

ROMANIA'S EU FUNDS ABSORPTION RATE: HOW TO IMPROVE IT?

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Abstract

Speaking about structural and cohesion funds offered by European Commission to new EU member states, Romania offers two different images. On one hand, according to 2015 Eurobarometer, Romania is among the countries with the highest confidence in European Union and on the other hand, it is on the bottom of the ranking of EU countries in terms of accessing European funds, after countries with similar socio-economic and political conditions. Moreover, EU funded projects are expected to contribute to sustainable development. Hence, the main goal of this paper is to identify and analyze the causes of the poor absorption of European funds in Romania for the allocation period 2007-2013, by a multi-criteria and multidimensional analysis. The conclusions of our study improve the knowledge about how to increase the absorption of EU funds for the future allocation period (2015-2020) identifying the main challenges in ensuring sustainable economic growth and cohesion in Romania.

Keywords: EU funds, sustainable development, Romania

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1. Introduction

On March 3rd, 2010 the Commission of the European Parliament adopted Europe 2020 strategy promoting smart, sustainable and inclusive growth. The aim of this strategy is to improve the competitiveness of the EU preserving social market economy model and improving significantly the effective use of its resources. The EU's funding instruments for the period 2014-2020 are designed to support Member States' efforts to promote economic reform, in order to build solid foundations for growth and job creation facing the key challenges of globalization, aging and decreasing natural resources.

A KPMG study from 2013 places Romania in a critical position in the context of attracting grants, as the last country of the Central and Eastern European countries, not only in level of payments to beneficiaries but also in rate level of contracting - which is only 70 %, with 13 percentages below the average of CEE countries. The study reveals that this inability of a state to use the allocated funds is due to the level of its development.

Moreover, some research papers underline the existence of a direct link between low absorption and the uneven development of EU regions. Šumpíková (2003), Horvat (2005), Zaman & Georgescu (2014), Zaman & Cristea (2011) associate the low rate of absorption of EU funds with administrative and management deficiencies like: the applicants' ability to prepare the projects, the system of implementing, monitoring and auditing the projects, the corruption, the politicization of public institutions etc. Some new EU countries with the support of European Commission through dialogue and counselling, have implemented rules and laws such that to improve the procedures of accessing EU funds.

Generally the EU funds absorption rate is related to three main factors (Šumpíková et al., 2003):

- macroeconomic capacity: the current Cohesion policy rules limit the transfer of EU funds to a maximum of 3.8% of the respective country's gross domestic product (GDP);
- financial capacity: the ability to co-finance the programs and projects supported by the EU;
- administrative capacity: the ability of central and local authorities to manage the EU programs and projects.

The primary goal of this paper is to identify and analyze the causes of the low absorption rate of EU funds in Romania compared to other CEE countries. The second objective of the paper is to identify some directions to be followed in the future for improving the absorption rate of EU funds and also to use them better so that to contribute to a sustainable development through innovation policies, research and development, competitiveness and globalization

2. EU funds absorption rate: Romania versus other CEE countries

Accession to the European Union has offered to CEE countries the possibility to access the European budget through financial instruments called European funds. Amounts received from these funds allow them to come closer to E.U. political and socio-economic standards, to increase the country's development level. In order to respond to the Lisbon strategy requirements, for the 2007–2013 budgetary period, the EU budget was constructed based on three main axes: sustainable growth, preservation and management of natural resources and citizenship, freedom, security and justice.

In the 2007-2013 period to all CEE countries (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia) was allocated a total of 174.72 billion Euros through EU funds (European Regional Development Fund, Cohesion Fund and European Social Fund), excluding national public and private contributions. This amount represents 16.2% of the annual GDP of the region. There are high disparities between CEE countries in the total amounts allocated through EU funds and in their share in GDP or in ratio per capita. Therefore the highest budget is allocated to Poland (67.19 billion Euros) but the highest proportion in GDP is found in case of Hungary (25.4% in annual GDP) and the highest EU funds ratio per capita is allocated to Estonia (2595 Euros per capita). Romania is on the 4th position in EU funds allocated during the analyzed period with 19.67 billion Euros, but on lower position, 6th or even 8th position taking into consideration EU funds share in GDP per capita respective EU funds ratio per capita. Romania had a modest beginning in accessing and using the funds made available by the European Union (Table 1).

