The Impact of Non-Reimbursable European Funds in Romania on Gross Domestic Product

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Abstract. *The paper represents an analysis of the access to non-reimbursable European funds in Romania, at the level of January 2024. The analysis is carried out at the territorial level, in all 41 counties in Romania, to which the Municipality of Bucharest is added. In order to determine the efficiency of the use of these funds, a correlation was made between the level of the Gross Domestic Product (GDP), as the main macroeconomic aggregate that measures the level of development and the value of the non-reimbursable European funds accessed by Romania in January 2024. The correlation shows a direct and strong link between the two variables, at each county level.*

Keywords: non-reimbursable European funds, Gross Domestic Product, absorption, efficiency

Introduction

Non-reimbursable European funds provide opportunities for the financing of investments by public authorities, local public authorities, public institutions, as well as private institutions. Each programming period has a duration of seven years and three years are added to implement and complete projects.

It is important to analyze the impact of the use of these funds and identify the most competitive counties in order to ensure the goals of economic growth and the creation of jobs, considering the amounts allocated to Romania during each programming period. Economic and territorial cohesion is the objective and priority of the European Union. In order to achieve this objective, the European Union is providing significant amounts through several European funds for regional development policies, social policies, common agricultural policies and fisheries policies etc.

In order to ensure a sustainable development of the member states, it is not only necessary to allocate significant amounts for each of the previously mentioned policies, but it is also important to constantly evaluate the absorption capacity of non-reimbursable European funds. According to Oprescu et.al. absorption capacity represents the degree to which a country is able to effectively and efficiently spend the financial resources allocated from the Structural Funds. This definition shows both the role of the state in the efficient allocation of financial resources, according to priorities and eligible areas, but also the role of the beneficiaries of these funds.

The absorption capacity of the member states is influenced by endogenous and exogenous factors. Among the endogenous factors we mention: the administrative capacity of each state, the financial capacity of each state to ensure national co-financing, the capacity of the beneficiaries to ensure private co-financing, etc. Among the exogenous factors that influenced the absorption capacity of non-reimbursable European funds by the member states are COVID-19 pandemic followed by the war in Ukraine in the 2014-2020 programming period (European Parliament, 2023)

According to the same study, only two states register a degree of absorption of non-reimbursable European funds from the period 2014 - 2020, higher than that from the period 2007 - 2013, respectively the Czech Republic, Hungary and Romania.

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Literature review

The Cohesion Policy together with the Common Agricultural Policy represent the two largest spending areas, responsible for more than 60% of the EU budget (De Groen et. al., 2021).

Considering the large share in the budget of the European Union, it is essential to update the monitoring systems, both from the point of view of the legal and correct use of non-reimbursable European funds, but also of the efficiency of using these funds, in order to fulfill the purpose of economic and social cohesion for all member states from European Union. The main advantage of EU funds is that they represent financial resources that do not need to be repaid and are part of the total investment, thereby directly influencing the economic growth of a certain country (Vukašina et al. 2022).

However, according to (De Groen et. al., 2021) the error rate of non-refundable European funds reached a still high threshold of 2.7% in 2019, at the level of the entire EU, above the maximum 2.0%, that the The European Court of Auditors (ECA) considers it acceptable to fully approve the expenditures (European Court of Auditors, 2019). The rate of disengagement of non-reimbursable European funds consists, for the most part, of the amount of expenses declared ineligible and the violation of the rules regarding the public procurement regime (European Court of Auditors, 2019).

The European Funds represent a major advance in supporting the EU in its strategy for smarter, more sustainable, and inclusive growth in the periods 2000–2006, 2007–2013 and 2014–2020, as programs contemplate a series of challenges to the EU in terms of promoting the recovery of jobs, dealing with environmental problems and climate change, counteracting persistent educational gaps, and fighting poverty and social exclusion (Gomez-Gallego et. al., 2021). The same authors mention that a closer link is therefore generated with European economic governance, support for institutional capacity and a youth employment initiative.

