ANALYSIS ABSORPTION CAPACITY OF EUROPEAN FUNDS UNDER THE OPERATIONAL PROGRAMME HUMAN RESOURCES DEVELOPMENT

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ABSTRACT: *One of the main goals of the European Union is the economic progress. In the last 50 years, and especially beginning with the '80s, remarkable efforts have been made for removing the borders between the EU national economies and for creating a unique market where goods, persons, capital and services could move freely. Commercial interchanges between UE states have significantly grown and at the same time EU has become a global commercial force. EU's goal is to become the most dynamic economy based on global recognition. This implies a significant investment in research, education and forming, which allows the population to have access to this new information. This research work displays diverse aspects concerning the Romania's* ability draw *of irredeemable funds in period 2007 – 2013, focusing on human capital development activity. Today, the problem absorptions are no longer able to develop projects, that knowing a significant improvement but the stage of implementation and funding.*

KEY WORS: *absorption capacity, convergence, human capital development irredeemable financing, regression.*

JEL CLASSIFICATION: *F36, O19.*

1. INTRODUCTION

As a continent formed by nations forever aspiring to national identity and economic, political and cultural affirmation, Europe faced an evolution based on conflicts, characterized by a competitive commerce, colonial disputes and wars, as well as manifestations of exaggerated nationalisms that dominated nations' existence.

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The last few years brought a significant dynamic at European Union's level in what territorial cohesion is concerned - a domain that is still in undergoing consolidation. According to the Treaty of Lisbon, territorial cohesion has become the third dimension of the cohesion policy, together with the social and economic components. The idea of territorial cohesion represents the expression of balanced, coherent and harmonious territorial development regarding economic and social activities, equipment, accessibility and the quality of the environment, the existence of equitable living and working conditions for all the citizens no matter the place they are located. Territorial cohesion policy wishes to reduce development differences between geographic regions, between the urban and rural environment, the center and the suburbs, as well as to prevent the increase of territorial disparities.

The objective of economic and social cohesion was mentioned in the Single European Act and became a reality in 1988 by the adoption of the first regulation which represented the beginning of the cohesion policy. The Maastricht, Amsterdam and Nice Treaties reassured the importance of this policy and its scope was extended by the Lisbon Treaty project and by acquiring new territorial dimensions. Cohesion policy represents a local policy that assigns each European territory a role, meaning that it does not represent an obstacle in the allocation of economic activities, but could itself become a way of development. Latest economic theories confirm this approach through a series of case studies that prove the fact that *geography matters, but regional policy can make the difference.*

2. OPERATIONAL PROGRAM HUMAN RESOURCES DEVELOPMENT (SOP – HRD)

Romania ESF interventions in human resources development, as set out in the National Strategic Reference Framework 2007-2013 will ensure investment in human capital, modernization of education and training, increasing access to employment and strengthening social inclusion for vulnerable groups.

The need to provide qualified competitive human resources on the European labour market arises from the understanding of the fact that the competitive advantages that today determine the economic growth of Romania, cannot ensure long term sustainability, given the increased pressures caused by globalization and the continuous introduction of new technologies. Only a flexible and higher qualified workforce could react to the constant changes in the labour market.

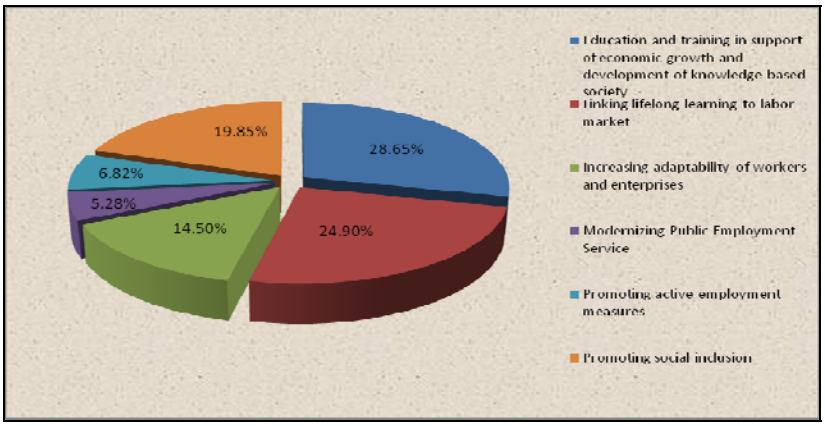
The overall objective of the program is to develop human capital and to increase its competitiveness by connecting education and continuous training with the labour market and the certainty of choosing opportunities for participation to a labour market that is modern, flexible and includes 1.650.000 persons. In fact, the National Strategic Reference estimates that "there will be an increase in employment of about 164,000 people by 2013 compared to 2005, the figure indicating a net increase in the average number of employees in the general economy as a result of differences between new jobs created and staff reductions.