Table 1. Basic statistics on CEE countries

	Bulgaria	Croatia	Czech Republic	Estonia	Hungary	Latvia	Lithuania	Poland	Romania	Slovakia	Slovenia
Population (million)	7.28	4.26	10.52	1.32	9.91	2.02	2.97	38.53	20.06	5.41	2.06
Annual GDP (Billion Euros)	39.94	43.31	149.39	18.43	98.07	23.37	34.60	389.70	142.82	72.13	35.27
GDP per capita (thousand Euros)	5.486	10.163	14.206	13.800	9.898	11.548	11.650	10.113	7.121	13.333	17.140
EU funds 2007-2013 (Billion Euros)	6.67	1.00	26.30	3.40	24.92	4.54	6.77	67.19	19.18	11.65	4.10
EU funds per capita (Euros)	917	234	2501	2595	2515	2243	2280	1744	956	2154	1993
EU funds per GDP (%)	16.7%	2.3%	17.6%	18.5%	25.4%	19.4%	19.6%	17.2%	13.4%	16.2%	11.6%
EU absorption rate (Nov. 2015)	80.2%	51.8%	80.2%	95%	80.6%	92.8%	94%	92.2%	63.8%	71.5%	91%

Source: <https://cohesiondata.ec.europa.eu> accessed on September 10th, 2015

In our study we have used the European Commission' view which define the absorption rate as the percentage of allocations calculated as a relation between the paid value and the allocated value of funds amount. In 2007, Romania, along with other ex-communist countries, has managed to achieve a degree of EU Funds absorption of only 2.2% (but the highest rate among CEE countries for that year). Even though the absorption of European funds in Romania was made in an accelerated pace, Romania ranks among the last in Europe after Croatia, which joined the European Union later than our country (2013). The graph in Figure 1 shows the evolution of the absorption rate of European funds in the last 13 countries that joined the European Union for the period 2007-2015. In 2015 (at the end of October) the countries with the highest absorption rates were Estonia, Lithuania, Latvia and Poland (95%). Romania has reached only 63.8% absorption rate, but the promises of the Government were to reach 80% till the end of 2015 (Minister for European Funds).