The European Union has long been implementing a cohesion policy through specific centralized instruments, such as structural funds, with the aim of addressing imbalances that could be advantageous to some regions in the central region of the continent, while disadvantaged regions.

For the 2014-2020 programming period, ESI Funds have been allocated EUR 454 billion to jump-start economic growth and job creation. If we consider the national co-financing, estimated at around EUR 183 billion, the total value of investments will amount to at least EUR 637 billion (European Commission, 2015).

Efficient absorption of EU funds ensures that resources are allocated optimally and used effectively to address sustainable development priorities, thus this can lead to positive economic growth, job creation, and improved living standards for citizens (Šostar et al., 2023). The purpose of non-reimbursable European funds is to generate economic growth through investments and to generate jobs. The general economic context in which Romania is in this period of prolonged crisis should determine an absolute priority regarding the absorption of non-reimbursable external funds (Cocoșatu C., 2015).

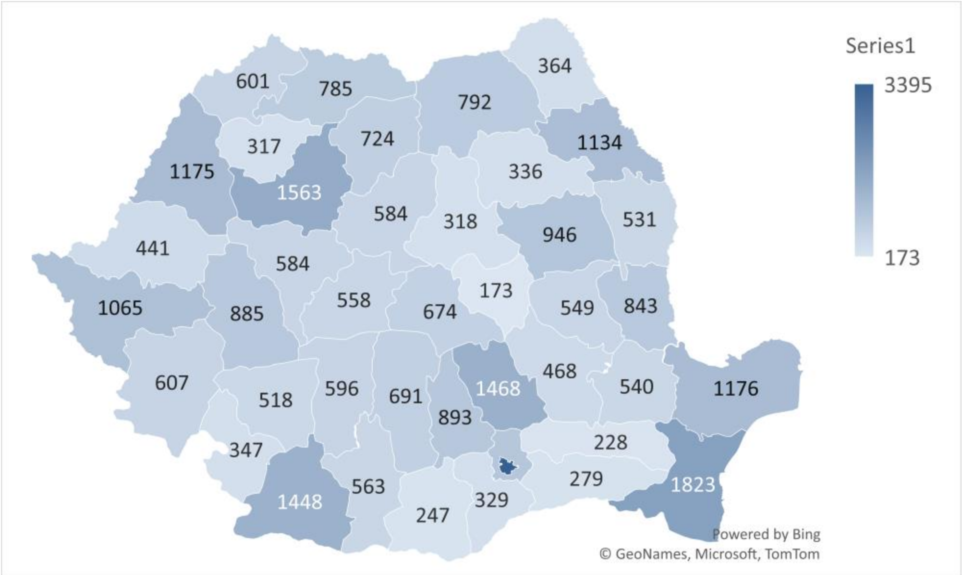
Methodology

The research hypothesis is related to the fact that access to non-reimbursable European funds must directly influence the gross domestic product and the research question is the following: "What is the contribution of non-reimbursable European funds to the formation of the gross domestic product?".

In order to determine the contribution of non-reimbursable European funds to GDP, the paper uses statistical analysis through a regression function, having the two variables available at the level of all counties of the country. The main source for the database for the value and number of the implemented projects is represented by MySMIS, which is an opened initiative that collects information regarding the implemented projects by county, operational program, year of approval, etc. The main source for the value of Gross Domestic Product is represented by The National Commission for Strategy and Prognosis, an initiative of the Romanian Government that has as main attribution to develop prognosis regarding the socio-economic development of Romania. For the analysis we have also used data from the National Institute for Statistics.

