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The Socio-economic Impact of European Funds on Eastern European Countries

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Abstract: European Funds are considered to be o reliable solution for emerging economies from Eastern Europe. These funds are granted by European Union to reduce the gap between countries and to ensure a harmonized development at the level of this group of countries that decided to act together as a united economic entity. In fact, European Funds are previously obtained from taxes applied to all European citizens and redistributed by European Institutions in accordance with predefined principles and rules. The redistributive effect is always present in such situation and has clear impact on economies that are net paying for these funds and on economies that are net benefiting from them. This paper presents the results of a quantitative analysis at the level of ten Eastern European Countries (EEC countries) on the social and economic impact of these funds based on panel regression methodology.

Keywords: *European Union, economic integration, European Funds, social cohesion, economic convergence.*

Introduction

European Union was created to encourage the markets and exchanges of goods, services, capital and human resources among member countries. Starting as a free trade area on energy sector, the economic entity evaluated into more sophisticated integration forms being now closed to economic, monetary and political union. The integration process also included more and more countries interested to become part of this very complex process. Today European Union is a powerful and dynamic construction facing with more and more challenges and problems. Local and national authorities agreed to transfer authority to European level, creating

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institutions and policy instruments for strengthening the integration effort. The integration of Eastern European Countries (EEC countries) generated more opportunities for whole EU members but induced additional problems and financial efforts for existing members. The financial support granted by European Union to these countries takes various forms and programs, it is substantial and it is submitted to have a positive social and economic impact on such emerging economies, in accordance with development priorities established by European Commission.

European Funds and socio-economic development

The most important financial instruments proposed by European Union are: (a) *European Regional Development Fund (ERDF)* created to ensure economic and social cohesion between member countries through investment in infrastructure, investment in sustainable jobs, providing financial support for SMEs, innovation and information society; (b) *Cohesion Fund* created to provide financial support for transport infrastructure, renewable energy and environment protection combined with promotion of stronger cohesion and solidarity and (c) *European Social Fund* created to diminish the gaps in terms of wealth and living conditions across EU countries with specific financing schemes for improving human resources, increasing the adaptability of labour force and companies, for better labour market accessibility and for an improved social inclusion.

According to the available data regarding allocation of these funds at the level or Eastern European countries (KPMG reports, 2008 - 2013), the most important amount was allocated for infrastructure (the CEE total allocation for infrastructure was 122 billion EUR), human capital (with 25.2 billion EUR), R&D and ITC (with 24 billion EUR) and technical assistance (with only 5.3 billion EUR). Poland (40 bill. EUR), Czech Republic (24 bill. EUR) and Hungary (20 bill. EUR) contracted the major part of the amount allocated for infrastructure. Overall, Poland was the country that contracted the most important weight from this European Funds (65.6 bill. EUR out of 176.5 bill. EUR for 10 Eastern European countries).

According to the same source, the countries with the highest contracted rate for 2007 – 2012 (contracted signed to be financed by European Funds) are Bulgaria (100 per cent), Czech Republic (97 per cent), Latvia (94 per cent) and the countries with the lowest contracting rate are Slovenia (72 per cent), Slovakia (73 per cent) and Romania (70 per cent). The average for the Eastern European countries in terms of contracting ratio is 83 per cent. The countries with the highest payment ratio for the same period are Czech Republic (62 per cent), Estonia (59 per cent), Lithuania (59 per cent) and Latvia (56 per cent). The countries with lowest payment ratio are Bulgaria (34 per cent) and Romania (12 per cent). The average for the region for payment ratio is 44 per cent. The countries with the highest difference between contracting ratio and payment ratio are Bulgaria (66 per cent) and Romania (58 per cent). The other

Eastern European countries are far away from this value, the average for the region is 39 per cent.

