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## DIRECT FOREIGN INVESTMENTS AT EUROPEAN LEVEL. BIBLIOMETRIC AND COMPARATIVE ANALYSIS

Ionut Marius CROITORU, Cosmin Alexandru SPIRIDON,  
Florin Ionut BRATILOVEANU, Romanita JUMANCA

**Abstract:** Taking into consideration the current background and the challenges that the European economy is facing regarding the increasing levels of energy independence and climate neutrality achievement with the aim of increasing the well-being of the European population and implementing post-pandemic resilience programs, we believe that an important factor in achieving these goals is provided by direct foreign investments (DFI). For the economy to become efficient both at micro and macroeconomic levels, it is necessary to ensure its stability by attracting a large volume of DFI that will lead to sustainable economic growth, stabilization of inflation at several percentage points per year and the development and modernization of the real economy and public infrastructure. The research methodology implied the elaboration of a bibliometric analysis with a focus on a quantitative research method, in the form of an inventory of the previously published activity in the foreign direct investments field, elaborated by querying the database from the Web of Science platform. The query determined the display of a number of 101 scientific documents existing in the database, which contain the English phrase "foreign investments" in the title, abstract or keywords of the papers. The query was carried out on the 6th of July, 2023 and assumed the inclusion of publications from the past 6 years, 2017 – 2023, including articles published in EU countries and Great Britain. The results of the research confirm the moderate scientific interest in this field, showing that the data contained in the WOS have a Hirsch index of 15.

**Key words:** Foreign investments, quantitative research, Web of Science, VosViewer, bibliometric research.

### 1. INTRODUCTION

In Romania, foreign direct investments are made with the help of statistical research carried out by the National Bank of Romania. At the European level, the analysis of foreign direct investments is carried out due to various financial institutions that operate within the European economic space. As a result of the study carried out by Emerging Europe and the dates extracted from The UNTCAD for the period 2019-2022 we can see the level of direct investments within the European Union countries and the level of foreign direct investments per capita.

Analyzing the information in the Tables 1 and 2, we can see that in the years 2021 and 2022, Romania ranks second in terms of foreign direct investments in Eastern Europe with a value of 10,574 and 11,273 million dollars. But,

compared to Poland, which occupies the first place, the value of investments is approximately 2.6 times lower, this also being reflected in the level of the economy and in the well-being of the population.

Furthermore, if we look at the study on foreign direct investments per capita, we can observe that Romania occupies at the level of European Union the 17<sup>th</sup> place in 2022 with a value of 573 dollars/inhabitant, being below Poland which occupies the 14<sup>th</sup> place with a value of 739 dollars/inhabitant. If we look at the level of the country that are in the EU and are in the Eastern Europe Romania occupies the 10<sup>th</sup> place in 2022, being below Poland which occupies the 8<sup>th</sup>. Thus, we can see that the amount of DFI to be reflected at an appropriate level in the well-being of the population of the country where it is carried out must reach a

higher level where the population is more numerous.

Table 1

## DFI in 2019 -2022 [million of USD]

No	Country Name	2019	2020	2021	2022
1	Sweden	8.761	21.514	21.133	45.963
2	France	13.100	11.359	30.885	36.413
3	Spain	17.842	17.948	21.957	34.811
4	Poland	13.510	15.195	29.580	29.462
5	Italy	18.146	-23.622	-8.956	19.947
6	Romania	5.791	3.432	10.574	11.273
7	Germany	52.684	56.204	46.468	11.053
8	Czechia	10.108	9.411	9.051	9.853
9	Finland	13.456	-1.579	13.806	9.445
10	Portugal	12.251	7.683	9.615	9.099
11	Hungary	4.256	7.047	7.559	8.571
12	Greece	5.019	3.213	6.328	7.604
13	Cyprus	52.330	-24.451	-35.744	4.913
14	Denmark	27.029	1.685	4.681	4.494
15	Malta	3.778	3.921	4.116	4.240
16	Croatia	401	146	4.427	3.675
17	Slovakia	2.511	-2.404	59	2.905
18	Bulgaria	1.835	3.397	1.892	2.505
19	Lithuania	3.022	3.518	2.865	2.158
20	Austria	4.905	-9.351	13.494	1.947
21	Slovenia	1.463	220	1.773	1.622
22	Latvia	925	1.005	3.322	1.508
23	Ireland	149.433	76.572	-4.930	1.490
24	Estonia	3.083	3.419	-832	1.205
25	Belgium	11.861	6.805	11.587	-1.710
26	Netherlands	-1.140	-86.507	-77.453	-67.340
27	Luxembourg	163.718	9.839	25.123	-322.054

