

COMPARATIVE ASSESSMENT OF EFFICIENCY IN ATTRACTING EUROPEAN FUNDS BY REGIONS OF EASTERN EUROPEAN COUNTRIES

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Abstract: *In the current decentralization reforms and severe budget constraints faced by Eastern European countries, we consider as imperative to analyze the effectiveness of structural funds management at regional level. Therefore, the purpose of this study was to estimate the technical efficiency of attracting structural funds by the regions in Poland, Bulgaria and Romania, determining the factors that influence efficiency and its implications for local development. The calculations were based on the mathematical model Data Envelopment Analysis, the main source of data being EUROSTAT. The estimates confirm the strong need for systemic reforms in the organization and operation of the development regions: modification of current transfer system, strengthen financial autonomy and solve the problem of excessive fragmentation of administrative-territorial structure, all having a negative impact on the efficiency of absorption of European funds developing regions of analyzed states.*

Keywords: absorption capacity; European funds; DEA method; CEE countries

JEL Classification: A1; A2

Introduction

Benchmarking the EU accession process is one of the major areas of structural funds management. This assessment provides decision makers the necessary information on the consequences of projects, plans, policies and regulations regarding the designated objectives to be primarily achieved. Therefore, it may be noted that benchmarking is more likely a strategic tool in the EU integration process. The European Union proposes a single funding system for managing economic integration and the introduction of specially designed funding schemes for almost all policy areas to promote economic and social cohesion among countries. Current European financing operations are based on rigorous management, monitoring, control and evaluation. European Commission states that most effects of cohesion policy cannot be expressed in quantitative terms.

There are several studies in the literature that are concentrated on evaluating the efficiency of allocated funds and their impact on economic growth in the context of comparative performance evaluation. Some econometric analysis say that European funds have a negligible or even negative impact on convergence, while others imply a significant positive impact. Those studies suggest a number of different models and approaches to calculate the efficiency and impact of European funds: increasing levels of Europeanization, the capacity to absorb EU funds or to calculate additional added

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value resulting from Community assistance; finally, all tending to explore the relationship between European funds and their impact on the region which attract them.

OECD defines absorption capacity as accumulating and disseminating adequate information, capacity building in local government and civil society to formulate and implement development projects (OECD, 2006). Absorption capacity leads to a strong performance of EU funds only if the economy is fully taken into account (Sumpikova *et al.*, 2004). Sumpikova *et al.* (2004) define absorption capacity as far as a state is able to fully acquire the financial resources allocated from the EU. The literature on absorption capacity of EU funds in candidate states offers three main definitions (Zerbirati, 2004; Oprescu *et al.*, 2005; Georgescu, 2008; Lupu *et al.*, 2014):

- Macroeconomic absorption capacity, which can be defined and measured in terms of relation between the GDP and the structural funds allocated (upper limit for the structural and cohesion funds was generally set at 4% of GDP respective states)

- Administrative absorption capacity, which can be defined as the ability and skills of central, regional and local authorities to prepare acceptable plans, programs and projects, to decide on them, to organize coordination, main partners, to deal expeditiously and administrative bottlenecks, work reports requested by the Commission and to finance and supervise applying their implementation properly, avoiding fraud as much as possible.

- Financial absorption capacity, which means the ability to co-finance programs and projects supported by the EU, to plan and guarantee these national contributions in multi-annual budgets, and to allocate these contributions from as many partners (public and private) interested in a program or project.

1. Interregional disparities in economic development from Romania, Bulgaria and Poland

Eastern European States entered the transition process with a relatively low level of regional disparities as compared to states having a market economy tradition. However, these disparities have rapidly grown and, in particular, between the regions that include the capital and other regions. Inter-regional disparities are absolutely small as compared with the European Union, but in relative terms, they have reached levels comparable to those in the Czech Republic, Hungary and Germany.

Regional development policy is a relatively new concept in Romania. Since 1998, the country was divided into 8 regions (NUTS II level), grouping the 41 existing counties and the capital Bucharest, as displayed in table no. 1. Set out on a voluntary basis, these regions have the status of administrative units, but represent territorial units large enough to constitute a good basis for

developing and implementing regional development strategies, enabling efficient use of financial and human resources.

