groups of EU countries, given the ongoing economic changes.

To conduct the analysis, statistical data on FDI inflows into EU countries between 2015 and 2022 was utilized. Analyze was conducted in two time periods: from 2015 to 2018 and from 2019 to 2022 in order to verify whether the pandemic period and any other pollical changes like Russian and Ukrainian war influence the directions of FDI inflows. The initial step of the study involved conducting a principal component analysis (PCA). The data was subjected to hierarchical clustering using the HCPC (Hierarchical Clustering on Principal Components) method (Kassambara, 2017).

This research is significant for several reasons. Firstly, it provides valuable insights into FDI inflows into the EU in current economy changes. Secondly, the research findings can contribute to a better understanding of the impact of FDI on the EU's economic development.

Finally it also formulates recommendations for future studies on factors that determine FDI inflows in particular economies.

2. The Determinants of Foreign Direct Investment Flows

A substantial body of research underscores market size, growth rate, and development opportunities as paramount determinants of Foreign Direct Investment (FDI), emphasizing their role in optimizing resource allocation and achieving economies of scale (Kumari, Sharma, 2015; NGO et al., 2020; Liu et al., 2014; Khan, Ozturk, 2020). The financial development emerges as a pivotal factor influencing FDI attraction. Countries exhibiting robust financial systems are perceived as lower risk environments, fostering investor confidence (Tsaurai, 2014; Alfaro, Chauvin, 2020; Meivitanli, 2021).

Research also highlights the disproportionate importance of labor market liberalization and financial deepening in developing economies compared to their developed counterparts (Wash, Yu, 2010). Furthermore, the positive correlation between FDI and economic growth is contingent on a certain level of financial development (Osei, Kim, 2020). As financial markets mature, the risk profile of developing countries diminishes, thereby reducing capital flight.

It was proved that foreign investors are also attracted by macroeconomic stability, characterized by low inflation, unemployment, and adequate domestic savings. While inflation is often identified as a risk factor (Azam, Haseeb, 2021; Rathnayaka Mudiyansele et al., 2021), unemployment is also recognized as a destabilizing force (Kurtović et al., 2020; Vučković et al., 2020). The labor market has been further strained by emigration, exacerbating existing long-term unemployment and creating labor shortages (Polster, 2021).

Additionally, it was also verified, that investors consider the current and past status of FDI in a given industry when making their decisions. However, it appears that growth prospects are a significantly more important decision criterion than the historical status and profitability (Rózański, Socha, 2018).

A country's international attractiveness is also determined by legal, political, and administrative systems (Stawicka, 2015, p. 578). The stability of the government, the good functioning of the legal system and the control of corruption are known to attract foreign investors by reducing the risks of the country (Sánchez-Martín et al., 2014, p. 293; Zhang, Liu, 2021, p. 118; Kurecic, Kokotovic, 2017, p. 3). These factors demonstrate that the country is politically stable, respects the principles of law, and seeks to address ethical and illegal situations.

Studies also show that countries with better institutional quality can attract more FDI. It is proved that among EU countries there are considerable disparities between those leading in institutional quality and the group of institutional 'outsiders' in the ranking (Dobrowolska, Dorożyński, Kuna-Marszałek, 2021).

The stability of the business environment, research and innovation capabilities, and market size make Europe an attractive location for foreign direct investment. However, this attractiveness does not remain at the same level in the country as a whole. Foreign investors are considered to be highly sensitive to changing economic, political, and institutional conditions. Currently, global value chains are shortening, and production is becoming more geographically concentrated (Jankowiak, 2021).

As studies show, in recent years, there has been an overall decline in the exchange of FDI capital between the EU and other parts of the world, along with increased volatility and instability in FDI flows for individual EU member states. Given the worsening external relations concerning FDI capital flows, the intra-EU capital flows, facilitated by the free movement of capital within the single internal market, are becoming increasingly significant for individual countries (Witkowska, 2021). Developed countries, including the EU, experienced the most significant decline at 73% compared to the year before the pandemic. EU Member States saw disinvestments, with only a slight increase in FDI flows for a few. Despite a global rebound in FDI flows in 2021, the EU's growth was only 8% (Witkowska, 2023). During the pandemic, despite its negative impact on international trade, the dynamic development of e-commerce was observed. The role of the digital economy's growth in mitigating the pandemic's adverse effects and creating new opportunities for businesses in global scale (Wysokińska, 2023).

