The impact of labour market imbalances
on regional disparities in the post-crisis context

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Abstract. *The paper aims to examine how existing imbalances in the labour market influence regions' future development and to formulate a series of recommendations that will allow that catching up process to be done in an sustainable manner.*

Basically, the objective refers to the integration of the development and restructuring strategy of the labour market policy to strengthen regional competitive advantage.

Our intentions is to stress the fact that between labour market imbalances and regional disparities exists a bi-univocal relationship, both manifested in a complex external environment, dominated by variable factors and uncertainty.

To achieve paper' objectives scientific methods like: descriptive statistics, correlation analysis and aggregate indexes are applied.

The main results are focused on formulating a set of scientifically based recommendations that can be used to conceive strategies whose overall objective is the reduction of economic disparities existing in certain regions through training and proper human resources development.

Keywords: labour market; human resources; regional disparities; competitive advantages; post-crisis competitiveness.

JEL Codes: J21, J24, R10.
REL Codes: 12I, 16I.

Introduction

European Commission addresses the issue of regional disparities in conjunction with the expected results of its cohesion policy: economic growth and employment. Thus, the latest report on economic and social cohesion Investing in Europe's Future (*Fifth Report on Economic, Social and Territorial Cohesion*, 2010) contains a comprehensive analysis of the economic, social and environment situation in the Member States and their regions and evaluates the impact of cohesion in terms of priorities and new challenges.

The report points out that cohesion policy investments have significantly contributed to reducing disparities in the level of economic development (the differences between EU regions in terms of GDP per capita fell), at the same time underlining the major regional differences in areas such as productivity, infant mortality rates, vulnerability to climate change.

At their turn, European Union member states have focused on raising the living standards of their citizens and national welfare by increasing national and regional competitiveness and diminishing regional disparities.

Great Britain, for example, annually produces the report on Regional Economic Performance Indicators (formerly known as Regional Competitiveness & State of the Regions). The report has as main purpose the presentation of statistical information on the factors that determine economic performance, competitiveness and the state of the regions (indicators of global competitiveness, labour market, business development, infrastructure, etc.) required to develop regional strategies, monitoring and evaluating it over time.

Regarding Romania, in order to assess regional performance, the Group of Applied Economics (GEA) proposed in 2007 a methodology that uses two categories of indicators: those taken from official statistics ("hard" factors) and those that can be obtained by processing responses to questionnaires at regional and local levels ("soft" factors). The set of indicators and the methodology developed for their processing are a useful tool for local and regional institutions to monitor performance and identify courses of action which must be included in development strategies.

Also, a number of national and regional institutions have been interested in including the competitiveness objective in development strategies, plans and programs (National Strategic Reference Framework 2007-2013, National Development Plan 2007-2013, Regional Operational Programs, etc.).

In Romania, the theme of economic performance at regional level has been addressed not only by institutions but also by specialists, who intended to identify and quantify the factors that can lead to reducing disparities between Romania and other EU countries, or among the eight development regions.

Thus, using the decomposition of competitiveness by influence factors method, in the paper entitled Regional Competitiveness in Romania (Vincze, 2004), the author examines the disparities between developing regions of Romania and compares Romanian situation with that of European Union and Hungary. The main recommendation is that, on short and medium term, strategic option to be the increase in national competitiveness and not necessarily reducing regional disparities.

Other authors who have tackled the same problem (Jula, 2003, Constantin, 2005, Constantine, Banica, 2007, Zaman, Goschin, 2005, Goschin 2007, Jaba et al., 2009, 2010) reached similar conclusions on the issues related to regional competitiveness. In this case, the focus was on identifying factors that can stimulate performance growth. One solution is a proper use of regional resources, their competitive advantages and productivity increase.

In this respect, a key factor of long-term economic growth is human resources, through its qualitative dimension: knowledge, skills, and abilities. Today, we hear increasingly more about a new type of worker (knowledge-worker), representative of the knowledge economy, which, at the microeconomic level, is involved in research and development activities, innovation, consulting lifelong learning and application of existing technologies, and, at the macroeconomic level, contribute to increasing the capacity to produce goods and services with high added value obtained in sectors based on intensive use of knowledge.

Statistical analysis at regional level

Growth theories and empirical studies carried out at regional and national level represent the support for determining the key factors of regional disparities and the methodology of analyzing it.

In order to quantify regional performance, it is necessary to start from their main sources: productivity and employment, studying to what extent each of these factors influence GDP per capita growth, accepted as the main indicator of competitiveness. Applying the decomposition method (Cambridge Econometrics, 2003, pp. 3-35; 3-36), for each development region (j) the following relationship can be written:

$$\frac{PIB_j}{POP_j} = \frac{PIB_j}{OCUP_j} \times \frac{OCUP_j}{POP_j} \qquad (1)$$

where GDP_j is Gross Domestic Product of the region j, POP_j population and $EMPL_j$ employment, $j = 1, 2, ..., n$.