Table 1 - Statistical information on the development regions in Romania, Bulgaria and Poland

	Surface	Population	GDP/ capita		Surface	Population	GDP/ capita
	[km ²]		[euro]		[km ²]		[euro]
ROMANIA			5800	POLAND			9200
Nord-Est	36850	3674367	5200	Łódzkie	18219	2571534	8500
Sud-Est	35762	2848219	5600	Mazowieckie	35579	5164612	15000
Sud Muntenia	34489	3379406	3600	Małopolskie	15183	3298270	7800
Sud Vest Oltenia	29212	2330792	4800	Śląskie	1233309	4620624	9800
Vest	32028	1958828	4800	Lubelskie	25155	2175251	6200
Nord-Vest	34159	2746064	13800	Podkarpackie	17844	2101732	6200
Centru	34100	2533021	4500	Świętokrzyskie	11672	1281796	7000
Bucuresti-Ilfov	1811	2242377	6600	Podlaskie	20180	1197610	6700
			4800	Wielkopolskie	29826	3374653	9600
BULGARIA			4800	Zachodniopomorskie	22896	1693533	8000
Severozapaden	190703	923000	2900	Lubuskie	13985	1008424	7800
Severen tsentralen	149740	928000	3100	Dolnośląskie	1994674	2914362	10400
Severoiztochen	144874	992000	3900	Opolskie	94125	1044346	7300
Yugoiztochen	197987	1124000	3900	Kujawsko-Pomorskie	17 97134	2 098 370	7700
Yugozapaden	203064	2132848	8200	Warmińsko-Mazurskie	24 17317	1 451 950	6800
Yuzhen tsentralen	223651	154000	3300	Pomorskie	18293	2201069	8800
European Union (27 countries)			24500				

Source: Eurostat

In Romania, except for Bucharest, whose situation in the economic landscape of the country is completely special, growth followed a west-east direction, proximity to western markets acting as a growth factor delivery. Although statistics show some oscillations in time, due to local factors, economic growth had a significant geographic component; underdeveloped areas are concentrated in the Northeast, on the border with Moldova and South along the Danube. Underdevelopment appears to be largely correlated with unemployment and with the predominance of rural activities, and the inability to attract foreign direct investment. The table below summarizes key information on developing regions. North East Region is characterized both by its dependence on agriculture and the proximity to the border with Moldova and Ukraine. The same is true, to some extent, in South Muntenia which is also dependent on agriculture and the Danube has acted as a barrier to cross-border trade. Western and central parts of the country were benefiting from their position closer to Western markets and lowered their dependence on primary sector, benefiting even more from FDI.

Poland has 16 regions corresponding to NUTS II level. In terms of territory, the biggest are Mazowieckie, Wielkopolskie and Zachodniopomorskie while in terms of population, are Mazowieckie (capital region, 5.1 million inhabitants) and Slaskie (Poland's largest concentration of old industries, 4.9 million inhabitants); the smallest in terms of population is the western region,

Lubuskie (1 mln. inhabitants). The decentralization reform in 1999 gave complete autonomy to regions and responsibility for returning their economic development. Along with the transformation and growth of the 90s, regional and social disparities in Poland have become increasingly apparent (Table 1). As it can be seen from table 1, in economic terms, the differentiation between Polish regions is relatively low: the relationship between GDP per capita of the poorest (Lubelskie) and the richest (Mazowieckie) region is about 1: 2.2 which is much less than in countries like Italy or Spain. The poorest regions of Poland are located in the eastern part of the country: Lubelskie, Podkarpackie, Podlaskie, Warmino-Mazurskie and Świętokrzyskie.

In Poland, like in other East European countries, the capital region (Mazowieckie) is the most developed in the country because of a significant concentration of economic activity in the country's political center. Slaskie and Wielkopolskie are the only regions, apart from Mazowieckie, which are above national average. Most economically disadvantaged regions in Poland are the country's eastern periphery (Podlaskie, Lubelskie, and Podkarpackie). Location of these regions (in the vicinity of less developed countries such as Belarus, Ukraine and Russia) offers limited possibilities for fruitful cross-border cooperation and joint economic initiatives. The second factor affecting the economic situation of peripheral areas is the predominance of agriculture in the regional economy, which still needs urgent structural reforms to increase competitiveness in the future.

Looking at Bulgaria we can say that it is divided into six development regions characterized by the same disparities as the other considered countries. We can add that five out of six regions are the poorer regions from the whole European Union; only the region that comprises the capital Sofia (Yugozapadan) is relatively more developed. The economy of regions is mostly based on agriculture and tourism, industry and services being more developed especially in the capital. Also, we must mention that Bulgaria's regions have reduced autonomy.