In the Table 3, the level of DFI reported at the volume of the GDP in Romania is at 3,78% in 2022 and 4,28% in Poland. At European Union level Romania is on the 7th place and Poland on the 6th, and if we look at the countries that are in the Eastern Europe Romania occupies the 4<sup>th</sup> place and Poland the 3<sup>rd</sup>.

This value shows that the percentage of DFI in GDP is influenced by a series of factors like: the level of development of the economy, the attractiveness of the economy, the state policies and the regional political and security context.

Table 2

## Distribution of DFI in 2019-2022 [per capita USD]

No	Country Name	2019	2020	2021	2022
1	Malta	7.502	7.609	7.815	7.950
2	Cyprus	59.335	-27.411	-39.724	5.413
3	Sweden	853	2.075	2.019	4.357
4	Finland	2.437	-285	2.494	1.705
5	Czechia	959	894	861	939
6	Croatia	97	36	1.090	912
7	Estonia	2.323	2.572	-626	909
8	Portugal	1.191	746	934	886
9	Hungary	436	723	778	860
10	Latvia	482	530	1.773	815
11	Lithuania	1.061	1.248	1.028	785
12	Slovenia	692	104	837	765
13	Denmark	4.664	289	800	764
14	Poland	351	395	772	739
15	Greece	475	306	606	732
16	Spain	379	379	462	732
17	Romania	297	177	547	573
18	France	196	170	462	543
19	Slovakia	460	-440	11	515
20	Bulgaria	260	487	275	369
21	Italy	304	-397	-151	338
22	Ireland	30.521	15.481	-989	297
23	Austria	552	-1.050	1.512	218
24	Germany	634	674	557	133
25	Belgium	1.030	589	998	-147
26	Netherlands	-66	-4.962	-4.425	-3.834
27	Luxembourg	264.072	15.607	39.296	-497.304

The data extracted from the statistics of UNCTAD, the evolution of the GDP in the countries from EU in the period 2019-2022. The biggest economy from EU occupies the first five places, the 6th place it is occupied by Poland and Romania occupies the 12th place. If we look at the GDP of the Eastern Countries from EU, Poland occupies the first place and Romania the second place, it is the same ranking like at the DFI. So, GDP evolution it is from some points of view in relation with the volume of foreign direct investments, but the impasse is more visible in the countries from European Union with small and less developed economies than in the case of countries with large and developed economies.

Table 3

## DFI percentage of GDP in 2019-2022, at EU level

No	Country Name	2019	2020	2021	2022
1	Malta	23,80	26,08	23,23	24,11
2	Cyprus	201,69	-97,77	-125,82	17,33
3	Sweden	1,64	3,93	3,32	7,80
4	Croatia	0,64	0,25	6,42	5,21
5	Hungary	2,60	4,48	4,16	5,14
6	Poland	2,27	2,53	4,35	4,28
7	Romania	2,31	1,37	3,72	3,78
8	Portugal	5,11	3,35	3,79	3,61
9	Latvia	2,69	2,90	8,34	3,56
10	Greece	2,45	1,70	2,95	3,46
11	Czechia	4,00	3,83	3,21	3,40
12	Finland	5,01	-0,58	4,64	3,34
13	Estonia	9,92	10,90	-2,24	3,10
14	Lithuania	5,52	6,19	4,31	3,05
15	Bulgaria	2,66	4,84	2,25	2,81
16	Slovenia	2,69	0,41	2,87	2,60
17	Slovakia	2,37	-2,25	0,05	2,56
18	Spain	1,28	1,41	1,54	2,49
19	France	0,48	0,43	1,04	1,30
20	Denmark	7,80	0,47	1,18	1,15
21	Italy	0,90	-1,25	-0,42	1,00
22	Austria	1,10	-2,15	2,81	0,41
23	Ireland	37,42	17,98	-0,98	0,29
24	Germany	1,35	1,44	1,09	0,27
25	Belgium	2,21	1,30	1,95	-0,30
26	Netherlands	-0,13	-9,51	-7,65	-6,78
27	Luxembourg	234,47	13,30	29,38	-387,07