Before the elaboration of this objective a thorough socio-economic analysis was made and the result showed at national level the following phenomena: low skilled

labor due to low participation rates in education and training, particularly in rural areas; inability of institutions responsible for education and employment to adapt quickly to the new requirements of the labor market; increased poverty, especially among risk groups (gypsies, monoparental families that have more than two children, post-institutionalized young people); decrease in the percentage of active population in conjunction with a pronounced aging and a growing phenomenon of migration, etc.

A blooming economy is based on a long term active working population that constantly improves its competencies during their professional activity – Lifetime learning is the specific terminology. In the EU, the number of adults taking part in the forming activities has grown, reaching 9,6% in 2009, gathering population with ages between 25 and 65 years old.

In order to implement this operational program for 2007-2013 funds worth 4089.3 million euro have been allocated (3476.2 million euro from European Funds, 85.01%).



Source: own processing based on data provided by: http://www.posdru/index.php/pos-dru.pdf

Figure 1. Axis distribution of funds under SOP – HRD 2007 – 2013 programming period

Following the stage of grants absorption we can say that this operational program proved to be successful. This situation is the result of efforts made in the first years of SOP HRD in order to contract a significant percentage of ESF 2007 - 2013 allocation to ensure financial flows to avoid automatic disengagement. As regards EU funds absorption stage, the operational programs situation at September 20, 2013 is shown in figure 2.

If regarding the number of projects submitted, approved and contracted, Romania has one of the highest rates within the EU, in terms of absorption at September 20, 2013 it barely reached 34.38%, the total operational programs. If we refer to the January 2009 period we can notice a growth in the rate of absorption, but if we compare it to the other member states of the EU we are placed last. Regarding the situation for each operational program, the Sectoral Operational Program Development of Human Resources has registered the highest percentage, 47.75% respectively while the Transport Operational Programme was at the opposite end with only 15.88%.

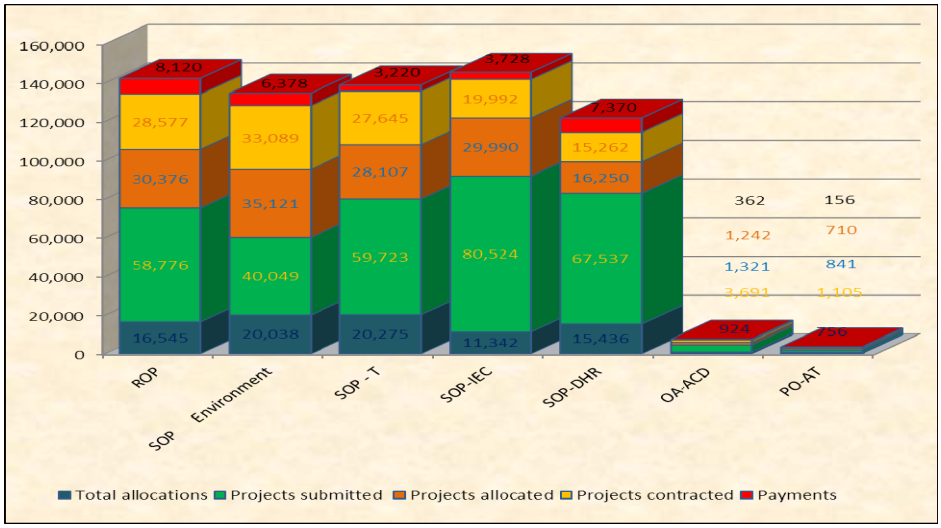


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Figure 2. Grants' stage of absorption – September 20, 2013 (million lei)