European Funds are submitted to contribute to the development of European countries, to improve the infrastructure, to improve human resources, to boost R&D and innovation. In fact there is a different perspective on this social and economic role of such financing schemes: the funds are extracted from taxes transferred from local and national level to European level in order to be sent back to national level (authorities) in order to be redistributed through different financing programs that require projects and application efforts done by existing private or public operators. When 1000 EUR are initially collected from taxes by local / national public authorities there is a cost associated to this effort. When this amount of 1000 EUR is transferred to European Commission additional costs associated to the administrative stuff occurred. The 1000 EUR that is coming back to national level requires more administrative costs to redistribute this amount of money back to applicants for financing programs. If the administration in a member country is very bureaucratic and corrupted more costs are involved (with funds that are wrongly allocated, wasted or even robbed). All the intermediaries of these funds have no strong contact with the payers of funds (the real provider of funds is not European Commission but European citizens) and with the final beneficiaries of them. Moral hazard and errors are always submitted to occur in such complex schemes. Moreover, the positive impact on the target countries is inconclusive, the case of Greece or Ireland that registered important absorption rate in the last decades is relevant for the discussion about the socio-economic effect. The less developed countries adopted a passive attitude always waiting for allocation paid by contributors from other countries more involved in the productive processes, innovation and exchanges (including export). If initially European Union was developed as a complex agreement for common markets and for facilitating production and exchanges among members, today European Union was transformed in a financing and redistributive vehicle of wealth from more developed countries to less ones through so called European Funds. The interest for public policies and rules to redistribute such wealth significantly increased in past decades. The market mechanisms that distribute the wealth based on the capacity of producing and selling wanted economic goods was slightly substituted by institutional mechanisms of redistribution developed at the level of supra-national level. Starting with the introduction of Euro and consequently monetary mechanisms, the situation became more complicated (monetary policy is used now to finance the public deficits and debts accumulated).

The impact of European Funds on economic growth or development became a research topic in the last years with interesting and conclusive results.

Rodríguez-Pose and Fratesi (2003) used panel regression to test the impact of European funds on economic development and found an insignificant impact on infrastructure and business support, a short term positive effect

in case of agriculture and a medium term positive impact for education and human resource development sector. Puigcerve-Penalver (2004) used panel data approach and a hybrid economic growth model and concluded that `*Structural Funds have positively influenced the growth process*`. Also they observed differences between Programms in terms of economic growth rate.

Varga and Vel (2010) used a New Keynesian general equilibrium model and observed that `*in the short run these interventions boost spending and raise output and they also raise inflationary pressures and could lead to real appreciations and crowd out productive private investment*`. Their conclusion for long run effect is `*that the productivity enhancing effects of infrastructure investment, R&D promoting policies, and human capital investments become gradually stronger and generate large output effects in the long run*`.

Jora, Topan and Mușetescu (2008) observed that in case of Portugal European Funds have no compensation impact on the structural reform deficit, that Ireland significantly reduced the public expenditure with a higher rate than the volume of European Funds. In their opinion, the lack of economic calculation and moral hazard associated to European Funds remain the most problematic issues for economic development based on such financial support.

Ederveen, Groot and Nahuis (2003) used panel regression methodology and concluded that overall Structural Funds are ineffective but `*for countries with high-quality institutions, however, Structural Funds are effective*`.

dall'Erba, Guillain and le Gallo, (2009) used a neo-classical economic growth model and concluded that `*the impact of the total funds (costs) is always significant, but always negative and very small*`.

As we can see from relevant economic literature, the impact of European Funds on economic development of EU member states is considered to be often reduced, even negative.

Data and research methodology

The data used in this research are including as explanatory variable *the absorption ratio (ABR)* measured as total annual payments made for European funded projects contracted by different private and public operators from the countries from Eastern Europe. The dependent variables selected to be explained by this absorption ratio were classified into three different classes of indicators:

- *Class A:* Economic development (GDP per capita annual growth rate – RGDPCAP and GDP annual growth rate – RGDP);
- *Class B:* Social development (People at risk of poverty or social exclusion – POV; Long term unemployment rate – LTUN; Lifelong learning rate – LLR and Inequality of income distribution – INCDIST);
- *Class C*: Competitiveness (Exports as share in world exports – X; Exports of high tech as share in total exports – HTEXP and Business enterprise R&D expenditure by economic activity – RD).