Analysed in terms of GDP per capita, Romanian regions competitiveness is still very low compared to European Union average (excepting the region which includes the capital), even though during the last years this indicator has the tendency to increase (in absolute values) (Table 1).

Table 1

GDP per capita of Romania and development regions compared to EU-27 average

GDP per capita (%)	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU-27	100	100	100	100	100	100	100	100	100
RO	26	28	29	31	34	35	38	42	47
NV	24	26	28	30	33	33	36	40	41
C	27	28	31	33	34	34	38	42	45
NE	18	20	21	22	24	23	25	27	29
SE	23	25	26	28	31	30	32	34	39
S	21	22	24	25	28	29	32	34	39
BI	56	57	59	63	68	77	84	92	113
SV	22	24	23	26	28	27	30	33	36
V	27	30	32	35	39	39	45	48	51

Source: EUROSTAT 2011.

Compared to national average, the indicator GDP per capita shows that development disparities among the eight development regions tend to rise, especially between the region that includes the capital (Bucureşti-Ilfov) and the rest of the regions, but also between the East and the West of the country. In 2000, the poorest region North-East was recording a level of GDP/inhabitant by 28% under the national average and South region by 17% while Bucharest-Ilfov region overcame by 28% this average. In 2008 the disparities increased, three of the development regions recording a GDP/inhabitant level around 20% below the national average: North-East, South-East and South, while only three regions were positioning above this level: Bucharest- Ilfov, West and Centre (Table 2).

Table 2

GDP per capita of Romanian regions compared to national average

GDP per capita (RO=100)									
Regions/Years	2000	2001	2002	2003	2004	2005	2006	2007	2008
RO	100	100	100	100	100	100	100	100	100
NV	95.46	92.32	94.05	96.50	95.48	95.51	93.97	93.58	96.40
C	102.96	103.36	103.10	105.31	104.13	100.59	98.05	99.89	101.25
NE	72.09	69.15	72.24	72.25	71.76	68.89	66.56	64.40	63.94
SE	92.26	88.90	88.82	90.14	88.02	91.45	86.38	84.88	81.21
S	83.39	80.30	80.52	81.26	80.53	82.61	83.53	83.95	82.24
BI	183.00	217.26	203.54	200.99	199.59	199.10	218.38	216.77	220.02
SV	88.03	82.92	84.88	78.02	83.79	83.36	78.80	79.59	78.88
V	115.61	103.42	108.58	109.97	112.65	114.65	112.86	116.33	115.70

Source: Own calculations based on EUROSTAT 2011.

An explanation for all these disparities can be also represented by taking account of the labour productivity in each region. Thus, the lowest productivity could be met even for 2008 in the North-East, followed by South-West, South and South-East (Table 3).

Table 3

Labour productivity at the regional level compared with the national average

GDP/employed population (RO=100)									
Regions/ Years	2000	2001	2002	2003	2004	2005	2006	2007	2008
RO	100	100	100	100	100	100	100	100	100
NV	96.38	90.77	94.01	97.29	99.01	98.70	96.54	96.56	101.36
C	112.03	111.98	107.74	111.84	114.11	109.41	105.00	108.75	108.38
NE	68.07	64.96	69.27	69.46	66.48	64.37	64.80	61.40	61.90
SE	96.70	94.79	94.71	93.16	92.41	96.08	89.54	90.32	86.37
S	80.92	77.82	79.66	80.59	80.28	82.38	83.11	81.88	79.24
BI	202.21	251.24	213.07	206.98	193.44	193.34	204.87	206.72	208.59
SV	77.63	71.90	77.10	71.63	78.95	77.94	75.00	76.59	74.80
V	119.14	107.73	111.24	113.37	116.42	118.87	115.26	116.49	117.27

Source: Own processing based on EUROSTAT 2011.

Another source of competitiveness is employment. The only region where overall employment rate has increased compared to 2000 is Bucharest-Ilfov. In 2008, higher rates of employment than the national average were recorded in the South, West and South West (Table 4).

Table 4

General employment rate at the national and regional level

Employed population/Total population (%)									
Regions/ Years	2000	2001	2002	2003	2004	2005	2006	2007	2008
RO	42.73	42.52	40.51	39.56	39.82	39.99	40.94	41.04	41.29
NV	42.93	43.62	40.95	39.50	38.89	39.08	40.02	39.98	39.62
C	41.03	41.13	40.11	38.24	37.56	38.02	39.50	38.96	39.95
NE	43.47	43.16	40.29	39.70	41.68	41.34	40.53	41.48	41.02
SE	41.10	40.63	38.59	38.57	37.96	38.27	39.61	38.58	39.01
S	42.87	42.64	40.01	39.11	39.28	39.49	40.74	41.54	42.10
BI	42.17	40.42	41.76	40.72	43.16	43.21	45.66	45.29	45.82
SV	45.85	46.20	42.03	41.66	40.49	41.02	41.29	41.06	41.70
V	42.35	42.10	41.30	39.52	39.58	39.72	41.35	42.21	42.08

Source: Own processing based on EUROSTAT 2011.