2. Data and methodology

In our efficiency analysis, we will use the Data Envelopment Analysis (DEA) methodology. DEA is a non-parametric analysis of deterministic performance, developed by Charnes *et al.* (1978). DEA is an "oriented data" approach to assess the performance of an equal set of units called decision-making units (DMUs) which convert multiple inputs to multiple outputs (Cooper *et al.*, 2000). DEA is among the preferred methods for analyzing the performance or efficiency over a number of advantages over parametric methods. Unlike other methods, such as regression analysis that require a priori assumptions, DEA requires very few assumptions, never attempting to explain the nature of the relationship between inputs and multiple outputs belonging analysis units in deterministic manner.

In DEA, the relative efficiency of any DMU is calculated as the weighted sum of outflows from the weighted sum of inputs, being a scalar value ranging between zero and one, which is evaluated by a linear programming model. The calculation of the efficiency of each DMU, DEA forms a border „possibility of output" to the most efficient DMU based on available data, if and only if the performance of other control units show that some of the inputs and outputs can be improved without worsening overall efficiency. The objective function for DMU, that is being evaluated, includes maximizing the value of output relative to the inputs.

There are two types of borders in DEA: one that refers to constant returns to scale (CRS) and one to variable returns to scale (VRS), respectively. As the name indicates, an implicit assumption on the yields of scale associated with each area and thus, the opportunity of a particular envelope surfaces is frequently determined (dictated) the economic assumptions or otherwise made on the set of data to be analyzed.

Assuming constant returns to scale are only possible when agents are operating at an optimal scale. Imperfect competition, financial constraints, etc. can cause an agent not to operate at optimal scale. Banker *et al.* (1984) suggested an extension of the DEA model with constant returns to scale (CRS DEA) to explain situations with variable returns to scale.

The DEA models evaluate the effectiveness of the units surveyed (in our case, the development regions in the 3 considered countries) with any number of inputs and outputs. The coefficient of efficiency (CE) represents the ratio between the weighted sum of outputs and the weighted sum of inputs. In our analysis, for each region we select the input and output weights that maximize the efficiency scores. The coefficient of efficiency (CE) ranges from 0 to 1. At the DEA model relative to inputs, CE for the most efficient regions (located on the border line efficiency) is always equal to 1, while CE for ineffective regions are smaller than 1. DEA model relative to outputs, CE for the most efficient regions (situated on the efficient frontier) are always equal to 1, while CE for ineffective regions are greater than 1. Also, DEA allows us to calculate the improvement needed to turn the ins and outs ineffective in the most efficient values.

Assuming we have 3 countries (Romania, Poland and Bulgaria) and 30 NUTS 2 regions, each with m inputs and r outputs, score relative effectiveness of a test region (q) is obtained by solving the equations (1) - (5) (Zhu, 2012).

For the DEA models relative to inputs (with multiple inputs and outputs), assuming variable returns to scale VRS, the used formulas are:

$$\max z = \sum_i^r u_i y_{iq} + \mu$$

$$\sum_i^r u_i y_{iq} + \mu \leq \sum_j^m v_j x_{jk}, \quad k=1,2,\dots,n$$

$$\sum_j^m v_j x_{jq} = 1$$

$$u_i \geq \varepsilon$$

$$v_j \geq \varepsilon$$

where: z is the coefficient of efficiency for the unit U_q , u_i are the weights assigned to output i , v_j are the weights assigned to the input j , ε is an infinitesimal constant, x_{jk} is the value input unit j for unit U_k , x_{jq} is the value input unit j for the unit U_q , Y_{ik} is the unit output value and drive U_k , Y_{IQ} unit output value for U_q , m represents inputs and r outputs.

Applying the DEA model requires the definition of input variables related to output. Literature and data availability are determining factors for choosing the model variables. Detailed and standardized data availability was a major problem because absorption of European funds analysis by development regions are among the first studies in the literature.

Three European countries were analyzed in this study: Romania and Bulgaria (countries that absorbed the fewest structural funds) and Poland (champion of European funds absorption), taking into consideration 30 development regions. Specific quantities of data input and output for these three countries have been collected and processed through Eurostat, national governments and institutions managing European funds websites.