Our research hypothesis is to obtain a positive and statistical

relevant relationship between all indicators included in the classes referring to economic development and competitiveness and absorption effect and a negative and statistical relevant relationship between long term unemployment rate, people at risk of poverty or social exclusion and inequality of income distribution.

A positive and statistical relevant relationship is expected also between lifelong learning rate (LLR) and absorption rate (ABR).

The idea is to test if absorption ratio improved the economic development and competitiveness and reduced the social difficulties in analysed countries.

The countries included in the model are the 10 countries from Eastern Europe members of European Union: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. The data are covering 2008 and 2012 and are referring to the 2007 – 2013 funding period. The data for absorption rate were provided by KPMG annual reports on Eastern Europe and the data about dependent variables included in those three classes are provided by Eurostat.

Table 1. Descriptive statistics on dataset

	ABR	RGDP-CAP	RGDP	POV	LTUN	LLR	INCDIST
Mean	0.093220	0.590000	0.224000	-0.264000	4.596000	5.914000	5.000000
Median	0.100000	1.750000	1.600000	0.000000	3.700000	4.700000	5.000000
Maximum	0.235000	9.500000	9.600000	3.900000	9.400000	16.20000	7.300000
Minimum	0.010000	-16.30000	-17.70000	-15.90000	1.100000	1.200000	3.200000
Std. Dev.	0.061341	5.592789	5.523957	2.778104	2.387036	4.339614	1.347257
Skewness	0.264451	-1.217851	-1.380733	-3.569425	0.614496	0.928800	0.148659
Kurtosis	2.380868	4.434314	5.032290	21.30801	2.135022	2.715732	1.599759
Jarque-Bera	1.381379	16.64564	24.49146	804.4715	4.705437	7.357259	4.268902
Probability	0.501230	0.000243	0.000005	0.000000	0.095110	0.025258	0.118310

	EXP	HTEXP	RD
Mean	0.470000	0.051421	0.109367
Median	-0.800000	0.022565	0.097012
Maximum	17.10000	0.433640	0.733557
Minimum	-11.10000	-0.334200	-0.380150
Std. Dev.	6.483267	0.167106	0.197947
Skewness	0.696243	0.625629	0.730339
Kurtosis	3.144682	3.146853	4.846733
Jarque-Bera	4.083227	3.306690	11.55001
Probability	0.129819	0.191409	0.003104

Source: own estimations based on collected data

The unit root test for panel of countries (see Table 2) revealed that variables included in the model have stationary behaviour (mean, variance and covariance are not shifting over the time in this panel of data). We used to test the stationary behaviour the Levin, Lin and Chu test (2002). The method used to test the relevance of absorption rate (ABR) on selected dependent variables is pooled LS regression with fixed effects (that assumes a constant intercept over the time.

Table 2. Unit root tests on variables (Levin, Lin and Chu t values)

Unit root test Levin, Lin & Chu t*	**Statistic**	**Prob.****
ABR	-2.12666	0.0167
RGDPCAP	-8.86408	0.0000
RGDP	-10.1958	0.0000
POV	-13.2818	0.0000
LTUN	-1.51788	0.0645
LLR	-6.27955	0.0000
INCDIST	-2.59769	0.0047
EXP	-7.7520	0.0000
HTEXP	-3.0526	0.0011
RD	-12.8568	0.0000

Source: own estimations based on collected data.

Results

According to Pooled OLS Regressions run on data series we obtained the following results (see Table 3 and Table 4):

- The impact of European Funds absorption ratio (ABR) on GDP per capita growth rate (RGDPCAP) is positive and statistically significant;

- The same impact is registered in case of GDP growth rate (economic development);

- A positive but not significant impact is registered on POV - People at risk of poverty or social exclusion (meaning that higher absorption ratio is positively correlated with this indicator). The explanation could be that crisis time significantly increased the risk of poverty and social exclusion and European Funds are not able to reduce this social problem.