3. LINKING INTENSITY AND DEPENDENCY SIGNIFICANCE TESTING OF THE RELATIONSHIP BETWEEN THE ALLOCATIONS, THE AMOUNT REQUESTED THROUGH THE SUBMITTED PROJECTS, THE VALUE OF THE APPROVED PROJECTS, OF THOSE THAT GOT CONTRACTED AND THE ABSORPTION CAPACITY

Taking into account the low level of absorption capacity as well as the significant differences between the phases of the grants accessing process we wish to determine the intensity and dependency signification of the link between the dependent variable, endogenous, value of payments (value of payments made to the structural and cohesion funds beneficiaries) and the exogenous variables: allocations (amounts given from EU budget), submitted projects (value requested by potential beneficiaries of European funds through grant applications that come together with the submitted projects), approved projects (value of the approved projects after final evaluation made by the management authorities) and contracted projects (contracted values that is to be absorbed as a consequence of implementing the projects).

Both the prevision on the absorption level as the way of establishing the link between the absorption level and the value of submitted projects, were made based on data provided by the Authority for Structural Funds Coordination and the Ministry of European Affairs by analyzing the evolution of the five indicators for 69 months.

In order to test the intensity of the connection as well as the signification of the dependency between the values of allocations, the value requested through the submitted projects, the value of approved projects, of the contracted projects and the capacity of absorption regarding all operational programs, we followed the following steps:

a) Analysis of the data afferent to the payment to structural and cohesion funds beneficiaries indicator