Russian-Ukrainian war also influenced multinational corporations activity. Numerous democratic countries, including the EU, imposed a variety of sanctions on Russia. These included individual sanctions (targeting persons and entities responsible for and supporting the war), economic sanctions (affecting the financial, trade, energy, transport, technology, and defense sectors), media restrictions, and diplomatic actions. These sanctions created significant obstacles and restrictions on the functioning of the Russian economy and businesses (and, to some extent, also impacted the countries enforcing them) and also influenced strategic plans of many multinational companies (Marcinkowska, 2022).

In the 2023 E&Y report, political instability, cost increase, and regulatory burden are the three factors that may prevent Europe from becoming an attractive place for foreign direct investment. In the study, investors were asked how to choose the country they were investing in, and the answers were received: liquidity and capital availability in financial markets, strength in domestic markets, policy approach to climate change, and sustainability. Unlike in 2015, sustainability concerns also began to affect investment decisions. In addition, there is an increase in foreign direct investment projects in countries outside Western Europe, such as Poland, Portugal, and Romania. This is due to the restructuring of the global supply chain and the cost-competitiveness of production and back-office operations (Ernst & Young European Attractiveness Survey, 2023, pp. 7-9).

3. Methods

Statistical Analysis

In this study, a significance level of $\alpha = 0.05$ was adopted. This implies that differences in results were considered statistically significant if the p-value was less than 0.05. The Shapiro-Wilk test was employed to assess the normality of distributions for numerical variables. Data were presented using both parametric (mean M and standard deviation SD) and non-parametric (median Mdn, first quartile Q1, third quartile Q3, and minimum Min and maximum Max) descriptive statistics. This presentation method facilitates a comprehensive understanding of the characteristics of the examined variables. The Wilcoxon test was applied to evaluate the significance of differences over time. The magnitude and direction of the effect of changes over time were estimated using the rank-based Spearman's correlation coefficient $r_{biseriat}^{rank}$.

Cluster Analysis Using HCPC Method

The initial step of the study involved conducting a principal component analysis (PCA), which served to reduce the dimensionality of the standardized data. This process enabled the identification of the main factors that contribute to the variability in the data, which is crucial for subsequent stages of cluster analysis.

Following the completion of the PCA, the data was subjected to hierarchical clustering using the HCPC (Hierarchical Clustering on Principal Components) method (Kassambara, 2017). Within this process, an agglomerative algorithm was employed, allowing objects to be gradually combined into larger groups until an optimal number of clusters was achieved. The number of clusters was determined based on statistical criteria, such as silhouette indices or gap statistics, enabling objective identification of the optimal cluster structure. This process effectively grouped countries based on their similarity in key economic and socio-demographic indicators. Thus, as a cluster Authors understand a group of countries that are similar in the context of chosen economic and socio-demographic indicators in relation to FDI inflows.

The next stage of the analysis involved applying the eta squared (η^2) measure, which assesses the strength and significance of the association between countries' membership in specific clusters and the analyzed economic parameters. The η^2 value indicates what percentage of the variance in the dependent variable (i.e., the examined economic parameter) is explained by the independent variable (cluster membership). This result allows for an evaluation of whether grouping countries based on their economic characteristics is justified and whether cluster membership has a significant impact on the examined parameters.

In the final step, differences between the isolated clusters were estimated, and the t-test for independent samples was applied. The purpose of the test was to compare the mean values of each of the examined economic parameters in the individual clusters relative to the overall mean for the entire sample. This test allowed for statistical verification of whether the observed differences in economic parameters between clusters are significant.

Through a comprehensive comparative analysis, the study aims to contribute to a deeper understanding of the impact of EU policies and global events on foreign capital flows in EU countries. In the following table parameters that were used in the research are presented.

Table 1.