Results and discussions

Of the total European funds allocated, in the period 2014 - 2020, respectively 36.01 billion Euros, Romania records an absorption rate, depending on the amounts paid, of 89.41%, on January 1, 2024. According to the Ministry of Investments and European Projects, during this period, 9 operational programs were implemented, respectively: Large Infrastructure Operational Program (9.323 billion Euros), National Rural Development Program (9.137 billion Euros), Regional Operational Program (6.299 billion Euros), Human Capital Operational Program (4.622 billion Euros), Competitiveness Operational Program (2.147 billion Euros), Administrative Capacity Operational Program (563.6 million Euros), Assistance to Disadvantaged Persons Operational Program (460.8 million Euros), Operational Program for Fisheries and Maritime Affairs (96.31 million Euros), Technical Assistance Operational Program (319 .5 million Euro).

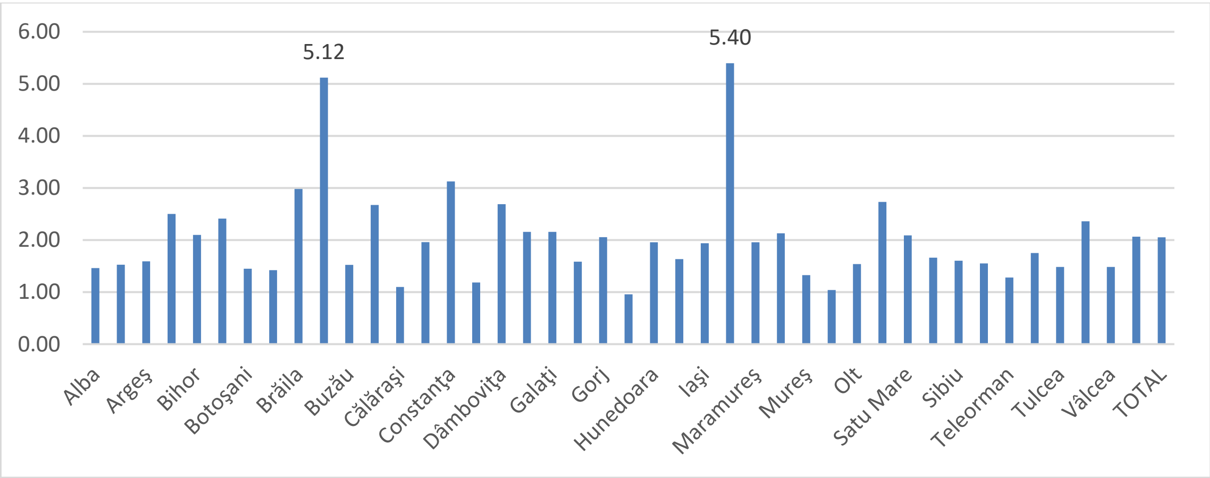


Graph 1. Distribution of the value of projects financed from non-reimbursable European funds, contracts on 01.01.2024 (mil. Euro)

Source: data processing Ministry of Investments and European Projects, *MFE 2014-2020 - Date MySMIS2014 (APEX) (fonduri-ue.ro)*

The contracted value of the projects financed by European funds, at the Romanian level, is 32.47 billion Euros, for a total number of 15,832 projects, on January 1, 2024. The average value of the contracted projects, at the national level, is 773 million Euro.