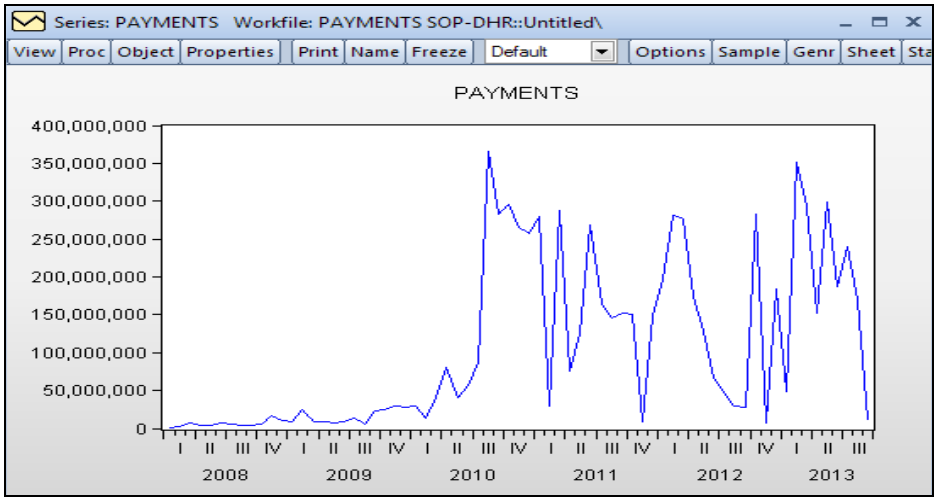

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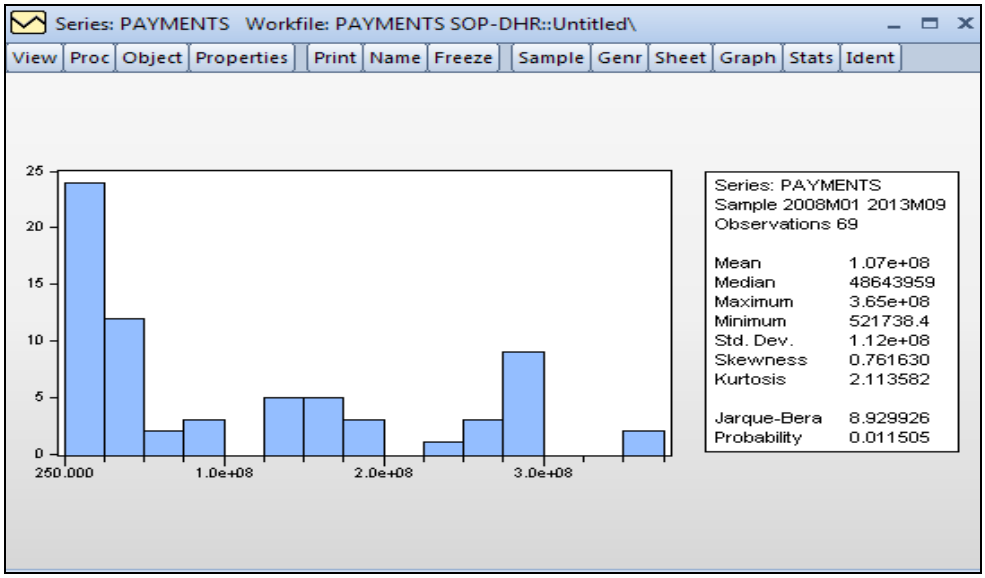
Figure 3. Graph data series on financing investment projects of European funds, the Operational Programme Human Resources Development, in the period January 2008 - September 2013

Upward trend, but uneven, can be observed by analyzing the descriptive statistics for the data series analyzed in relation to a normal distribution.

Following the descriptive statistics analysis were separated the following distribution characteristics:

- mean, an indicator of central tendency that characterizes the average payments made to beneficiaries of structural funds in the Operational Programme Human Resources Development in amount of 107 million RON;
- median, value recorded in the middle of the period analyzed, the data series that divides into two equal parts, are at amount of 48.644 million RON;
- extreme values of the period with a maximum of amount 365 million RON recorded in August 2010 and a minimum of 521,738 RON in January 2008;
- Standard deviation of individual values from the mean value: 112 million RON;
- because the coefficient of asymmetry of the data series around its mean (skewness 0.76) recorded a positive value, we conclude that the distribution is asymmetrical at right, valorile extreme fiind situate în dreapta mediei;
- kurtosis = 2.11, shows that the distribution of the data series is a type leptokurtic;
- therefore, Jarque-Bera test, based both on the coefficients skewness and kurtosis, shows that the series of indicator payments is not exactly follow a normal distribution.



Source: own processing based on data provided by: http://www.fonduri-structurale-europene.ro.html

Figure 4. Distribution histogram data series on the development value of payments, the Operational Programme Human Resources Development, in the period January 2008 - September 2013

b) Testing the connection's intensity and dependency significance between the allocations, the value of submitted projects, approved ones, contracted projects and the absorption capacity through the scatter analysis

In order to obtain conclusive results, capable of providing unaltered information due to some extreme values, we adjusted the values considered to be exaggerated as follows:

- In the column that included the total value of submitted projects we replaced: September's 2009 values (submissions exceeded 21,61 times allocations) and October's 2009 values (submissions exceeded 19,91 times the allocations) with the values recorded in July and August 2009; April's and May's 2009 values (submissions exceeded 9,97 and 13,13 times the allocations) with the February and March 2010 values; September's 2010 value (submissions exceeded 10,69 times allocations) with August's 2010 value; August's 2010 values (submissions were 3,12 time fewer than allocations) with September's 2012 values;

- In the column for the total worth of approved projects we replaced the values of December 2009 when the value of approved projects exceeded 13,48 times the allocations and 2,1 times the value of submitted projects, with the value of the previous month; the value of July 2012 when the eligible projects were worth 1,98 times the value of submitted projects and 4,79 times the value of allocations for the same period;

- In the column designated for the value of contracted projects we replaced the value the values of September 2012 with the values of August because the value of contracted projects was placed below 50% of the value of allocations.

- In the column regarding the total amount of payments we replaced the value recorded in August 2012 with the value recorded in September 2012.

