

POSSIBLE METHODS AND MODELS TO EVALUATE ABSORPTION AND IMPACT AT THE LEVEL OF THE NATIONAL STRATEGIC REFERENCE FRAMEWORK

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1. Introduction

The Lisbon Strategy, also known as the Lisbon Agenda or the Lisbon Process was adopted by the European Council in Lisbon in March 2000, for a 10-year period, aiming to transform the European Union into the "most dynamic and competitive economy in the world". The objectives of this strategy are to counteract the low productivity and the stagnation of the economic growth in the European Union, through the formulation of some political initiatives to be taken by the Member States. The main domains are the assistance and the economic, social reconstruction and the environmental issues. The Structural Funds represent one of the main tools used by the European Union to reduce the disparities between regions and to support the economic growth.

The accessing and absorption of the structural funds is the biggest challenge for the public administration, business environment, farmers and NGOs. The optimization and the efficiency of the absorption of substantial funds for Romania represent a necessity, considering that reducing disparities between the country regions, in the first place, and between Romania and the European Union, is imperative. The absorption level in the countries that joined the European Union in 2004 was quite low. At this moment, Romania is facing one of the lowest absorption rates. Thus, in almost five years, Romania has managed to absorb only about 4% of the approximately 32 billion euros allocated for the 2007-2013 period.

Moreover, taking into consideration the current economic environment, in which the admission of the developing states to funding on the international markets is quite restrictive, the structural funds are a reliable source on which the state should build the investment strategy. Also, the allocation of the budgetary funds towards the strategic infrastructure objectives and towards the investment projects with a great added value should be doubled and should be accompanied by attracting the structural funds. In this way, the pressure on the government expenditures would be reduced, and the level of the indebtedness of the country would be maintained within acceptable limits.

The disparities in development between the regions of a country have also increased. Furthermore, the regional average conceals larger disparities at the county level, if we consider the intraregional arrangement. Romania takes the second place after Bulgaria in the top 10 least developed regions in the European Union, with four regions compared with the five from Bulgaria. The difference between Bucharest Ilfov and the poorest region of Romania has increased from 62%-24% in 2004 to 83%-26% in 2006 to reach 113%-29% in 2008, the region of the capital being for almost 4 times more developed than the North-East region. This difference can be extrapolated to the other regions of Romania, considering the minor differences between the regions of North-East, South-West, South-East and South-Muntenia.

A key element that comes off from the analysis of the data shows that the differences between the most developed region, Bucharest -Ilfov, and the other

regions have been increased. As it can be seen, in all the regions, except Bucharest-Ilfov, the GDP value/capita2010 is below the value of 2007.

Figure no.1 –The GDP value/ regions (euro)

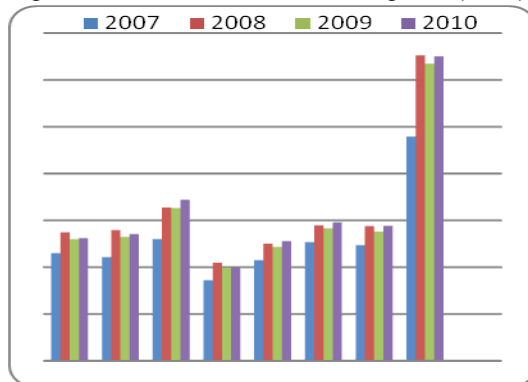
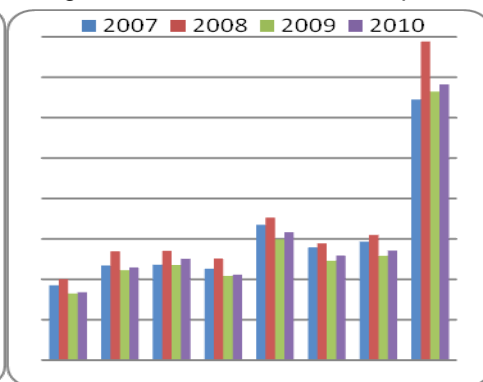


Figure no.2 -the GDP value/capita



Source: Data Processing INSSE

This fact shows that there is not a balanced policy of development in the territory and not even a coherent strategy of the authorities. It is becoming clearer and clearer that the general and simple objective of any authority should be to create legal working places, preferably better paid. For balancing the incomes at the regional level, the funds of the programs implemented with European money and money from the state budget should be focused exclusively on those parts from Romania, which are in a position of low-developed areas. Also, the investors should be oriented towards the low-developed regions, and the local authorities should create a framework which provides facilities.