The number of inputs and outputs was determined according to the need to maximize discrimination observed in the existing units. Thus, we used three variables output and two input. To decide which variables are most suitable to use, we considered set of internationally recognized indicators to analyze the efficiency of absorption of structural funds.

There are two input variables: the amount of absorbed EU funds by region and the number of projects implemented by each region. The value of Structural Funds absorption indicator was analyzed to demonstrate the increasing influence on regional development, at different stages of absorption (lowest vs. highest). Although paradoxically, one of the main issues mentioned in recent analyzes of the European Commission is the ability or inability of European states to absorb EU funds, a phenomenon that is assigned to financial fragility of these countries. Also, very often mentioned cause is the reduced capacity of countries to prepare projects eligible for EU funds absorption. It is assumed that there is a direct relationship between the absorption of structural funds and development of a region in the respective countries.

The second considered indicator is the number of incoming projects undertaken by the respective regions. Analyzing the variable referring to the number of finished projects seems significant due to the major differences between regions: while in Romania and Bulgaria the number does not exceed several hundred projects, in Poland it reaches thousands. The indicator reflects the strength of the proposed projects in order to create an impact on relevant factors such as: the number of potential beneficiaries, impact duration and geographical coverage.

Three output variables were considered, namely the GDP (based on purchasing parity EU average), the unemployment rate and the risk of poverty of each region. Analysis of these three indicators was achieved from ERDF objectives and requirements: encourage cohesion and reducing regional disparities.

Gross domestic product per capita in purchasing power standards as compared to the EU average (PPS-EU) is the ratio of the gross domestic product (GDP) expressed in purchasing power standards and the total population. GDP in PPS-EU is obtained by converting a fictional currency conversion using purchasing power parity index (express connections between same good prices in different countries establishing a common currency). The variable can be justified by the fact that attracting European funds leads to infrastructure improvement, new business opportunities, cost savings and revenue growth, and cumulatively leading to a real GDP growth in the region.

Unemployment is a negative state of the economy materialized in a significant imbalance in the labor market where labor supply is greater than demand; i.e. lack of a job for a while. The indicator is considered as one of the objectives of the ERDF in order to create sustainable jobs. It is assumed that regions which absorb more EU funds will develop a greater number of new businesses and therefore employment will increase, eventually leading to a decline in unemployment.

Risk of poverty rate is the share of persons with an equivalent disposable income (after social transfers) below the risk of poverty, which is set at 60% of median national disposable income after social transfers' equivalent. This indicator does not measure wealth or poverty, but only those on low incomes compared to other residents of the same country. Part of social strategy at EU level, social inclusion has been recognized as a common objective of the member states and became part of the national anti-poverty plans. The indicator was analyzed because it is assumed that the attraction of bigger European funds would lead to poverty reduction.

3. Results of analysis

The analysis was based on the statistical regional data published annually by Eurostat. As mentioned before, the variables considered in the model are the inputs (amount absorbed EU funds

and the number of European projects contracts) and the outputs (GDP based on purchasing power parity EU, unemployment and the risk of poverty).

In Table 1 of the annexes input-output data for the 30 regions analyzed are separately displayed for each country. Therefore, for the indicator referring to executed contracts we see that Bulgaria is the country with the fewest (of the order of 100-200), followed by Romania (300-500) and Poland (800-4500). When looking to the EU funds amounts absorbed we also observe significant differences: values from 60.8 million (Ilfov region) to 221.77 million Euro (Southeast) in the case of Romania; from 110 million (Northern Central) to 185 million (Central Region) in Bulgaria and from 1162 million Euro (Lubuskie) to 3529 million (Wielkopolskie) Poland. For this indicator it can be easily seen that the total outstanding balance of the regions of Romania and Bulgaria are taken together mean within a region of Poland. GDP purchasing power parity relative to the EU shows that the poorest EU regions are in Romania (North-East and South-West) and Bulgaria (Northwestern, Northern, Central and Southern Central Region) with values around 30% of European average value of the indicator. The richest regions, with rates of over 70% are in Bucharest-Ilfov (Romania), Southwestern (Bulgaria), Mazowieckie and Dolnośląskie (Poland).

In table no.2 we present the descriptive statistics for the 30 analyzed regions. For the number of ongoing contracts, the minimum (95) is set by region North Central - Bulgaria, the maximum (4501) for Śląskie (Poland) and the average is 1144 contracts. For amounts absorbed EU indicator, the minimum (euro 60.8 million) is the Bucharest-Ilfov region (Romania), maximum (3529 mil. Euros) Wielkopolskie (Poland), averaging 1301 millions Euros. It may be noted here that all regions of Romania and Bulgaria is below the average outstanding balance, while in the case of Poland all regions are above average.