- In the amount payments column values have replaced months: November 2008, February 2009, August 2010, September 2010, February 2013, March 2013 and May 2013 with the values recorded in the previous month.

Results showed the following:

- Multiple R = 0.964069, indicates a strong and a positive link between the payments and the four independent variables studied (allocations , submitted projects, approved projects, contracted projects);
- R Square = 96.1823% shows how the change in payments is explained by the influence of four independent variables (allocations, submitted projects, approved projects, contracted projects);
- The F test (F = 429.29), shows a positive value, which validates the linear regression model describing the relationship between the payment projects and the allocations, the submitted projects, the approved projects and the contracted projects.
- Intercept in the amount of -14,601,603.17 RON, shows that as the payments could be made given that there were no amounts allocated not submitted any project on any of the axes of funding and obviously had not approved and contracted any project. Because *t Stat* = 3.66 and *P-value* = 0.00005 (less than 0.05), means that this coefficient is significantly (for a probability of about 99.99% > 95%, as has been established initially). In fact, that both the lower and upper confidence interval (-22,561,045.96≤ $ß_0$ ≥ -6,642,160.4) for this parameter is negative shows that the general community is a significant parameter.

For all that, the coefficient value of approved projects with a value of 0.0675, show that an increase in contracted projects with a one RON, the payments will decrease by 0.0675RON. Because *t Stat* = 1,19 and *P-value* este 0.235 (less than 0.05), means that this coefficient is insignificant (for a probability of about 76.5%). In fact, that the lower limit of confidence interval (-0.1804≤ $ß_3$ ≥ 0.0452) for this program is negative, and the upper limit is positive show that the general community parameter is approximately zero.

c) Checking disturbet interdependence in relation to their values

The fact that the linear regression is not an corresponding estimate, we will confirm the presence of autocorrelation errors. Since the d_{calc} = 0.305, also upper and lower limits of determination range autocorrelation by method Durbin-Watson, for 4 degrees of freedom and the 69 observations are 1.46, respectively 1.63, see that the calculated value is not included in the range [$d_{up;}$ 4 - d_{up}], more precisely between [2.37; 2.54], but between [0; d_{lower}], which indicates the presence of positive autocorrelation of residue values.

The White test for error homoscedasticity shows that errors are homoscedastic and the calculated value is 0.4238 < 1.145 (Table value for $\chi 2$ distribution, 4 degrees of freedom and probability of 95%, the maximum permissible error of 5% = 1.145).

Equation: REGRESIA Workfile: OPERATIONAL PROGRAM HUMAN R...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Dependent Variable: PAYMENTS
Method: Least Squares
Date: 09/25/13 Time: 16:11
Sample: 2008M01 2013M09
Included observations: 69

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOTAL_ALLOCATIONS	0.334988	0.052256	6.410491	0.0000
PROJECTS_SUBMITED	0.188170	0.038300	4.913038	0.0000
PROJECTS_APPROVED	-0.067583	0.056485	-1.196477	0.2359
PROJECTS_CONTRACT...	0.207377	0.072401	2.864269	0.0056
C	-14601603	3984244.	-3.664836	0.0005

R-squared	0.964069	Mean dependent var	64823068
Adjusted R-squared	0.961823	S.D. dependent var	65025573
S.E. of regression	12705335	Akaike info criterion	35.62265
Sum squared resid	1.03E+16	Schwarz criterion	35.78454
Log likelihood	-1223.981	Hannan-Quinn criter.	35.68687
F-statistic	429.2922	Durbin-Watson stat	0.305294
Prob(F-statistic)	0.000000		

Source: own processing based on data provided by: http://www.fonduri-structurale-europene.ro.html

Figure 5. Testing autocorrelation errors, the Operational Programme Human Resources Development, in the period January 2008 - September 2013

Equation: REGRESIA Workfile: OPERATIONAL PROGRAM HUMAN RESOURCES DEVELOP...