Parameters used in research

Parameter	units	Description
GFLD	bln USD	The value of greenfield foreign direct investment (FDI) projects announced in a given period in particular country.
FDI Outflows	bln USD	Outflow of foreign direct investment from the country.
GFLD no	amount	Number of greenfield foreign direct investment (FDI) projects announced, classified by target country.
GDP per capita	ths.USD	Gross Domestic Product per capita, calculated as the ratio of GDP to the average annual population.
POLIT STAB	[-2,5 – 2,5]	Political stability and absence of violence/terrorism index, measuring the perception of risk of political instability and violence.
LABOR	bln USD	Number of people of working age (15 years and older) who are employed or actively seeking work.
PERS REMIT	%	Personal remittances as a percentage of GDP, including personal transfers and compensation of employees.
POPUL TL	amount	Total population of the country, regardless of legal status or citizenship, mid-year estimates.
POPUL DNSTY	persons/km ²	Population density, indicating the number of people per square kilometer of land area
POPUL GRWTH	%	Annual population growth rate, expressed as the exponential change in population compared to the previous year.
INDSTR	%	Share of industry (including construction) in GDP, comprising value added in mining, manufacturing, and energy sectors.
INTERNET	%	Percentage of population using the Internet.
INFL	%	Annual inflation rate, measured by the consumer price index.
GDS USD	bln USD	Gross national savings, calculated as the difference between GDP and total consumption expenditures.
GDS %	% GDP	Gross national savings as a percentage of GDP.
GNE	bln USD	Gross domestic expenditure, summing private and public sector expenditures, and gross investments.
DOM CREDIT	% GDP	Domestic loans provided to the private sector as a percentage of GDP.

Source: World Bank Data, <https://data.worldbank.org/>

The criteria for selecting the determinants of FDI inflows included both theoretical research findings (e.g., Tsaurai 2018) and the availability of empirical data for the entire analysis period. The Authors focused on those factors that are considered to be the most important in the context of current economy challenges for multinational companies.

The analysis was conducted in two periods: 2015-2018 and 2019-2022. The selection of the analysis period was influenced by significant economic events such as the COVID-19 pandemic, which began in 2019 and the Russo-Ukrainian war which started in 2022. The COVID-19 pandemic that occur at the end of 2019 influenced the international trade that is related to the foreign capital flows. The baseline period for the analysis is 2015-2018, which the Authors consider relatively stable in terms of the global economy.

4. Results

Clusters of countries by the context of chosen economic and socio-demographic indicators in relation to FDI inflows

In the context of a two-dimensional space analysis, the results of the hierarchical clustering have been illustrated in Figure 1. This representation allows for a visual assessment of the distribution and separation of clusters, which have been distinguished based on key economic and demographic variables.

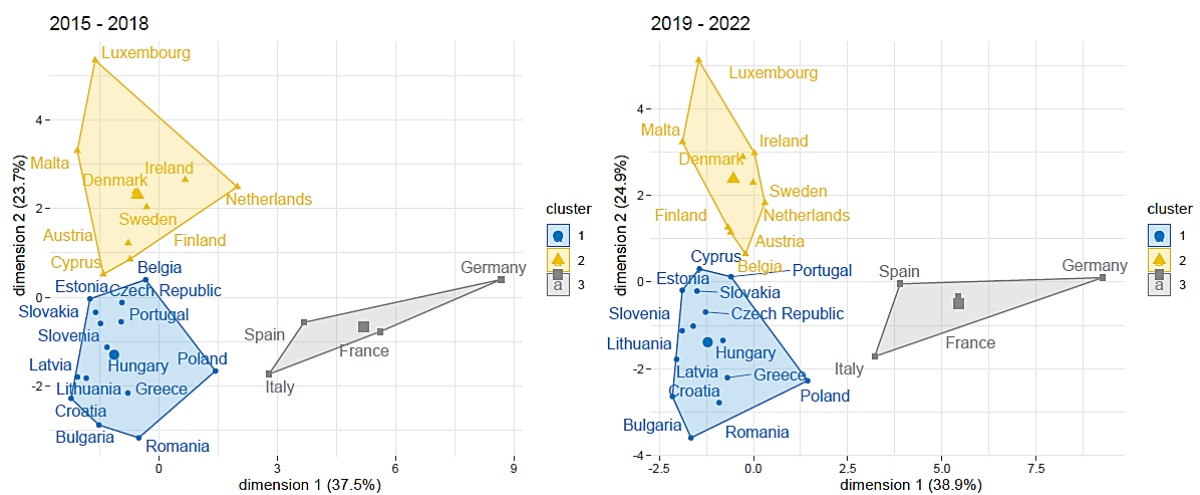


Figure 1. Principal Component Analysis (PCA) map illustrating the distribution of clusters and the location of individual countries in a two-dimensional analytical space, based on selected economic and social parameters, divided by the study period. Each point on the map represents a country, and the variety of colors corresponds to cluster membership.