Table 4

## Evolution of GDP in 2019-2022 [USD]

No	Country Name	2019	2020	2021	2022
1	Germany	3.888.226	3.889.669	4.259.935	4.077.087
2	France	2.736.254	2.645.748	2.966.476	2.793.561
3	Italy	2.011.302	1.896.755	2.107.703	2.004.615
4	Spain	1.394.320	1.276.963	1.427.381	1.399.740
5	Netherlands	910.194	909.793	1.012.847	992.929
6	Poland	596.058	599.443	679.442	688.295
7	Sweden	533.880	547.054	635.664	589.409
8	Belgium	535.831	525.212	594.104	579.241
9	Ireland	399.322	425.852	504.183	511.365
10	Austria	444.621	435.225	480.368	469.950
11	Denmark	346.499	355.222	398.303	391.696
12	Romania	251.018	251.363	284.086	298.477
13	Czechia	252.548	245.975	281.778	289.969
14	Finland	268.515	271.892	297.302	282.829
15	Portugal	239.987	229.032	253.663	251.778
16	Greece	205.257	188.926	214.874	219.635
17	Hungary	163.989	157.182	181.848	166.661
18	Slovakia	105.720	106.697	116.527	113.472
19	Bulgaria	68.914	70.239	84.058	89.153
20	Luxembourg	69.826	73.993	85.506	83.204
21	Lithuania	54.752	56.847	66.445	70.751
22	Croatia	62.328	57.472	68.955	70.553
23	Slovenia	54.332	53.707	61.749	62.481
24	Latvia	34.344	34.602	39.854	42.337
25	Estonia	31.082	31.370	37.191	38.906
26	Cyprus	25.945	25.008	28.408	28.353
27	Malta	15.872	15.036	17.721	17.583

DFI are an important tool which is used for the development of the economy and therefore the identification of their determinants should be viewed with great care. The identification of new determinants must be looked at very carefully because they could be providing a competitive advantage in the economy. "In the present situation of the post-pandemic crisis ... DFI must become a concern due to the fact that these investments can be an important source of taxes and income for the local budget, an important source of jobs for the local community and also a relevant aspect that can mitigate migration" [1-5].

## 2. LITERATURE REVIEW

According to the OECD, DFI is "a category of investments that reflects the objective of establishing a long-term interest by an enterprise resident in an economy (direct investor) in an enterprise (direct investment enterprise), which is resident in an economy other than that of the direct investor. A long-term interest regards the existence of a long-term relationship between the direct investor and the direct investment undertaking and a significant degree of influence over the management of the undertaking. "The placement of capital and its materialization in industrial, transport, agricultural, construction companies, etc., provides foreign investors with the opportunity to make decisions and the right

to control the project at the level of management, technology, marketing, etc.” [5].

During the 20<sup>th</sup> century, economists considered that the vector of performance, at the microeconomic level, and of growth and competitiveness at the macroeconomic level, is represented by investments in physical capital and infrastructure. The basic idea was that a country's growth rate depends on the investment-oriented share of GDP. The facts have shown that investments in physical capital are not sufficient to ensure economic progress and investments in “human capital” and “intellectual capital” are necessary to be made by increasing the level of education and continuous training, investments in scientific research, opening markets and achieving the global knowledge transfer system.

To capture the evolution of foreign direct investment we should highlight the motivational factors that can influence the volume of foreign direct investment in a country. In some countries, these factors represent significant economic benefits. Such nations have been able to make use of DFI and have significantly improved their living standards. Given the extensive risk systems, competitiveness for foreign investors is at the center of their attention. The foreign direct investment decision is a progressive one and the main interest is to invest in research [1].