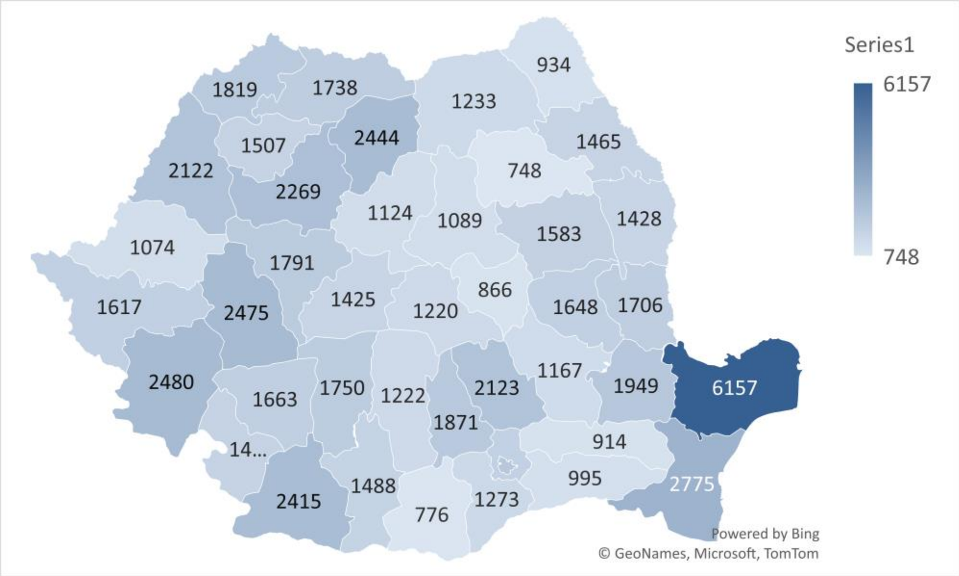
The highest value of the projects is registered in Bucharest, of 3.396 billion Euros. The counties that register the highest values of contract projects are the following: Constanța, Cluj, Dolj, Tulcea, Bihor and Iași. The counties that register the lowest value of the projects are the following: Teleorman, Călăraşi, Harghita, Giurgiu, Mehedinți, Neamț, Botoșani.



Graph 2. The average value of projects financed by non-reimbursable European funds, on January 1, 2024

Source: data processing Ministry of Investments and European Projects, *MFE 2014-2020 - Date MySMIS2014 (APEX) (fonduri-ue.ro)*

At the national level, the average value of a project is 2.05 million Euros. The highest average project values are recorded in Ilfov, 5.40 million Euros/project and Bucharest with 5.12 million Euros/project. The lowest average value is recorded in Harghita, 0.96 million Euro/project and Neama with 1.04 million Euro/project.



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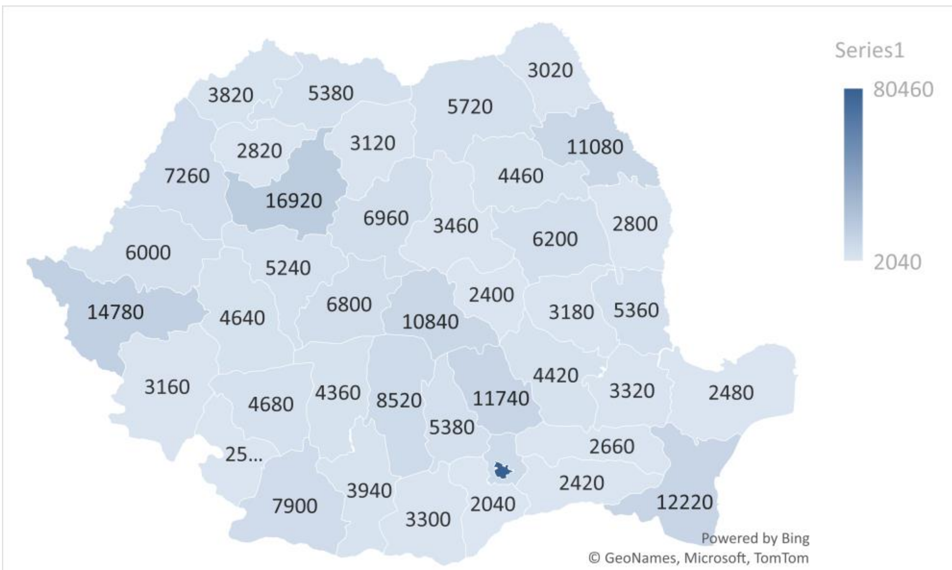
Graph 3. The value of non-refundable European funds accessed in Romania per person, on January 1, 2024 (Euro/person)

Source: data processing Ministry of Investments and European Projects, [MFE 2014-2020 - Date MySMIS2014 (APEX) (fonduri-ue.ro)]() and Romanian National Institute for Statistics

The average value of the contracted projects was calculated by relating the value of the contracted projects to the population of each county. At the national level, the average is 1701 Euro/person. The analysis of this indicator shows that the counties with the highest values are the following: Tulcea, Constanța, Caraș-Severin, Dolj, Bistrița-Năsăud, Cluj, Prahova.