Considering the aspects mentioned we intend to highlight the main methods which quantifies the effect of the structural funds on the evolution of the economy in Romania, and which identifies the main factors that negatively affects the absorption level.

2. The general framework of the analysis

The econometric models could be organized around two axes of

analysis: the factors that influence the absorption rate and the impact of the structural funds on the economic activity. Thus, it can be calculated the effective absorption at the "t" moment of the programming period, and there can be made forecasts based on the collected data. The impact of the structural funds on the evolution of the economy is achieved through the replication of some economic mechanisms, based on data sets, through the calculation of the coefficients. On the other hand, this impact is difficult to be quantified and its effects within the programming period have no meaning.

Although the econometric models can have disadvantages because they are subject of some restrictions from the economic theory and because they have the author's thinking print, they are the only methods to quantitatively measure the observed processes. In the following paragraphs, we intend to present three methods, the linear regression, the data envelopment analysis and the Hermin model and the way in which these can be built to capture the above mentioned aspects.

2.1. The linear regression

The regression analysis deals with the description and evaluation of a relationship between a dependent variable and one or more independent or explanatory variables, in order to determine the shape and the direction of the relationship between the variables and to predict the medium evolution of the studied population. Specifically, the linear regression is used to establish the relationship between variables based on data sets, analyzing if the ascending trend of one involves an upward, downward or no trend of the other variables. In the situation in which there exists a relationship, it can be realized a forecast based on the regression equation.

The analysis of the structural funds absorption through the linear regression could target the choice of the absorption rate on each operational program/major field of intervention as dependent variable, and as explanatory variables different data set son: the intervals between calls, the assessment period, the contraction period, the reimbursement period, the number of employment in the scheme of the intermediate body/managing authority, the public procurement procedures period.

In what concerns the impact of the funds on the economy, a solution could be the estimate through a linear regression of the impact of the funds absorption on the evolution of the gross domestic product or on any other important macroeconomic variables, such as the quality of life index, the unemployment, the exports, the possible scenarios being various. Thus, in the first place, on one hand, we could have as a dependent variable the evolution of the gross domestic product, and on the other hand, as the explanatory variables funds absorbed by each sectorial operational program. In this way we could see which of them had a more important impact on

the economy. In the second place, we would extend the area of the explanatory variables by enter ingot her explanatory variables in the model, such as the inflation rate, the interest rate and the industrial production. In this manner the results provide a more complete picture of the economic activity. Thirdly, restricting the analysis framework, within the Sectorial Operational Program Human Resources Development we could choose the unemployment rate as dependent variable, and the value of the projects for this programs explanatory variable. In this way we can notice if a key macroeconomic variable balances the efficiency of the implemented projects.

The main advantage of this type of analysis is represented by the robust statistical methods for verifying the credibility of the results. Likewise, the models are dynamic being able to capture annual changes at the decisions/policies level. The disadvantages of the method refer firstly to the reduced available sample, aspect which makes conditions the obtaining of some robust and statistically viable coefficients.

2.2. The data envelopment analysis

An often used method in the specialty literature for analyzing the inputs and the outputs is the data envelopment analysis. The data envelopment analysis is a linear programming model which measures the relative efficiency of the decision units. This method was success fully applied to the universities, hospitals or courts and companies in various fields.