A society based on cultural diversity must therefore invest primarily in education, health care and other programs of a social nature. The key principle that must govern in modern societies is based on investment policies, private or public, that should allow and favor a predicted investment in human, social and educational capital. Education and implicitly the investment in education must constitute key components to ensure a genuine long-term human development.

“Building an information society cannot be achieved without research and investment projects, both in the field of IT&C and in the field of education. The final target being competence, no technology, no theory, no approach will eliminate or neglect the teacher-pupil/student relationship. All of them will be convenient and efficient tools at hand, both for the teacher and the student. Sometimes these

tools can be unique to traditional education tools.” [14].

The purpose of any investment, regardless of the profile of economic activity, is represented by the achievement of a secure long-term income, and the entrepreneur's objective is the recovery of the allocated financial resources and the appropriate remuneration of the shareholders in the form of dividends.” At the time of globalization, the business environment of a country significantly affects the success of domestic businesses, respectively their products, on foreign markets. Also, the business conditions of a state influence its attractiveness for potential foreign investments” [4].

In the investment process, time management is very important, or how long it takes to recover the allocated financial resources in real terms, that is, considering the inflation rate. The ratio between the effort allocated to the realization of an investment process, i.e. the value of the allocated financial resources and the effect realized in revenue and profit, represents the economic efficiency of an enterprise. The field in which they are carried out is also important. Entrepreneurs as managers are able to recognize a number of external factors that have a positive impact on their business, including rising demand for their products both domestically and internationally, modernizing infrastructure, financing opportunities, easier access to loans, competitive interest rates, higher-quality raw materials, modern production techniques and technologies, rising purchasing power of the populace, and favorable changes in laws and regulations [2].

The financial management of the company, another component in attracting foreign investments, must communicate by means of financial reports with outsiders and, depending on their expectations, “the strategy regarding the content of publishing the financial statements and making them available to the outside environment is established. Companies that fully understand the importance of quality financial reporting, including transparent ones, are also able to understand the needs of their investors and their business psychology. Here are the strategies developed when it comes to seeking resources for new investments: knowing what potential investors the company needs, they are

given exactly the palette of information they want to have access to, ultimately leading to the achievement of the company's goals and strategy. If the potential investors did not have all the data and the reporting was opaque, non-transparent, the risk of the investment would increase, the end being the failure to complete the transaction and the failure to attract capital necessary for the development of the enterprise” [6] (supported also by [7,8]).

“The sustainability of investments is reflected more and more in different approaches and strategies of enterprises, especially in those enterprises located in the western countries of the European Union. It is not always easy to find total agreement between definitions of sustainability, but it is clear enough that it also includes the relationships between businesses with the natural environment, various social causes and corporate governance. The sustainability of enterprises generates a plus for the sustainability of the entire economic and social system. That is why all businesses must consider the economic, environmental and social impact. This means that businesses need to adapt their business models and decide to invest in actions that will benefit the environment and society, while ensuring long-term business sustainability” [3].

Investments, research and development can be seen as a stimulus - among the most important stimuli in economic activity. In an economic business, investments in research and development play the role of an impulse, a generator that gives birth, carries out and develops the activity. Benefits over rivals may be from lower expenses or from distinction (technical, qualitative, etc.). Investing in research and development and utilizing cutting-edge manufacturing technology often yields the most significant benefits, including low cost and distinction. The impacts of identified solutions on cost levels, as well as their sustainability and efficacy, are often lessened when their costs fall [13].

The number and size of companies that invest, produce and sell worldwide is in continuous growth, giving rise to transnational business networks and market structures specific to global oligopolies.

Depending on the size of the activity, multinational corporations are, as a rule, very large, gigantic companies, but also smaller enterprises, but very important in a specific activity field.

The capital of these companies is multi or plurinational; it consists mainly of direct foreign and portfolio investments, which also attract local capital from the countries where subsidiaries are created. Porter believed that the business is composed of a variety of activities, some of which are complimentary and help with coordination, and others of which are productive and add value to output [9].