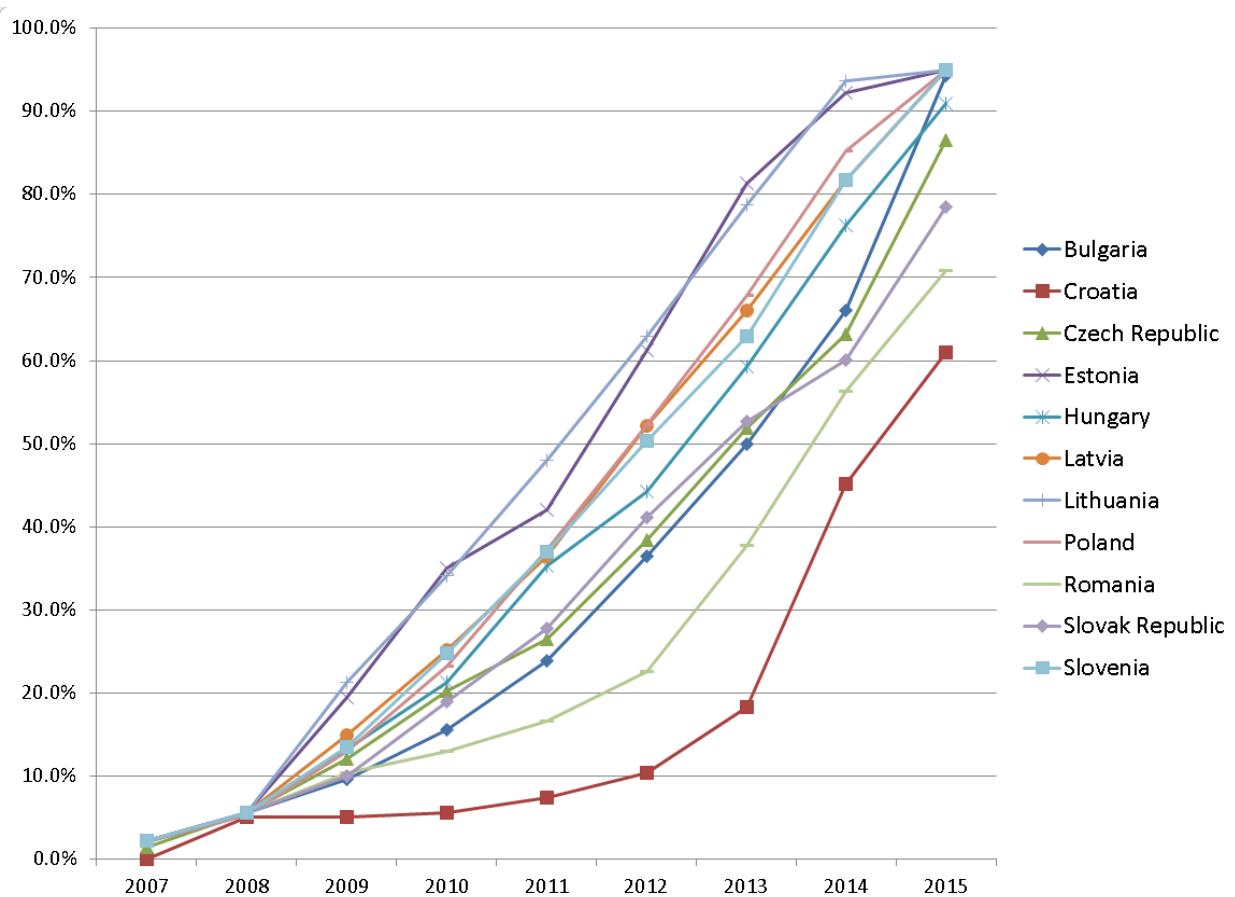


Figure 1. Evolution of the EU funds absorption rate in 13 European Countries, 2007-2015

Source: authors' processing, based on *European Commission* data

3. Factors that influence absorption of European funds: hypothesis for CEE countries

Many studies analyzed the factors influencing the absorption of EU funds during the last years. Achim and Borlea (2015), Bachtler and Ferry (2013), Dellmuth and Stoffel (2012), Grecu (2009), Šumpíková et al. (2003), Tomova et al. (2013), Tosun (2014), Zaman and Georgescu (2009) are just some of the authors who identified as explanatory factors for EU funds absorption rate: the institutional and administrative structures' capacity, inter-institutional coordination, bureaucracy, the existence of a coherent long-term vision of the authorities, the member countries' socio-economic development, the national resources' availability for financing projects, public-private partnerships' efficiency, staff qualifications, lack of decentralization.

The first aspect of great interest to our study is to see if *better governance conducts to a higher percentage of EU funds absorption*. For this purpose we take into account all Worldwide Governance Indicators (Kaufmann, et al., 2010) synthesizing the efficiency and quality of Government activity, seen through company representatives, citizens, and experts from both developed and less developed countries. They characterize six governance dimensions (The World Bank Group, 2013): Voice and Accountability (VA), Political Stability and Absence of Violence (PS), Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL), Control of Corruption (CC). Each component ranges from approximately -2.5 (weak) to 2.5 (strong) governance performances. The choice of these indicators as estimates for „good governance" is justified by the fact that they incorporate the major key coordinates of a governance system and the possibility of using them in multidimensional statistical analysis (some examples of studies: Achim and Borlea, 2015; Bota-Avram, 2014; Dimitrova 2001, Tosun, 2014).

The ability to co-finance programs and projects supported by the EU is a requirement for structural funds absorption (European Parliament, 2011, p. 14). Tosun (2014) highlighted that Member States with high income levels were less likely to maximize the European Regional Development Fund's (ERDF) for 2000–2006. Moreover, he found that new Member States generally had higher absorption rates than old Member States.

Therefore the second aspect of interest in our paper is to see if *better macro-economic indicators conduct to a higher percentage of EU funds absorption*. For this purpose we take into account the GDP per capita and unemployment.

3.1. Methodology

Panel data analysis is used for obtaining more efficient estimates through regression models by increasing sample sizes and heterogeneity and reducing variables collinearity.

A common panel data regression model looks like:

$$\begin{aligned} y_{it} &= \mu + x_{it}\beta + u_{it}, i = 1, \dots, N; t = 1, \dots, T \text{ and} \\ u_{it} &= \alpha_i + \beta_t + \varepsilon_{it} \end{aligned} \quad (1)$$

where α_i – is country effect, β_t is time effect and ε_{it} is combined effect of country and time.

Assumptions about the error term determine whether we speak of fixed effects or random effects. In a fixed effects model, u_{it} is assumed to vary non-stochastically over countries or time making the fixed effects model analogous to a dummy variable model in one dimension. In a random effects model, u_{it} is assumed to vary stochastically over countries or time requiring special treatment of the error variance matrix.