- A positive impact but statistically significant is registered on LTUN – Long term unemployment rate. The allocation of European Funds at the level of Eastern European Countries seems to have a very limited (reduced) influence on long term job creation process (higher absorption rate is corresponding to a higher long term unemployment rate);

- Lifelong learning rate (LLR) is positively and statistically significant correlated with absorption rate (meaning that higher absorption of European Funds produced an improvement on human resource);

- Inequality of income distribution

– INCDIST is not statistically explained by absorption ratio at the level of Eastern European Countries. Moreover, the correlation is positive meaning that a higher absorption ratio is corresponding to a higher inequality of income distribution.

- A positive but not significant relationship is identified in case of correlation between absorption and Exports as share in World exports (EXP). The countries with a higher absorption ratio registered an improved share of their exports in total world exports;

- A negative relationship but not significant is revealed in case of Exports of high tech as share in total exports – HT Exports. The idea is that the countries with a higher absorption ratio for European Funds innovated less in terms of trading such high tech products. Anyway, current economic crisis significantly changed the length of production process and adjusted the efforts and allocation for innovating and producing high tech products. European Funds had limited impact on this specific advanced sector;

- The impact of absorption ratio on Business enterprise R&D expenditure by economic activity – RD is positive and statistically relevant meaning that countries with higher absorption ratio registered higher volume and intensity of private R&D allocation.

Table 3. Pooled OLS Model outputs

Relationship	Coeff.	t-Stat.	Prob.	R-sq.	F-stat.	DW stat.
ABR -> RGDPCAP	58.13	4.56	0.00	0.39	2.48	2.00
ABR -> RGDP	55.80	4.43	0.00	0.39	2.45	1.94
ABR -> POV	5.88	0.78	**0.44**	0.13	0.59	1.89
ABR -> LTUN	13.48	3.23	0.00	0.64	6.91	1.13
ABR -> LLR	5.92	2.59	0.01	0.97	115.33	1.83
ABR -> INCDIST	0.22	0.25	**0.81**	0.95	74.27	1.64
ABR -> EXP	22.35	1.34	**0.19**	0.22	1.11	2.61
ABR -> HTEXP	-0.31	-0.70	**0.49**	0.15	0.70	1.73
ABR -> RD	1.41	3.26	0.00	0.44	3.04	2.80

Source: own estimations based on collected data.

Table 4. Statistical relevance and the sign of correlation with dependent variable ABR (absorption ratio)

Area of interest	Relationship	Relevance	Sign	Estimated sign
Economic development	**ABR -> RGDPCAP**	Yes*	Positive	Positive
	ABR -> RGDP	Yes*	Positive	Positive
Social development	**ABR -> POV**	No	Positive	Negative
	ABR -> LTUN	Yes*	Positive	Negative
	ABR -> LLR	Yes*	Positive	Positive
	ABR -> INCDIST	No	Positive	Negative
Competitiveness	**ABR -> EXP**	No	Positive	Positive
	ABR -> HTEXP	No	Negative	Positive
	ABR -> RD	Yes*	Positive	Positive

* - 5% confidence level

Concluding remarks

This research performed on data on 2007 – 2013 Programming Phase and based on Pooled OSL Regression with fixed effects confirmed that European Funds have a limited impact on social development or competitiveness on those ten Eastern European Countries included in the model. The only positive impact is fully confirmed on economic development associated to GDP per capita growth rate and GDP growth rate. Another relevant result is registered in case of R&D efforts of business sector and human resource. These results are similar with previous studies performed on this specific issue.

This limited impact of European Funds, especially on social development and competitiveness could be explained by at least two reasons: 1. European Funds are obtained from taxes applied to European citizens and business sector and have a very important redistributive role (being also significantly reduced by expenditures for keeping alive this system at local and European level) and 2. A lot of projects financed by such public funds are not truly investments producing real profits / returns after the implementation or construction phase. Therefore, the economic growth model proposed by European Union is very problematic, especially during crisis time.

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