The purpose of this technique is to generate indicators that reflect more completely and adequately the efficiency and productivity from various sectors. The method involves specifying a model to define the most important inputs and outputs. Then there are collected data on the inputs and outputs, and through the

linear programming it is estimated the efficiency border, after that the decision units are reported to this border. Depending on the way in which each unit is placed against this frontier the efficiency score is determined. For example, the data envelopment analysis can measure the universities efficiency using as inputs: the number of the teaching staff and the level of costs and, as outputs, the number of students who get a job and the period for which they are doing it. Comparing the data of several universities, there are obtained individual efficiency scores. To estimate the efficiency of the absorption of structural funds and their impact, while formulating the models there should be respected the following steps: the specification of a model to define the most important and specific inputs and outputs; the collection of the input and output data; the estimation of the efficiency border; the analysis of the efficiency scores related to the position against the efficiency border.

In what concerns the efficiency of the absorption, the model based on the data envelopment analysis could be build using as output the absorption rate of $N+3 / N+2$ rule, and as inputs: the rate of project submission, the evaluation period, the contracting period and the reimbursement period. Thus, there can be identified the most effective management authorities and intermediate bodies in terms of absorption. Regarding the impact of the funds on the economic activity, the data envelopment analysis data model can be built using as inputs: the number of new created work places and the increase of the energy efficiency, and as inputs: the allocated and absorbed funds on different major fields of intervention/ operational programs. In this way it can be realized a hierarchy of the efficiency of the major fields of intervention/ operational programs using as qualitative criteria the number of the created work places and the increase of the energy efficiency.

After analyzing the results, there can be made the reallocation between the major fields of intervention and between the operational programs for 2014-2020. Also, for a more precise view, there can also be used other criteria to capture the effectiveness of the structural funds. The main advantage of the data envelopment analysis is represented by the fact that this method does not require the establishment of a single set of criteria and does not require long periods of time. Also, the technique permits comparisons between the operational programs and /or the major field of interventions. In our opinion, the analysis is more suitable for the analysis of the absorption efficiency than the linear regression. A disadvantage of the data envelopment analysis is related to the fact that the input and output indicators should be similar for all the operational programs/major areas of intervention, aspect which is very difficult to be realized because of the different purposes of the programs that manage the structural funds. In addition, the results of the data envelopment analysis can sometimes be difficult to interpret, the method being controversial among the researchers.

2.3. The Hermin Model

Beside the above mentioned models, through which can be quantified the impact of the structural tools in realizing the economic convergence, the specialty literature also recommends the macroeconomic simulation models (Bradley, and Mitzi Untiedt, 2007). In these methods we find the Hermin model, EcoMod model and theQuest model.

The Hermin model is estimated to capture the impact of the cohesion policy, or more exactly , the effect of the structural funds on the GDP and the employment, and also their contribution to the regional development and the differences recovery. The Hermin model

is designed as a macroeconomic model, being found on the Keynesian principles. The results of the Hermin model for 2008 show that the effect on the employment in 2008, compared without the cohesion policy is 819 000 people (Regional Policy Evaluation, 2010). Also, by estimating the Questmodel, it was shown that the effect of the structural funds on the GDP was 0.61%, +5%, +9.5% and +15.7% in Germany, Poland, Spain and Portugal in 2009 (Evaluation of regional Policy, 2010).

The National Commission for the Economic Forecasting simulated the Herom model (Romanian version of the model Hermin) for estimating in the quantity the macroeconomic impact of the structural funds (the impact of the structural funds in Romania-assessment made using the Herom model). Starting from an optimistic scenario, it was considered the possibility that the absorption rate is 100%. The results showed that in 2013 the gross domestic product would be 15% higher, which is equivalent with an annual growth rate above 2%, in the situation of the total absorption of the structural funds.

In our opinion, a reestimation of the model that considers an absorption rate close to the one of Romania represents an imperative. The results of this analysis should be a starting point in creating a coherent strategy to attract the European funds. Furthermore, to have a wider perspective, the analysis should target more models that highlight the effectiveness of each operational program.

3. Conclusions

Within this article, we have tried to highlight the main methods that could quantify the impact of the structural funds on the GDP and that could analyze the factors which negatively affect the absorption rate. The quantitative assessment should also be accompanied by a qualitative assessment that can capture factors which cannot be measured by the econometric model. Nevertheless, when the modeling results are used, it is important to be aware that the models represent simplifications of the reality, despite the impressive mathematical calculations that they use.

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