Investments in software applications, networks, and computers provide several benefits for the business. They also impact user capabilities and add new assets to the organization. These:

- Allow for the decentralization of decision-making authority and guarantee increased employee autonomy;
- Call for leadership and compromise from management; and
- Determine the growth in opportunities for collaboration between various stages, which are the foundation of value creation.

To optimize the return on information technology investments, it is necessary to reorganize the key components that determine the business's structure, including human resources, work organization, and relationships with suppliers and customers.

### **3. RESEARCH METHODOLOGY**

Taking into consideration the development of electronic databases regarding the preservation and archiving of scientific works, the facility for the access of a growing number of interested persons from several areas and fields of research to analyses, compare and interpret scientific research has become a normality. Thus, in the process of scientific research, new information, new points of view and new areas of research or reinterpretation are generated depending on the experiences and the degree of knowledge of the researched fields of the authors of scientific articles.

PRISMA Statements methodology was applied for this research. The following five steps have been followed [8]: (1) data search strategy; (2) collecting data by applying tags; (3) data filtering by applying Web of Science filters; (4) quantitative analysis supported by Word art and VosViewer softwares; (5) results and conclusions by data process and interpretation. The bibliometric research results consists of graphical representations and statistical data process results to demonstrate and characterized the state of foreign direct investment [10-12, 16].

The first query of the Web of Science database for the tag “foreign investments” yielded 1295 articles. Considering the presentation made in the previous chapters, a first filter was that the articles be Open access. Only 345 articles have this feature. We chose this filter because we wanted to have access to the content of all articles for free in order to be able to observe how investments are treated within the articles even if applying the filter may miss some important aspects of the topic covered. Analyzing the number of articles by year we noticed a significant increase from the year 2017. Also, even though we are in the middle of 2023, we decided to count this year as well because the articles published this year have novelty and have a large number of citations of articles published in previous years (123). Thus, the new filter applied was represented by the period 2017-2023 and resulted in a number of 267 articles. Considering that we want to analyze the financing of education at the level of the EU, we selected the EU countries and UK because it is no longer part of the EU as of January 31, 2020, and until that date it was part of the European strategies, and the economy from this country has strong ties with other economies in the EU states. After applying this filter, a number of 101 articles resulted. With this number of articles, bibliometric analysis was undertaken [15].

Using the word cloud as a starting point, a preliminary comparison analysis was conducted to determine which terms are often associated with “foreign investments”, following the article titles, abstracts, author keywords, and keywords plus.

Table 5  
Keywords and filters used when querying Web of Science

Filter applied	Item number in the selection
Keywords “foreign investments”	1295
Filters Open access	345
Filters Publication years 2017-2023	267
Filters EU countries and Great Britain	101

Table 6  
Distribution of the 101 articles from WoS query,

Year	2023	2022	2021	2020	2019	2018	2017
Number articles	4	14	20	15	22	16	10

Using the WOSviewer program, a second analysis was performed to determine the frequency of terms or phrases used in the chosen articles. Co-occurrence, author keywords, fractional counting, and minimum two occurrences were the filters I used.

Following this, the bibliometric analysis and density analysis were discussed. These were conducted based on various factors such as the year of publication, the country of publication and the number of articles published within it, affiliation, funding organization, number of articles per author, and number of citations of the scientific articles included in the selection. For this choice, the Hirsch Index (h) value is 15. As part of outlining the process, we considered important to discuss the financing and publishing density situation as well as the criteria we utilized to create bibliographic linkages.

Using the data produced from the Web of Science database, the WOSviewer program created a map showing the density of citations between authors; the analysis type Bibliographic coupling and the analysis unit Authors and documents with at least two authors has been considered relevant for this research.

#### 4. RESULTS

A first query of the Web of Science database for the tag “foreign investments”, without filters, resulted in 1295 articles. As our intention is to analyze the articles in the work, the first filter was “open access” and 345 articles remained. We limited the study period to be between 2017



their funding, and the hierarchy of the first 4 is represented in Table 8.

From this analysis regarding the source of funding, one can notice that the states that financed articles through various institutions are also the first in terms of the number of articles and authors.