Sometimes the fixed effects methodology is used for panel analysis with few explanatory variables. This allows avoiding the omitted variables problem. Therefore, we will prefer using in our analysis fixed effects models when the assumption on non-correlation between explanatory variables and individual fixed effects is verified with a significance level of at least 10%. When individual specific effects are uncorrelated with the independent variables, random effects model is more efficient than the fixed effects model. Therefore in these cases we will use random effects models. In order to test what model is preferred, we will use Hausman Test.

As long as the presumed effect of economic growth and of governance on EU funds absorption is not simultaneously, in our model we will use the explanatory variables lagged with one year:

$$\begin{aligned} y_{it} &= \mu + x_{it-1}\beta + u_{it}, i = 1, \dots, N; t = 1, \dots, T \text{ and} \\ u_{it} &= \alpha_i + \beta_t + \varepsilon_{it} \end{aligned} \quad (2)$$

Moreover, as long as we study the effect of explanatory variables on absorption level of EU funds, we have considered in our econometric study as endogenous variable the increase of EU fund absorption in current year compared to previous year for the operational exercise 2007-2013.

3.2. Data set

Our study was conducted on a sample consisting in 11 Central and Eastern European Union member countries. The data refers to the period 2007-2014 (the allocation period of the second installment of funds for the EU member states) and is collected as follows:

- rate of UE funds absorption (AF) is provided by the European Commission (<http://insideurope.eu/>) on 31 December of the current year during the period 2007-2014.

- World Governance Indicators (WGI), GDP per capita in current US\$ (GDP) and unemployment rate (Unempl) were collected from World Bank during the period 2006-2013.

In order to synthesize the perception about governance capacity of a country, we have defined a composite index based on all six World Governance Indicators by using Principal Component Analysis. The first principal component explains 89% of the total variance. The variables Voice and Accountability (VA) and Rule of Law (RL) contribute the most to this component, followed in order by: Government Effectiveness (GE), Control of Corruption (CC), Regulatory Quality (RQ) and Political Stability and Absence of Violence (PS) (table 2). This component defines the new variable „Governance Indicator” a variable of mean zero and variance 1.

Table 2. Principal Component Analysis

Principal Factor 1						
Eigenvalue	4.43					
Variance explained	0.8929					
Factor loadings	CC	GE	PS	RQ	RL	VA
	0.8612	0.8961	0.7131	0.7563	0.9494	0.9553

Source data: own computations using STATA software

The main descriptive statistics of the variables used in econometric analysis are presented in Table 3.

Table 3. Descriptive Statistics

Statistics	CC	GE	PS	RQ	RL	VA	AR	GI	GDP	Unempl
Number of observations	88	88	88	88	88	88	88	88	88	88
Mean	0.277	0.633	0.698	0.884	0.581	0.806	0.091	0	14288	0.097
Standard deviation	0.375	0.396	0.296	0.288	0.405	0.237	0.058	1	4879	0.036
Min	-0.304	-0.356	0.070	0.125	-0.159	0.291	0	-2.033	4370	0.043
Max	1.109	1.189	1.299	1.429	1.165	1.122	0.268	1.489	27501	0.187

Source data: own computations using STATA software

4. Econometric results

In order to test the two hypotheses formulated in previous paragraph, we employed different models by including in regression analysis both macroeconomic variables (GDP per

capita and unemployment) and World Governance Indicators. The variable GDP per capita is included in the model in logarithm such that to reduce his variance.

First of all we test the hypothesis:

H1: Do better governance and macroeconomic indicators imply higher absorption rate?

In order to test this hypothesis we have used the aggregate indicator of governance capacity (GI) of a country constructed in previous chapter. As long as correlation between explanatory variables and individual fixed effects is very high (-0.87) we have used the regression model with fixed effects. Almost all coefficients of the model, including fixed effects are significant with a significance level of 0.01 (except GI and the fixed effect for Romania). Moreover by applying Fisher's test to see whether all the coefficients in the model are different from zero, *p value* is less than 0.01 and therefore we conclude that the model is valid. Calculating rho indicator, known as the intra-class correlation, it shows that 78.98% of the variance is due to differences across panels.

Governance Indicator reveals the perception of company representatives, citizens, and experts about governance performance. Therefore it is expected to have a positive impact of this indicator on absorption rate. By increasing with one unit the Governance Indicator (GI), the absorption funds rate will increase by 0.6%. As long as the estimated coefficient is not significantly, we can say that there is not sufficient evidence to prove the hypothesis that better overall governance imply higher absorption rate. Therefore, in the second stage we will try to identify which governance directions have higher impact on absorption rate.