The two-dimensional space used for cluster visualization was constructed based on the first two principal components obtained in the PCA process. These components, which form the axes of the coordinate system, were selected for their ability to represent the largest portion of variance in the dataset. Collectively, the first two components explain over 60% of the total variance of the examined parameters, demonstrating high effectiveness in dimensionality reduction while preserving key information characterizing the data.

Table 3 presents the composition of clusters divided into two analyzed periods: 2015-2018 and 2019-2021.

Table 2.

Composition and Changes in Cluster Composition During the Analyzed Periods 2015-2018 and 2019-2021

	2015-2018	2019-2021
Cluster 1	Belgium, Estonia, Czech Republic, Slovakia, Portugal, Slovenia, Latvia, Hungary, Poland, Lithuania, Greece, Croatia, Bulgaria, Romania	Estonia, Czech Republic, Slovakia, Portugal, Slovenia, Latvia, Hungary, Poland, Lithuania, Greece, Croatia, Bulgaria, Romania, Cyprus
Cluster 2	Luxembourg, Malta, Denmark, Ireland, Sweden, Netherlands, Austria, Finland, Cyprus	Luxembourg, Malta, Denmark, Ireland, Sweden, Netherlands, Austria, Finland, Belgium
Cluster 3	Spain, Germany, Italy, France	Spain, Germany, Italy, France

Source: own elaboration.

Due to the similarity of the factors included in the analysis, EU countries could be grouped into three clusters. This implies that there are three groups of countries for which the same set of parameters can be used to describe the determinants of FDI inflows. It should be noted that although the values of the factors considered as determinants of FDI inflows changed over the analyzed periods, this did not significantly affect the composition of countries within a given cluster. An exception to this was Belgium and Cyprus, where more significant changes resulted in a shift in the parameters determining FDI inflows to these countries.

The absence of significant changes in the cluster structure indicates that, despite the economic changes associated with the COVID-19 pandemic and the Russo-Ukrainian war, the investment attractiveness of countries grouped within a given cluster has not changed significantly. This positively verifies the main hypothesis.

The estimation of the effect size of hierarchical clustering on principal components (HCPC) is presented in Table 4.

Table 3.

Relationship Between Cluster Variable and Selected Quantitative Variables, Analyzed in the Context of Two Study Periods (Only Significant Variables)

Parameter	2015- 2018		2019-2022	
	η^2	p	η^2	p
POPUL.TL	0,84	< 0,001	0,83	< 0,001
GNE	0,82	< 0,001	0,80	< 0,001
LABOR	0,81	< 0,001	0,80	< 0,001
GDS USD	-	-	0,69	< 0,001
GFLD no	0,61	< 0,001	0,61	< 0,001
POPUL GRWTH	0,57	< 0,001	0,41	0,002
GFLD	0,55	< 0,001	0,61	< 0,001
GPD per capita	0,53	0,001	0,61	0,001
POLIT STAB	0,41	0,002	0,44	0,001
DOM CERDIT	0,40	0,002	0,39	0,003
INFL	-	-	0,40	-
INTERNET	0,39	0,003	0,44	< 0,001
FDI outflows USD	0,33	0,008	0,49	< 0,001
PERS REMIT	0,29	0,018	-	-
GDS%	0,25	0,036	0,35	0,005

Source: own elaboration.

The analysis of the impact of quantitative variables on cluster assignment in different study periods revealed significant differences in the association strengths between these variables and cluster membership. In both periods, variables such as total population (POPUL.TL), gross national product (GNE), and employment (LABOR) exhibited very high eta-squared values (η^2), ranging from 0.80 to 0.84, indicating a strong relationship between these variables and cluster membership. These variables, characterizing basic economic and demographic aspects, play a key role in differentiating clusters in both analyzed periods, suggesting their stable role in the data structure.