At the opposite pole, the following counties are: Teleorman, Neamţ, Ialomița, Călăraşi, Botoșani. It can be observed that the counties that register the lowest values are predominantly focused on agricultural activities and are located in two regions, respectively North-East and South-Muntenia, regions that obtain a GDP per inhabitant among the lowest in the entire European Union.



Graph 4. Romania's Gross Domestic Product, in 2023 (mil. Euros)

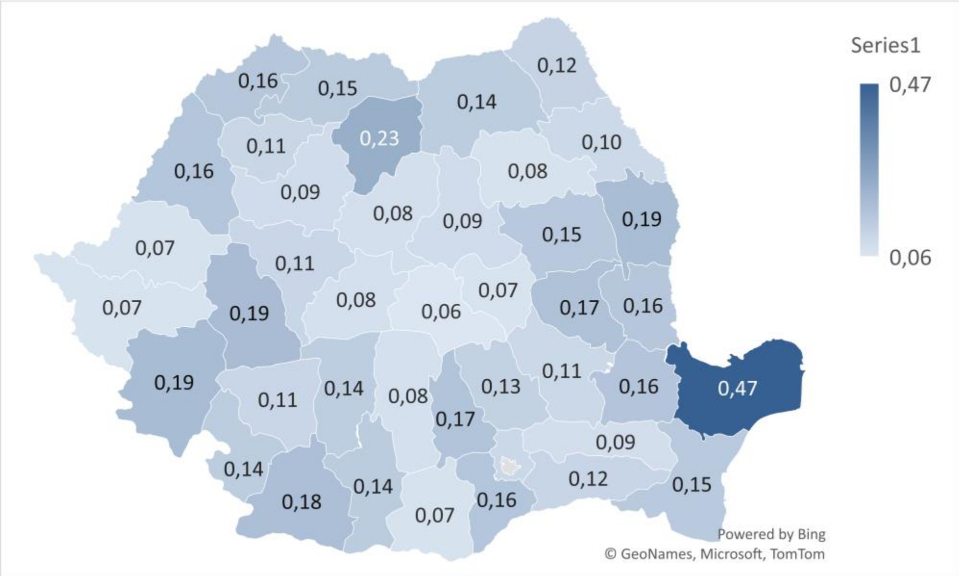
Source: data processing National Commission for Strategy and Prognosis

The GDP is the main measurement indicator of the national economy and is defined as the value expression of all goods and services produced in the economy at a given time. The value of the GDP estimated for the year 2023, at the level of the national economy, is 316.7 billion Euros. In terms of territory, the highest value of GDP is registered in the Municipality of Bucharest, of 80,460 million Euros, which represents a value more than 10 times higher than the national average.

The lowest value is recorded in Giurgiu county, with 2,040 million Euros. Of the 41 counties, to which the municipality of Bucharest is added, only 10 exceed the national average, of 7,535 million Euros, respectively: Bucharest, Cluj, Timiş, Constanţa, Prahova, Iaşi, Braşov, Ilfov, Argeş, Dolj . The rest of the 32 counties register a GDP below the national average, 15 of which register a GDP less than half of the national average. The development gaps between the 41 counties to which the Municipality of Bucharest is added are very large. Therefore, it is considered that access to non-reimbursable European funds is influenced by the financial and institutional capacity of local public bodies.