Higher values of GDP per capita reveal higher capacity of co-financing projects financed by EU funds, and therefore higher absorption rates. The estimation results validate this hypothesis too, as long as the coefficient is significantly higher than zero. By increasing with one unit $\ln(\text{GDP per capita})$ we will have an increase of 21% in absorption rate. Therefore, economic growth implies higher absorption of EU funds (Table 4 – Model M1).

Finally, regions with higher rates of unemployment should get more fund transfers in order to reduce the gap between them. Therefore the relationship between unemployment rate and absorption of EU funds should be a direct one. Our estimation results on CEE countries validate this hypothesis. Therefore, increases in unemployment with 1% will imply increases in absorption rates with 1% too, as long as among the objectives of some EU funds are the development of human resources, creating new jobs and increasing employment.

About fixed effects of countries we can observe that all are significant with a level of significance of 0.01, with one exception, Romania. One explanation could be the fact that the reference country is Bulgaria, and these two countries are very similar in economic development and absorption of EU funds.

Table 4. Panel data regression estimators

Model	M1	M2	M3	M4	M5	M6	M7
<i>Coefficients estimates</i>							
Model type	Fixed effects						
LnGDP	0.211*** (6.06)	0.212*** (6.20)	0.207*** (6.12)	0.224*** (6.13)	0.231*** (5.53)	0.190*** (5.12)	0.209*** (6.16)
Unempl	0.0105*** (6.72)	0.0105*** (6.75)	0.0099*** (6.45)	0.011*** (6.64)	0.010*** (6.69)	0.010*** (6.54)	0.010*** (6.50)
GI	0.0064 ^{NS} (0.29)	-	-	-	-	-	-
CC	-	0.0052 ^{NS} (0.11)	-	-	-	-	-
GE	-	-	0.889* (1.61)	-	-	-	-
PS	-	-	-	0.030 ^{NS} (0.87)	-	-	-
RQ	-	-	-	-	-0.031 ^{NS} (-0.77)	-	-
RL	-	-	-	-	-	0.085 ^{NS} (1.46)	-
VA	-	-	-	-	-	-	-0.088 ^{NS} (-1.31)
Constant	-1.855*** (-5.91)	-1.878*** (-6.21)	-1.835*** (-6.15)	-1.997*** (-6.07)	-2.02*** (-5.71)	1.67*** (-5.04)	1.804*** (-5.93)
<i>Model fit</i>							
F test for coeff.	26.42***	26.37***	28.15***	26.88***	26.77***	27.83***	27.54***
Corr (ui,xb)	-0.870	-0.86	-0.92	-0.88	-0.86	-0.90	-0.80
Var. due to diff. across panels	0.7898	0.777	0.871	0.815	0.787	0.839	0.722
F test: all ui=0	6.02***	5.92***	6.30***	5.51***	5.73***	5.83***	6.33***
<i>Fixed effects</i>							
Bulgaria	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Croatia	-0.214*** (-6.27)	-0.213*** (-6.06)	-0.253*** (-6.11)	-0.229*** (-5.98)	-0.228*** (-5.85)	-0.216*** (-6.56)	-0.213*** (-6.47)
Czech Republic	-0.218*** (-3.56)	-0.208*** (-4.27)	-0.277*** (-4.52)	-0.237*** (-4.23)	-0.208*** (-4.86)	-0.272*** (-4.37)	-0.161*** (-2.98)
Estonia	-0.180*** (-2.64)	-0.169*** (-2.52)	-0.246*** (-3.90)	-0.184*** (-4.16)	-0.157*** (-4.14)	-0.249*** (-3.58)	-0.109*** (-1.96)
Hungary	-0.151*** (-3.06)	-0.143*** (-3.30)	-0.191*** (-4.27)	-0.161*** (-4.03)	-0.139*** (-4.34)	-0.200*** (-3.83)	-0.104*** (-2.46)
Latvia	-0.169*** (-3.85)	-0.163*** (-4.25)	-0.210*** (-4.76)	-0.175*** (-4.83)	-0.161*** (-4.99)	-0.218*** (-4.31)	-0.133*** (-3.5)
Lithuania	-0.137*** (-2.91)	-0.129*** (-3.47)	-0.181*** (-3.97)	-0.148*** (-3.73)	-0.126*** (-4.01)	-0.184*** (-3.70)	-0.092*** (-2.24)
Poland	-0.124*** (-2.69)	-0.117*** (-2.78)	-0.153*** (-4.01)	-0.138*** (-3.39)	-0.117*** (-3.89)	-0.161*** (-3.69)	-0.072*** (-1.65)
Romania	-0.035 ^{NS} (-1.49)	-0.038* (-1.67)	-0.007 ^{NS} (-0.24)	-0.036* (-1.58)	-0.044* (-1.84)	-0.043** (-1.92)	-0.045** (-1.95)
Slovakia	-0.253*** (-4.71)	-0.244*** (-5.46)	-0.302*** (-5.65)	-0.275*** (-5.05)	-0.246*** (-6.29)	-0.273*** (-6.22)	-0.200*** (-4.03)
Slovenia	-0.242*** (-3.6)	-0.234*** (-3.24)	-0.308*** (-4.48)	-0.260*** (-4.31)	-0.246*** (-4.58)	-0.293*** (-4.48)	-0.179*** (-2.92)