On the other hand, noticeable variability in the association strengths for some variables across different periods was observed. For example, the eta-squared value for population growth (POPUL GRWTH) decreased from 0.57 in the first period to 0.41 in the second, which may indicate changes in demographic dynamics affecting cluster structures over time. The variable GDS USD, which was not significant in the first period, shows a significant association ($\eta^2 = 0.69$) in the second period, indicating changes in the economic determinants of clustering.

The stability of associations observed for variables such as GFLD no and GFLD indicates that certain financial flow directions maintain their role in differentiating clusters regardless of changes in the macroeconomic environment. Conversely, variables related to political stability (POLIT STAB) and domestic credit (DOM CREDIT) also exhibit moderately strong relationships with clustering in both periods, suggesting that certain political and financial aspects have a long-term impact on socio-economic structures.

The determinants of FDI flows in particular destinations

The Authors identified the behavior of individual clusters under varying economic and social conditions and monitored the dynamics of these indicators over two distinct time periods: 2015-2018 and 2019-2022. The analysis is based on comparing the mean values and standard deviations for selected parameters across different clusters, considering the entire research sample. Thus, the characteristic of particular cluster by chosen parameters related with FDI flows was created.

Table 4.*Significant Parameter Characteristics for Each Cluster¹ by Study Period*

Parametr	2015-2018					2019-2022				
	M _{cluster}	M _{sample}	SD _{cluster}	SD _{sample}	p	M _{cluster}	M _{sample}	SD _{cluster}	SD _{sample}	p
<i>Cluster 1</i>										
PERS REMIT	2,39	1,67	1,53	1,45	0,007	2,19	1,55	1,66	1,49	0,024
GNE	164,24	516,29	152,35	814,44	0,022	162,37	583,87	154,74	903,24	0,014
GDS USD	39,40	137,84	38,29	216,32	0,016	37,60	160,35	39,94	241,63	0,007
FDI Outflows USD	0,86	23,01	2,74	45,32	0,010	-	-	-	-	-
INTERNET	75,86	79,89	7,54	9,35	0,008	83,78	87,12	4,71	6,30	0,005
DOM CREDIT	57,55	80,71	22,22	39,12	0,002	54,28	73,97	20,73	32,63	0,001
POPUL GRWTH	-0,28	0,27	0,48	0,86	0,001	-0,31	0,17	0,76	0,89	0,004
GPD per capita	18231,22	32613,95	8120,75	21909,29	0,001	20804,80	37677,82	5140,64	24797,93	< 0,001
INFL	-	-	-	-	-	4,99	4,01	1,69	1,62	0,001
GFLD no	-	-	-	-	-	101,75	210,63	120,79	274,05	0,036
GDS %	-	-	-	-	-	23,27	27,59	5,79	10,03	0,022
<i>Cluster 2</i>										
POPUL GRWTH	1,16	0,27	0,76	0,86	< 0,001	0,95	0,17	0,66	0,89	0,002
GPD per capita	53677,32	32613,95	23476,54	21909,29	0,001	63684,80	37677,82	25710,23	24797,93	< 0,001
INTERNET	88,00	79,89	6,47	9,35	0,002	92,96	87,12	3,16	6,30	0,001
POLIT STAB	0,97	0,67	0,21	0,35	0,003	0,90	0,68	0,16	0,25	0,002
DOM CREDIT	111,64	80,71	43,60	39,12	0,004	95,71	73,97	34,00	32,63	0,016
GDS %	33,38	26,97	11,57	9,06	0,011	36,00	27,59	11,88	10,03	0,003
INFL	-	-	-	-	-	3,09	4,01	0,53	1,62	0,042
<i>Cluster 3</i>										
POPUL TL	64,10	16,51	12,86	21,77	< 0,001	64,43	16,57	13,06	21,87	< 0,001
GNE	2274,86	516,29	791,53	814,44	< 0,001	2508,60	583,87	931,92	903,24	< 0,001
LABOR	30,75	7,99	7,84	10,60	< 0,001	30,87	8,04	8,02	10,64	< 0,001
GDS USD	568,92	137,84	270,49	216,32	< 0,001	629,09	160,35	306,06	241,63	< 0,001
GFLD no	691,82	191,88	370,69	267,04	< 0,001	721,68	210,63	349,71	274,05	< 0,001
GFLD	14,22	4,76	4,84	5,34	< 0,001	24,01	7,17	7,39	8,97	< 0,001
FDI Outflows USD	73,42	23,01	46,77	45,32	0,018	86,56	18,68	57,21	40,26	< 0,001
POLIT STAB	0,33	0,67	0,20	0,35	0,035	0,44	0,68	0,12	0,25	0,037