By means of the, we have analyzed the links regarding the authors' citations within the selection of the 76 articles using the authors of the articles as the unit of analysis. The filters applied were a minimum of 2 articles per author and a minimum of one citation.

The level of links between the articles in the sample, for the first 5 articles, is presented in Table 9.

Table 7

Affiliations	Record
N8 Research Partnership	10
University of London	6
White Rose University Consortium	6
Loughborough University	3
University of Amsterdam	3
University of Sheffield	3

Table 8

Funding Agencies	Publications
Uk Research Innovation	4
Economic Social Research Council	3
European Research Council	3
Scientific Grants Agency of the Ministry of Education, Science, Research and Sports of the Slovak Republic and the Slovak Academy of Sciences (VEGA)	2

Table 9

No crt	Authors	Affiliation	Articles	Citations	Total link strengt h
1	Appiah - Kubi, Seth Nana Kwame	Czech University of Life Sciences Prague	2	4	15
2	Gebeltova Zdenka	Czech University of Life Sciences Prague	2	4	15
3	Maitah Mansoor	Czech University of Life Sciences Prague	2	4	15
4	Malec Karel	Czech University of Life Sciences Prague	2	4	15
5	Phiri Joseph	Czech University of Life Sciences Prague	2	4	15

It is noted that the first 5 authors in terms of number of citations are affiliated with the Czech University of Life Sciences Prague. Analysing the articles, it can be seen that these authors collaborated in writing the article "Impact of Tax Incentives on Foreign Direct Investment: Evidence from Africa" which has 4 citations and has the strongest links according to the VOSviewer program.

Figure 4 shows the links between the authors and most of the articles in our selection. This graph is made with the help of the VOSviewer software.

The 101 articles have a Hirsch Index (h Index) of 15, and they have been mentioned 871 times. The following are the citations for the first four articles. The graph created by Web of Science, which combines the quantity of papers and citations, is shown in Figure 5.

From the analysis of the results regarding the number of articles per year, we cannot draw a conclusion regarding their writing trend, but we can see that from the point of view of citations, there is an increase in interest in citing the articles from our selection.

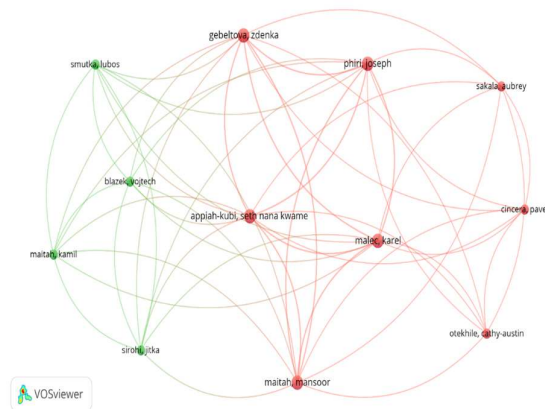


Fig. 4 Circular references on author citations obtained from the WoS query.

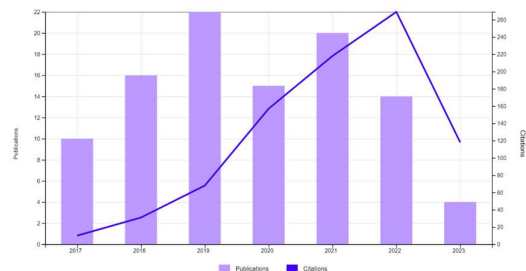


Fig. 5 Number of articles and citations.



## 5. CONCLUSIONS

DFI are an engine concerning the development and growth of the performance of an economy, the higher the level of investments, the more efficient and effective the economy of the country where they operate. Thus, the analysis of the flow of DFI has revealed the fact that in 2022 Romania attracted DFI worth 11.2 billion dollars, an increase compared to 2021 when the value of the investments attracted was 10.5 billion dollars and compared to 2018 when it attracted \$6.2 billion in funding. Poland in 2022 attracted foreign direct investment of 29.4 billion dollars, ranking first as in 2021 when it attracted a value of 29.6 billion dollars, increasing compared to 2018 when it attracted funding of 16 billion dollars.