Source data: own computations using STATA software

As long as the aggregate indicator for governance has not a significant impact on absorption rate, we test if improvements in individual dimensions of the governance imply higher absorption rates. The hypothesis is:

H2: Do improvements in each dimension of governance and better macroeconomic environment imply higher absorption rate?

In order to test this hypothesis we have used the regression models with fixed effects (M2-M7). As long as correlation between explanatory variables and individual fixed effects is very high (higher in absolute value than 0.8) we have used the regression model with fixed effects. By applying an F test to see whether all the coefficients in the models are different from zero, *p value* is less than 0.01 and therefore we conclude that all models are valid. Calculating rho indicator, known as the intra-class correlation, it shows that more than 70% of the variance is due to differences across panels in all models.

All estimation results for models M2-M7 reveals a significant impact of GDP per capita and unemployment on absorption rate, with a significance level of 0.01. By increasing with one unit $\ln(\text{GDP per capita})$ we will have an increase between 19% and 21% in absorption rate and increases in unemployment with 1% will imply increases in absorption rates with about 1% too. Therefore, we can conclude that we have sufficient evidence to state that the hypothesis on macroeconomic indicators having a significant impact on absorption rate of EU funds is true.

By analyzing the models M2-M7, studying the impact of each governance dimensions, we observe that only Governance Effectiveness has a significant impact on absorption rate at 10% level of significance. For this model, the intra-class correlation shows that 87% of the variance is due to differences across panels. An increase of 0.1 units in GE implies an increase with 8.9 % in absorption rate.

All fixed effects of countries are significant with a level of significance of 0.01, with one exception, Romania.

5. Conclusions

European Union is interested in a better allocation of resources through production specialization in member states. Direct investments might have positive effects in this direction and might lead to the change of the economic environment oriented towards sustainability. Moreover, the investments in education and human capital have significant and positive effects on country development on long term.

In energy sector, structural funds are designed to correct market failures and to stop negative externalities of pollution and to stimulate positive externalities of sustainable

technologies through the inclusion of eco-efficiency criteria in production and services activities. Subsequently, attraction and absorption of EU funds have as objectives: assurance of food security and safety, biodiversity and the environment protection, preserving national cultural and natural heritage. Even if the interest and the demand for EU funds for energy efficiency and for renewable energy resources are very high, during the allocation period 2007-2013 the funds were very slowly contracted and spent.

Therefore a priority for the next allocation period is to improve governance effectiveness such that to better use the allocated funds and to obtain faster the expected results.

The previous estimations showed an undesirable social-economic reality in Romania, an aspect which may explain the low level of absorption of European funds. Improving government efficiency in the public services can contribute to a more sustainable economic development of Romania, through the accumulation of capital image, which will attract foreign investors, increasing quality in public services, human capital accumulation with a higher level of training and with positive effects on enhancing competitiveness and innovation. In the long run these actions will reduce poverty through a highly performance educational and health care system and will reduce the corruption level - another disadvantage that marks Romania's economic development.

In Romania, according to National Strategy of Sustainable Development for 2013-2020-2030 the main challenges and target goals are: widespread use of best available technologies in production and services, speaking on economically and environmentally terms, production climate change and “clean” energy, social inclusion, education and public health, migration, global poverty, etc. Therefore, the major directions to be followed in order to obtain a better absorption of EU funds for a sustainable development of Romania, could be synthesized as follows: improving the management at micro and macroeconomic levels, improving investments policies, maintaining macroeconomic balances, upgrading the macrostructure of the economy to meet the social and environmental requirements, increasing the employment rate, improving productivity and competitiveness.

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