Annotation: M_{cluster} - mean in the analyzed cluster; M_{sample} - mean in the entire sample; SD_{cluster} - standard deviation in the analyzed cluster; SD_{sample} - standard deviation in the sample; p - p-value of the Student's t-test.

Source: own elaboration

¹ As a cluster Authors understand a group of countries that are similar in the context of chosen economic and socio-demographic indicators in relation to FDI inflows.

4.2.1. Cluster 1 Profile Characteristics in Relation to the Studied Parameters

Personal remittances (PERS REMIT) noticeably decreased from 2.39 to 2.19, with both results being significantly higher than the sample average ($p = 0.007$ in 2015-2018 and $p = 0.024$ in 2019-2022). This decrease may indicate a reduction in financial dependence on foreign remittances or changes in migration and economic policies.

Gross national expenditure (GNE) remained stable at a lower level compared to the sample average, with values of 164.24 in the first period and 162.37 in the second. These values were significantly lower than the sample average ($p = 0.022$ and $p = 0.014$, respectively).

The stability of these expenditures may suggest limited fiscal and investment capabilities of these countries in the face of external and internal economic challenges. The value of goods and services in USD (GDS USD) showed a slight decrease from 39.40 to 37.60, with a significant difference compared to the sample mean ($p = 0.016$ in 2015-2018 and $p = 0.007$ in 2019-2022). The decrease in these values indicates potential difficulties in maintaining national production growth or competitiveness in international markets.

Foreign direct investment outflows (FDI Outflows USD) were not recorded in the second period, indicating no significant differences of the analyzed cluster from the sample mean.

Internet access within the cluster increased from 75.86% in the first period to 83.78% in the second, although both values remained lower than the sample mean, but this difference decreased over time ($p = 0.008$ in 2015-2018 and $p = 0.005$ in 2019-2022). The improvement in internet access may indicate progress in technological infrastructure and greater digital integration.

The share of credits in GDP (DOM CREDIT) noticeably decreased from 57.55% to 54.28%, also significantly below the sample mean ($p = 0.002$ in 2015-2018 and $p = 0.001$ in 2019-2022). This trend may indicate constraints in the financial sector or a more cautious approach to borrowing in the face of economic uncertainty.

Population growth (POPUL GRWTH) remained negative in both periods, indicating demographic challenges such as emigration or low natural growth ($p = 0.001$ in 2015-2018 and $p = 0.004$ in 2019-2022). The negative growth significantly differs from the sample mean and may affect the country's potential economic growth.

Gross domestic product per capita (GDP per capita) increased from 18,231.22 USD to 20,804.80 USD, but still remains significantly below the sample mean ($p = 0.001$ in 2015-2018 and $p < 0.001$ in 2019-2022). Although there has been an improvement, these countries still struggle with income gaps compared to other countries in the sample.

Inflation data (INFL) appeared in the second period, with a level of 4.99%, higher than the sample mean ($p = 0.001$). High inflation can hinder economic management and reduce the real value of incomes.

The number of greenfield projects (GFLD no) significantly increased to 101.75, although still significantly lower than the sample mean ($p = 0.036$). This indicates some growth in direct investments, which can be a positive sign.

The value of goods and services as a percentage of GDP (GDS %) was 23.27%, lower compared to the sample mean ($p = 0.022$). This lower share may reflect weaker production capacity or lower economic efficiency.