Table 2 - Descriptive statistics for the 30 regions analyzed

Variable	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness	Kurtosis
<i>Contracts</i>	95	4501	1144.37	1024.34	1049285.27	1.29	2.32
<i>Euro amounts absorbed</i>	60.80	3529	1301.41	1217.50	1482309.93	.47	-1.24
<i>PIB PPC UE</i>	26	111	51.03	19.58	383.48	1.54	2.87
<i>Unemployment</i>	1.90	18.2	9.95	3.27	10.69	-.27	1.35
<i>Risk of poverty</i>	43.30	76.9	64.22	11.14	124.27	-.67	-1.11

Source: Authors' calculations

The correlations coefficients of the considered variables that are taken into account when estimating the model are presented in Table 3. The number of executed contracts is strongly correlated with the amounts absorbed and the risk of poverty; the amounts of EU funds attracted is very strong and directly correlated with the number of executed contracts and the risk of poverty; GDP (PPC-

UE) is negatively correlated with the unemployment rate and the risk of poverty; negative correlation between GDP (PPC-UE) and unemployment rate; the risk of poverty is directly correlated with the number of executed contracts, the absorbed amounts raised and GDP (PPC-UE).

Table 3 - The correlations between indicators for the 30 regions analyzed

	1	2	3	4	5
1. Contracts	1				
2. Euro amounts absorbed	.900*				
3. GDP(PPC-UE)	.300	.404*	1	-.520**	.611**
4. Unemployment	.064	.106	-.520**	1	-.350
5. Risk of poverty	.694*	.732*	.611**	-.350	1

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).

Source: Authors' calculations

The DEA model for efficient assessment of European funds by developing regions includes three values of output and two inputs. DEA scores efficiency for the regions studied are entered into the database using the model outputs dedicated as target regions to maximize the output result of input values. Our approach is based on model assumptions DEA variable returns of scale (VRS). The results of DEA on the performance data can be found in table no. 4.

Table 4 - Classification of regions by efficiency for absorption of EU funds

Country					
ROMANIA	Efficiency	POLAND	Efficiency	BULGARIA	Efficiency
Centru	0.77	Łódzkie	1	Severozapaden	0.728802
Nord-Est	0.329533	Mazowieckie	1	Severen tsentralen	0.4617
Sud-Est	0.422655	Małopolskie	0.713938	Severoiztochen	0.6984
Sud - Muntenia	0.495489	Śląskie	0.605601	Yugoiztochen	0.625194
Bucuresti - Ilfov	1	Lubelskie	0.600246	Yugozapaden	0.586464
Sud-Vest Oltenia	0.419031	Podkarpackie	0.580441	Yuzhen tsentralen	1
Vest	0.891752	Świętokrzyskie	0.851098	<i>Country mean</i>	<i>0.686</i>
Nord vest	0.57	Podlaskie	0.550127		
<i>Country mean</i>	<i>0.612308</i>	Wielkopolskie	0.618635		
		Zachodniopomorskie	0.967515		
		Lubuskie	1		
		Dolnośląskie	1		
		Opolskie	0.962738		
		Kujawsko-Pomorskie	1		
		Warmińsko-Mazurskie	0.890137		
		Pomorskie	0.820136		
		<i>Country mean</i>	<i>0.822538</i>		

Source: Authors' calculations

As can be seen from Table 5, between Romania and Bulgaria (countries that attracted the fewest European funds) and Poland (which attracted most funds) there are significant differences: the first two countries have an average efficiency of 0.61 and 0.686, compared to Poland which shows 0.822. Regions that are most effective in attracting European funds are divided between the three countries, but in Romania and Bulgaria there are only two regions that are maximum effective: Bucharest-Ilfov (1) and Yuzhen tsentralen (1), while Poland gives five champion regions: Łódzkie, Mazowieckie, Lubuskie and Dolnośląskie Kujawsko-Pomorskie. The most ineffective regions in attracting European funds are located in Romania (North-East, Southeast and South - Muntenia, South-West Oltenia) and Bulgaria (Severen tsentralen).