DFI cannot be made within the economy of a country without the support of firms and companies operating in that country and without making direct investments there. The higher the volume of investments in a company, the more will the company be able to achieve a higher degree of research and development, technology, economic performance and effectiveness, and last but not least, it will generate added value in the economy in which it acts ultimately leading to an increase in the well-being of the population.

The data regarding DFI have been mainly obtained through direct statistical research carried out by the authors of the article by means of accessing the existing information at the level of the World Bank, the National Bank of Romania and the studies carried out by the Emerging Europe association.

Its limitations must be noted to accurately assess the bibliometric analysis's findings in this article. Initially, Web of Science data was the sole platform used for the study; hence, further research should look at databases like Dimensions or Scopus. Second, even though this study included both quantitative and qualitative evaluations, certain scientific publications were removed by the filters, which means we could overlook crucial details.

Because the authors wanted to view the content of every item in the selection, they applied the Open access filter, which resulted in

the exclusion of 948 articles. Thus, bibliometric maps may be used to display networks of co-authors, co-words, correlations between membership groups, and other information beyond the scope of the current research. To do a fresh analysis, the Open access filter might instead be eliminated.

The presented study is a preliminary one of larger research, and the team that has written this article intends to deepen both the part concerning DFI and their role in increasing the well-being of the population at the level of the countries where they are made and as well as at the European and global level.

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### Investițiile străine directe la nivel european. Analiză bibliometrică și comparativă

*Având în vedere realitățile actuale și provocările pe care economia europeană le parcurge privind creșterea nivelului de independență energetică și atingerea neutralității climatice cu scopul creșterii bunăstării populației europene și implementării programelor de reziliență postpandemică, considerăm că un factor important în realizarea acestor deziderate este oferit de investițiile străine directe. Pentru ca economia să devină performantă atât la nivel micro și macroeconomic este necesară asigurarea unei stabilități prin atragerea unui volum mare de investiții străine directe care vor duce la o creștere economică durabilă, la stabilizarea inflației la câteva procente pe an și la dezvoltarea și modernizarea economiei reale și a infrastructurii publice. Metodologia cercetării a presupus elaborarea unei analize bibliometrice, o metodă de cercetare cantitativă, sub forma unui inventar al activității de publicare în domeniul dezvoltării învățământului superior, fiind elaborată prin intermediul interogării bazei de date din platforma Web of Science. Interogarea a determinat afișarea unui număr de 101 de documente cu caracter științific existente în baza de date, ce conțin sintagma în limba engleză „foreign investments” în titlul, rezumatul sau în cuvintele cheie ale documentelor. Interogarea a fost efectuată la data de 6 iulie 2023 și a presupus includerea publicațiilor din ultimii 6 ani, 2017 – 2023, incluzând articolele publicate în țările UE și Marea Britanie. Rezultatele cercetării confirmă interesului științific moderat pentru acest domeniu, reieșind că datele cuprinse în WOS au indice Hirsch de 15.*

**Ionut Marius CROITORU**, As. PhD, Faculty of Entrepreneurship, Business Engineering and Management – FAIMA, University of Science and Technology POLITEHNICA Bucharest, Splaiul Independentei Str., Bucharest, Romania, [ionut.croitoru0208@upb.ro](mailto:ionut.croitoru0208@upb.ro)

**Cosmin Alexandru SPIRIDON**, Assoc. Prof., PhD, The Faculty of Economics and Business Administration, West University of Timisoara, 16 J.H. Pestalozzi Street, 300115, Timis, Romania, [cosmin.spiridon@e-uvt.ro](mailto:cosmin.spiridon@e-uvt.ro)

**Florin Ionut BRATILOVEANU**, PhD, Ministry of Education, The Intermediate Body for the Human Capital Operational Program (OI POCU), 78-80 Clucerului Str., 011368, Bucharest, Romania [florin.bratiloveanu@oi.edu.ro](mailto:florin.bratiloveanu@oi.edu.ro)

**Romanita JUMANCA**, Assoc. Prof., PhD, University of Medicine and Pharmacy Timisoara, 2 Piața Eftimie Murgu, 300041 Timisoara, Romania, [romanita.jumanca@umft.ro](mailto:romanita.jumanca@umft.ro)