In summary, countries in cluster 1 made progress in some areas such as internet access and economic growth, but still face numerous challenges including negative population growth, limited investments in new technologies, and high inflation. The factors that attract FDI to these destinations differ in analyzed periods. The FDI inflows are there currently determined by personal remittances, gross domestic expenditures, gross domestic savings, percentage of population using internet, domestic loans, population growth and GDP per capita. The new determinants for these countries in 2019-2022 also include annual inflation rate and number of greenfield investments. The FDI Outflows are not statistically significant in the second period analyzed.

4.2.2. Characteristics of Cluster 2 Profile Regarding Analyzed Parameters

Population growth (POPUL GRWTH) in both periods was higher than the sample mean, but there was a noticeable decrease from 1.16% in the first period to 0.95% in relation to the second period. Although both results are statistically significant, the decrease in population growth rate may suggest the maturation of the community or effects of a saturated job market.

Gross domestic product per capita (GDP per capita) shows a significant increase from 53,677.32 USD to 63,684.80 USD, indicating dynamic economic development of the cluster. This growth is significantly higher than the sample mean and in both periods characterized by low p-values, indicating statistical significance of differences. These changes may reflect effective economic policies, investments in infrastructure, or development of high-value-added sectors.

Internet access (INTERNET) increased from 88.00% to 92.96%, showing significant improvement in digital infrastructure and technology access. This growth is also statistically significant and exceeds the sample mean, indicating effective investments in information and communication technologies crucial for the modern economy.

Political stability (POLIT STAB), although still relatively high, shows a slight decrease from 0.97 to 0.90. This change is statistically significant and may indicate some challenges in managing countries that may have emerged in recent years. Despite the decrease, this value remains significantly higher than the sample mean, suggesting that the country maintains relative political stability despite potential obstacles.

The share of credits in GDP (DOM CREDIT) in the first period was significantly higher (111.64%) compared to the sample mean (80.71%), suggesting that the cluster's economy was much more dependent on credits. The decrease in this indicator to 95.71% in the second period, although still higher than the sample mean, indicates a reduced dependency on borrowing. This change, gaining statistical significance, may reflect changes in credit policy or structural transformations in the economy reducing the level of indebtedness.

The value of goods and services as a percentage of GDP (GDS %) increased from 33.38% in the first period to 36.00% in the second period, indicating growth in productivity and economic efficiency. Since this value is significantly higher than the sample mean, it can be inferred that this cluster continued to develop its production and service base. This growth is statistically significant and suggests active investments in economic sectors generating added value.

Inflation (INFL), although not available in the first period (indicating no differences from the sample mean), appeared in the second period with a value of 3.09%, lower than the sample mean of 4.01%. This value, although showing a slight difference, is statistically significant. Lower inflation, compared to the mean, may indicate price stability and effectiveness of monetary policy in the country, which is beneficial for maintaining the purchasing power of money and economic growth.

These results indicate positive changes in the structure and economic policy of cluster 2, which may contribute to long-term stability and growth. Decreased dependency on credits, increased productivity, and inflation control are elements indicating healthy economic development. According to the research results, countries in cluster 2 are attracted by FDI by following factors: population growth, GDP per capita, percentage of population using internet, political stability, domestic loans and gross national savings. Moreover, annual inflation rate, became a new factor that creates these destinations as attractive for foreign companies.

4.2.3. Characteristics of Cluster 3 Profile Regarding Analyzed Parameters

Data analysis for cluster 3 presented in Table 4 for the periods 2015-2018 and 2019-2022 shows continuity and stability in key economic and demographic parameters, indicating sustained development and economic performance of this cluster.

Total population (POPUL TL) shows minimal growth from 64.10 million to 64.43 million, indicating a stable population with limited demographic growth. This stability, with very low p-values in both periods, not only indicates demographic balance but also possible high urbanization and well-developed economic environment.

Gross National Expenditure (GNE), reflecting the overall level of economic expenditure, increased from 2,274.86 billion USD to 2,508.60 billion USD. This statistically significant growth significantly exceeds the sample mean, indicating increasing economic activity and increased investments, which may include both public and private expenditure.

The employment rate (LABOR) remained almost unchanged, increasing only from 30.75% to 30.87%, significantly exceeding the sample mean in both periods. The stability of this indicator in the context of GNE growth suggests that economic growth may be driven by labor productivity growth or by sectors with high capital demand, rather than increased employment.