However, we believe that access to non-reimbursable European funds registers a direct connection with the level of development of each county, but at the same time, access to non-reimbursable European funds generates economic growth and jobs for these areas.

Areas that have a lower standard of living also have limited possibilities to submit and implement projects financed by non-reimbursable European funds because they require financial resources to ensure co-financing, but also human resources through specialized personnel trained in the submission and implementation of projects.



Graph 5. The share of non-refundable European funds accessed on 01.01.2024 in Gross Domestic Product, in Romania (%)

Source: data processing National Commission for Strategy and Prognosis and Ministry of Investments and European Projects, *MFE 2014-2020 - Date MySMIS2014 (APEX) (fonduri-ue.ro)*

The share of non-refundable European funds was calculated as a ratio between the total value of European funds attracted by each county, from the 2014-2020 programming period, at the level of 01.01.2024 and the value of the gross domestic product, from the year 2023, at the level of each county. At the national level, on average, the share of non-refundable European funds stands at 13.56%. This weight reflects an absorption capacity of non-reimbursable European funds that are at different levels, being directly related more to the level of development than to the needs of the counties, with few exceptions.

Among these exceptions, we mention the county of Tulcea, which, although it records a gross domestic product among the lowest in the country, nevertheless, the share of non-refundable European funds in the gross domestic product is the highest in the country, respectively 47.42%, which represents an example of success. At the opposite pole, there is Brașov county, which registers a gross domestic product five times higher than Giurgiu county, but the share of non-reimbursable European funds in the gross domestic product is only 6.22%.

Considering the specificity and objective of the cohesion policy, that of ensuring socio-economic cohesion, through the harmonious development of all areas of a country, absorption capacity, which involves the implementation of projects that will generate economic growth and jobs, should to be higher in the counties with the biggest development gaps.

The correlation between the Gross Domestic Product and the Value of non-reimbursable European funds used

The main source for the database for the value and number of the implemented projects is represented by MySMIS, which is an opened initiative that collects information regarding the implemented projects by county, operational program, year of approval, etc.

The main source for the value of Gross Domestic Product is represented by The National Commission for Strategy and Prognosis, an initiative of the Romanian Government that has as main attribution to develop prognosis regarding the socio-economic development of Romania. In order to avoid the errors, we have eliminated Municipal Bucharest, taking into account that the value of the GDP is 10 times higher than the mean value for Romania. After this filtering, the database consists of 41 observations.

Regression Statistics	
Multiple R	0,750513
R Square	0,56327
Adjusted R Square	0,552072
Standard Error	2387,781
Observations	41

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2,87E+08	2,87E+08	50,29997	1,6E-08
Residual	39	2,22E+08	5701498		
Total	40	5,09E+08			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	913,7889	778,0817	1,17441	0,24735	-660,03	2487,608	-660,03	2487,608
X Variable 1	6,829626	0,962971	7,09224	1,6E-08	4,881834	8,777418	4,881834	8,777418

Considering the high value of the GDP in the Municipality of Bucharest compared to the other counties, it was excluded from the regression equation for greater representativeness. Bucharest represents the capital of Romania, the administrative center and includes many revenues, attracts investments and the value of the GDP represents 24.5% of the value of the GDP registered at the level of the entire country. From the analysis of the parameters of the regression function, the following is stated:

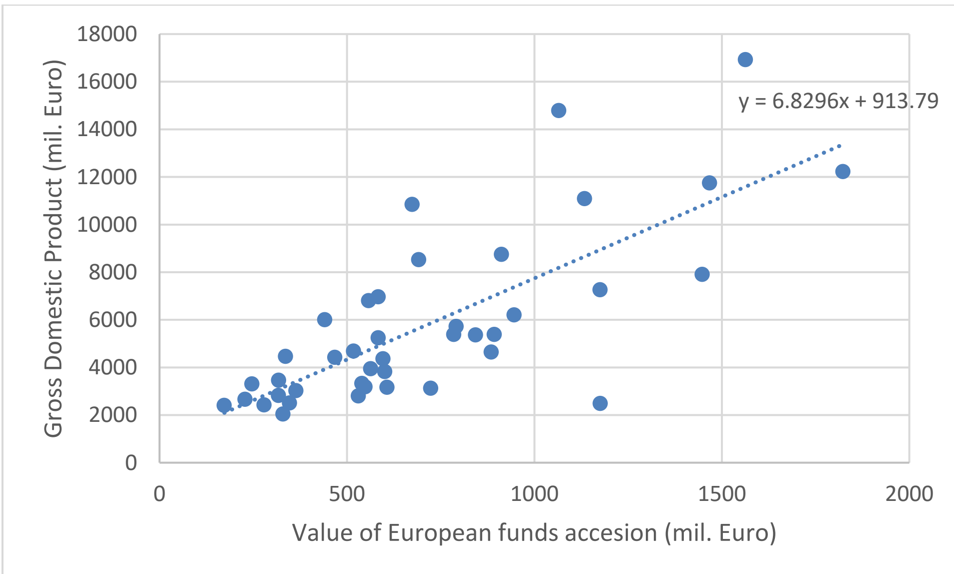
The regression function of the association between "Gross Domestic Product" and "Value of non-reimbursable European funds accessed" shows a direct linear relationship.

The regression variable "Value of non-reimbursable European funds accessed" (X) presents the regression coefficient 6.82, which means that for every 1 Euro of European funds accessed, the total gross domestic product increases by 6.82 Euro.

The coefficient of determination R Square is equal to 0.56, which expresses the fact that 56% of the variation of the gross domestic product is determined by the variation of the European funds accessed.

The regression equation between the dependent variable (Gross Domestic Product) and the independent variable (Total value of European funds accession) is as follows:

Gross domestic product = 6,8296x + 913,79



Graph 6. The correlation between the Gross Domestic Product and the Value of non-reimbursable European funds used

Source: data processing National Commission for Strategy and Prognosis and Ministry of Investments and European Projects, *MFE 2014-2020 - Date MySMIS2014 (APEX) (fonduri-ue.ro)*

The correlation coefficient is high 0.75, which demonstrates the strength of the link between the two parameters. By testing the parameters of the regression model (X) and (Y), the P value is lower than 0.0005, which demonstrates the existence of an association between the two parameters through statistically significant coefficients (P value $\leq$ 0.05).

Conclusion

The evaluation of the efficiency of the use of non-reimbursable European funds, through the lens of the impact on the main macroeconomic aggregate, the gross domestic product, proves to be essential for ensuring economic and social cohesion, at the level of all member states and at the level of all regions of a country.

In the case of our country, the evaluation at the level of each county is important because it is found that there are still gaps in development, different needs and opportunities.

The impact of non-reimbursable European funds was calculated based on a regression between two variables, respectively "Gross Domestic Product" and "Value of non-reimbursable European funds accessed". The obtained results demonstrate a direct linear relationship. The regression variable "Value of non-reimbursable European funds accessed" (X) presents the regression coefficient 6.82, which means that for every 1 Euro of European funds accessed, the total gross domestic product increases by 6.82 Euro.

The results obtained demonstrate the usefulness and the need to increase the absorption capacity of non-reimbursable European funds in as many areas of the country as possible, especially in areas that are still facing structural and economic problems, such as the counties in the northeast and the from the south of the country. Although there are counties that have a higher level of socio-economic development, it does not mean that they do not face problems and no longer require financing, which could be provided from national funds. The municipality of Bucharest registers a GDP well above the national average and faces problems related to the consolidation of buildings with seismic risk, waste management, pollution, etc.

In order to ensure the increase in efficiency in the use of non-reimbursable European funds for the current period, it is necessary for local public administrations to use and benefit from the financing opportunities offered by these funds.

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