View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Heteroskedasticity Test: White

F-statistic	4.946118	Prob. F(14,54)	0.0000
Obs*R-squared	38.76770	Prob. Chi-Square(14)	0.0004
Scaled explained SS	14.35297	Prob. Chi-Square(14)	0.4238

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 09/25/13 Time: 22:38
Sample: 2008M01 2013M09
Included observations: 69

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.43E+14	1.51E+14	-2.266402	0.0275
TOTAL_ALLOCATIONS	4662334.	2315221.	2.013775	0.0490
TOTAL_ALLOCATIONS^2	-0.014879	0.019323	-0.769982	0.4447
TOTAL_ALLOCATIONS*PROJECTS_SUB...	-0.002439	0.022889	-0.106562	0.9155
TOTAL_ALLOCATIONS*PROJECTS_APP...	0.004593	0.023614	0.194497	0.8465
TOTAL_ALLOCATIONS*PROJECTS_CON...	0.006556	0.035829	0.182978	0.8555
PROJECTS_SUBMITED	1380731.	3976381.	0.347233	0.7298
PROJECTS_SUBMITED^2	0.004850	0.006304	0.769425	0.4450
PROJECTS_SUBMITED*PROJECTS_APP...	0.001646	0.020638	0.079739	0.9367
PROJECTS_SUBMITED*PROJECTS_CO...	-0.020649	0.026572	-0.777093	0.4405
PROJECTS_APPROVED	-8943515.	4368084.	-2.047469	0.0455
PROJECTS_APPROVED^2	-0.015044	0.017522	-0.858587	0.3944
PROJECTS_APPROVED*PROJECTS_CO...	0.075873	0.044331	1.711505	0.0927
PROJECTS_CONTRACTED	9893243.	3439002.	2.876777	0.0057
PROJECTS_CONTRACTED^2	-0.064536	0.030782	-2.096522	0.0407

R-squared	0.561851	Mean dependent var	1.50E+14
Adjusted R-squared	0.448256	S.D. dependent var	1.40E+14
S.E. of regression	1.04E+14	Akaike info criterion	67.57711
Sum squared resid	5.83E+29	Schwarz criterion	68.06279
Log likelihood	-2316.410	Hannan-Quinn criter.	67.76979
F-statistic	4.946118	Durbin-Watson stat	1.764160
Prob(F-statistic)	0.000009		

Source: own processing based on data provided by: http://www.fonduri-structurale-europene.ro.html

Figure 6. The White Test in the period January 2008 - September 2013

Because between the payments and the four independent variables studied (allocations, submitted projects, approved projects, contracted projects) there is a strong link, but the parameter value of approved projects proved to be statistically insignificant, the model can be used in the future to achieve a predicted value of payments developments within the Operational Programme Human Resources Development.

4. CONCLUSIONS

In addition, despite the fact that the series of data regarding the payment-value indicator do not follow a regular repartition, the link between this endogenous indicator and the other four exogenous indicators (allocations, total value of submitted projects, total value of approved projects and total value of contracted projects) is very strong. Testing the significance of the in line multiple regression model and of the parameters by using the Excel program and the Eviews program led to the conclusion that the model is invalid

The reasons for which Romania had one of the lowest absorption rates are various and differ from one project to another. While the entrepreneurs are suffocated by the number of notifications that they must obtain in order to complete a file and to obtain co-financing, the local authorities face difficulties since the moment of writing the projects, the civil servants do not have enough experience in managing European financed projects and asking for the services of a consultancy company is not the best solution considering the fact that public institutions are supposed to reduce budget expenditures. On the other hand, management authorities admit the fact that all the requested documents for the file are too thick which leads in some cases to a delay in submitting the projects. The submitted projects can last to be resolved and get approved in some cases almost a year. It's a vicious circle. It's well known that there is no solution to this situation. It's a problem in the system but no one finds the time to fix it.

Despite all the problems that have to face, European funds remain a real help for any type of entrepreneur due to the simple reason that these funds are nonrefundable. It is a fact that at the beginning of the current programming period, more specifically in 2007, Romania gave more to the EU budget than received, but since 2008, Romania became a beneficiary of such funds.

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