The value of goods and services in dollars (GDS USD) increased from 568.92 billion USD to 629.09 billion USD, indicating an increase in the cluster's production and service capabilities. This parameter, showing an increase in the value generated in the economy, alongside increasing GNE expenditures, may suggest increased economic efficiency and

improved competitiveness of the cluster in international markets. The cluster mean significantly exceeded the sample mean.

It is worth noting that the number of GFLD (GFLD no) increased from 691.82 to 721.68, indicating increased activity in global financial flows originating from this cluster. The p-value in both periods is less than 0.001, indicating significantly higher values compared to the sample mean. The increase in this indicator may indicate that the cluster has become more active in the global financial market, which may be the result of developing financial infrastructure and policies supporting international expansion.

In the case of GFLD value (GFLD), the increase is even more pronounced – from 14.22 to 24.01. This significant increase, also statistically significant ($p < 0.001$), may indicate the investment attractiveness of particular destinations.

Foreign direct investment outflows (FDI Outflows USD) also show an increase from 73.42 to 86.56, confirming the trend of intensifying investment activity of the cluster abroad. This growth may indicate increasing economic strength of the cluster and a strategy of expanding global operations by companies within it. In both periods, the parameter value exceeded the sample mean.

In the context of political stability (POLIT STAB), we observe a slight improvement from 0.33 to 0.44, indicating a better perception of political conditions within the cluster. Although these values are lower than the sample mean, their increase, which is statistically significant ($p = 0.037$ in 2019-2022), suggests a gradual improvement in the perception of political stability, which may contribute to increased attractiveness of the cluster for investors.

In summary, cluster 3 demonstrates a consistent and stable dynamics in key economic and demographic parameters. Stable population levels alongside increasing domestic expenditures and the value of goods and services produced may indicate effective economic development strategies, fostering long-term stability and growth. This indicates efficiency in cluster management and the ability to adapt to changing economic conditions, which is crucial for maintaining competitiveness on the international stage. The determinants of FDI in these destinations are stable during the period analyzed and include: total population of the country, global domestic expenditures, labor market, gross national savings, number and value of greenfield investments, the FDI outflows and political stability.

5. Discussion and conclusions

The conducted research indicated that according to chosen parameters EU countries may be grouped in three clusters, similar in the context of chosen economic and socio-demographic indicators in relation to FDI inflows.

As research results show, despite economic changes caused by COVID – 19 pandemic and the Russo – Ukrainian war, the investment attractiveness of countries grouped within a given cluster has not changed significantly.

It is possible that the alterations caused by these events—including heightened investor uncertainty, supply chain disruptions, and geopolitical risks—are insufficient to substantially influence FDI destinations, or that the timeframe of these changes is relatively brief. Furthermore, multinational corporations may possess greater adaptability to fluctuating economic circumstances, and their connections with host nations, such as through greenfield investments, might be robust enough to offset the adverse consequences of these shifts. The Authors contend that the utilization of emerging investment opportunities, especially those tied to digitalization and security, could also bolster the investment appeal of individual EU member states.

In this article, the research is focused on general foreign capital flows. We cannot assume that there are changes in the forms of the capital invested what is recommended to analyze in the future research.

According to the Authors, a significant finding of the study is the observed differences in statistically significant parameters that constitute well-known determinants of FDI inflows into host countries. In individual groups of countries, defined for the purposes of this article as clusters, there is a specific set of factors determining FDI inflows, and they vary.

In countries belonging to cluster 1, there are significant differences in the set of factors determining FDI inflows between 2015-2018 and 2019-2022. Despite the fact that, under the influence of ongoing economic changes, there were no significant changes in the map of investment attractiveness (measured by chosen FDI determinants) of EU countries, within cluster 1 there were significant changes in the importance (determined by statistical significance) of factors that determine the investment attractiveness of these countries. This may be due to the fact that the economies of the countries belonging to cluster 1 are more susceptible to changes caused by COVID-19 and the Russian-Ukrainian war. The countries grouped within cluster 3: Spain, Germany, France, Italy, seem to be the most resistant to the impact of these events.

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