Table 5 - Regions most effective vs. ineffective in attracting European funds

Most effective regions		Most ineffective regions	
Bucuresti-Ilfov (1)	Romania	Nord-Est (0.329533)	Romania
Yuzhen tsentralen (1),	Bulgaria	Sud-Vest Oltenia (0.419031)	Romania
Łódzkie (1)	Polonia	Sud-Est (0.422655)	Romania
Mazowieckie (1)	Polonia	Severen tsentralen (0.4617)	Bulgaria
Lubuskie (1)	Polonia	Sud – Muntenia (0.495489)	Romania
Dolnośląskie (1)	Polonia	Podlaskie (0.550127)	Polonia
Kujawsko-Pomorskie (1)	Polonia	Nord vest (0.57)	Romania

Source: Authors' calculations

Conclusions

The study focuses on benchmarking the performance capacity of absorption of structural funds for 30 development regions in three east European countries (Bulgaria, Poland and Romania). DEA analysis method is used and the results show that the most efficient regions are located in Poland and in regions containing capital for Romania and Bulgaria; the most inefficient regions are found in Romania (5), Bulgaria (1) and Poland (1).

Given the definition of absorption capacity specified above, we can assume that it is mainly influenced by managerial and administrative capacities of financing. The relationship between absorption capacity of structural funds and regional economic situation is paradoxical, demonstrating that the most disadvantaged regions are facing the greatest difficulties in absorbing these funds, although the need for financial support for restructuring the economy is paramount in these regions. The main explanation for this phenomenon is given by two factors: on the one hand, the difficulties faced by regional authorities due to lack of experience and qualifications, followed by red tape and the slowness of EU decision-making procedures in circumstances where sequential programming especially central and regional differences are quite clear. Therefore, absorptive capacity largely depends on institutional factors, referring to the EU structures, as well as national ones. Other

determining factors relate to programming and the development of departments for administrative capacity and institution building in the pre-accession period. According to the Commission's recommendations and best practices in EU countries, a golden rule becomes evident, namely: the possibility of higher rates of absorption is directly proportional to the number of new member states institutions involved in different levels of management and evaluation of projects developed.

The contribution of this study to the literature states in providing an analytical approach for performance comparison in attracting EU funds. This approach can be further used as a common model for efficiency analysis for candidate countries.

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Annexes

Table nr.1 Input-output indicators for the 30 development regions

ROMANIA	Contracts	Euro (mil.)	PIB PPC UE	Unemployment	Risk of poverty	POLAND	Contracts	Euro (mil.)	PIB PPC UE	unemployment	Risk of poverty
Nord-Vest	426	170.8	42	4.1	68.1	Łódzkie	2203	2168	58	11.1	76.9
Centru	390	187.7	45	5.7	68.4	Mazowieckie	1736	3435	102	8	75.9
Nord-Est	494	283.2	29	9.8	47.7	Małopolskie	2700	2639	53	10.4	75.7
Sud-Est	417	221.7	38	10.2	48.3	Śląskie	4501	3497	67	9.4	75.3
Sud - Muntenia	501	192.7	39	9.9	56.5	Lubelskie	2286	2625	42	10.5	66.8
Bucuresti - Ilfov	295	60.8	111	1.9	68.5	Podkarpackie	2179	2809	42	13.2	66.7
Sud-Vest Oltenia	439	210.2	36	8.1	53.1	Świętokrzyskie	1182	1861	47	13.1	66.5
Vest	305	130	53	3.8	63.8	Podlaskie	1140	1274	45	9.2	66.4
						Wielkopolskie	1993	3529	65	8.5	73.2
BULGARIA						Zachodniopomorskie	1465	1647	54	10.9	72.9
Severozapaden Northwestern	110	117.5	26	12.3	47.4	Lubuskie	861	1162	53	9	72.6
Severen tsentralen North(ern) Central	95	110	29	14.3	46.1	Dolnośląskie	1813	2583	70	11.1	74
Severoiztochen Northeastern	125	137.5	36	18.2	49	Opolskie	1115	1332	50	9.5	72.8
Yugoiztochen Southeastern	140	150	36	11.9	43.3	Kujawsko-Pomorskie	1629	1948	52	11.9	74.5
Yugozapaden Southwestern	110	130	75	8.2	60.9	Warmińsko-Mazurskie	1929	1963	46	11	74.2
Yuzhen tsentralen Southern Central Region	210	185	30	13.8	47.4	Pomorskie	1542	2283	60	9.5	73.9

Source: Eurostat

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