Differences in regional development

Reported to the region that includes the capital, competitiveness gaps remained very high in 2008. Thus, even Western and Central regions more

competitive than those in the south and east of the country, registered a GDP per capita by about 50% lower than the Bucharest-Ilfov region, while the gap in competitiveness of the North-East region is approximately 71% (Table 5). But what is even more evident from the comparison in performance for Romanian regions is that there is an increasing trend of these disparities, the rate at which the Bucharest-Ilfov advances is much higher than the rate of the other regions.

Table 5

Competitiveness gaps compared to the region Bucharest-Ilfov in 2000 and 2008

Regions	GDP per capita (PPS)		Absolute gap (PPS) $\Delta \mathbf{y}_{j/i} = \mathbf{y}_j - \mathbf{y}_i$		Territorial Index (%) $\mathbf{i}_{i/j}^{y} = \dfrac{\mathbf{y}_i}{\mathbf{y}_j}$		Relative gap (%) $\Delta_{y_{1/j}}^{\%} = \dfrac{\mathbf{y}_i - \mathbf{y}_j}{\mathbf{y}_j} \times 100$	
	2000	2008	2000	2008	2000	2008	2000	2008
NV	4466	10009	-4096	-12836	52.17	43.81	-47.83	-56.19
C	4817	10513	-3745	-12332	56.26	46.02	-43.74	-53.98
NE	3373	6639	-5189	-16206	39.39	29.06	-60.61	-70.94
SE	4316	8432	-4246	-14413	50.41	36.91	-49.59	-63.09
S	3901	8539	-4661	-14306	45.57	37.38	-54.43	-62.62
SV	4119	8191	-4443	-14654	52.17	35.85	-51.90	-64.15
V	5409	12013	-3153	-10832	56.26	52.59	-36.82	-47.41
BI	8562	22845	-	-	-	-	-	-

Source: Own processing based on EUROSTAT 2011.

The differences between Bucharest-Ilfov region and the other regions in terms of labour productivity are as large as in the case of GDP per capita. They range form 43.78% for West region and 70.33% for North East region (Table 6).

Table 6

Productivity gaps compared to the region Bucharest-Ilfov in 2000 and 2008

Regions	GDP/employment (PPS)		Absolute gap (PPS) $\Delta \mathbf{y}_{j/i} = \mathbf{y}_j - \mathbf{y}_i$		Territorial Index (%) $\mathbf{i}_{i/j}^{y} = \dfrac{\mathbf{y}_i}{\mathbf{y}_j}$		Relative gap (%) $\Delta_{y_{1/j}}^{\%} = \dfrac{\mathbf{y}_i - \mathbf{y}_j}{\mathbf{y}_j} \times 100$	
	2000	2008	2000	2008	2000	2008	2000	2008
NV	9500	24166	-10431	-25567	47.66	48.59	-52.34	-51.41
C	11042	25841	-8889	-23892	55.40	51.96	-44.60	-48.04
NE	6709	14757	-13222	-34976	33.66	29.67	-66.34	-70.33
SE	9531	20593	-10400	-29140	47.82	41.41	-52.18	-58.59
S	7976	18892	-11955	-30840	40.02	37.99	-59.98	-62.01
SV	7652	17834	-12280	-31898	38.39	35.86	-61.61	-64.14
V	11743	27959	-8188	-21774	58.92	56.22	-41.08	-43.78
BI	19932	49733	-	-	-	-	-	-

Source: Own processing based on EUROSTAT 2011.

    In terms of employment, development gaps between the seven regions and the region that includes the capital were not as large in 2008. They remained between 8.11% and 14.85% for all the seven regions analyzed (Table 7). It is worth noticing that they have greatly increased in 2008 compared to 2000.

Table 7

**Employment gaps compared to the region Bucharest-Ilfov
in 2000 and 2008**

Regions	Employment rate (%)		Territorial Index (%) $i_{i/j}^{y} = \dfrac{y_i}{y_j}$		Relative gap (%) $\Delta_{y_{1/j}}^{\%} = \dfrac{y_i - y_j}{y_j} \times 100$	
	2000	2008	2000	2008	2000	2008
NV	42.93	39.62	101.79	86.48	1.79	-13.52
C	41.03	39.95	97.30	87.19	-2.70	-12.81
NE	43.47	41.02	103.08	89.53	3.08	-10.47
SE	41.10	39.01	97.45	85.15	-2.55	-14.85
S	42.87	42.10	101.64	91.89	1.64	-8.11
SV	45.85	41.70	108.73	91.03	8.73	-8.97
V	42.35	42.08	100.41	91.85	0.41	-8.15
BI	42.17	45.82	-	-	-	-

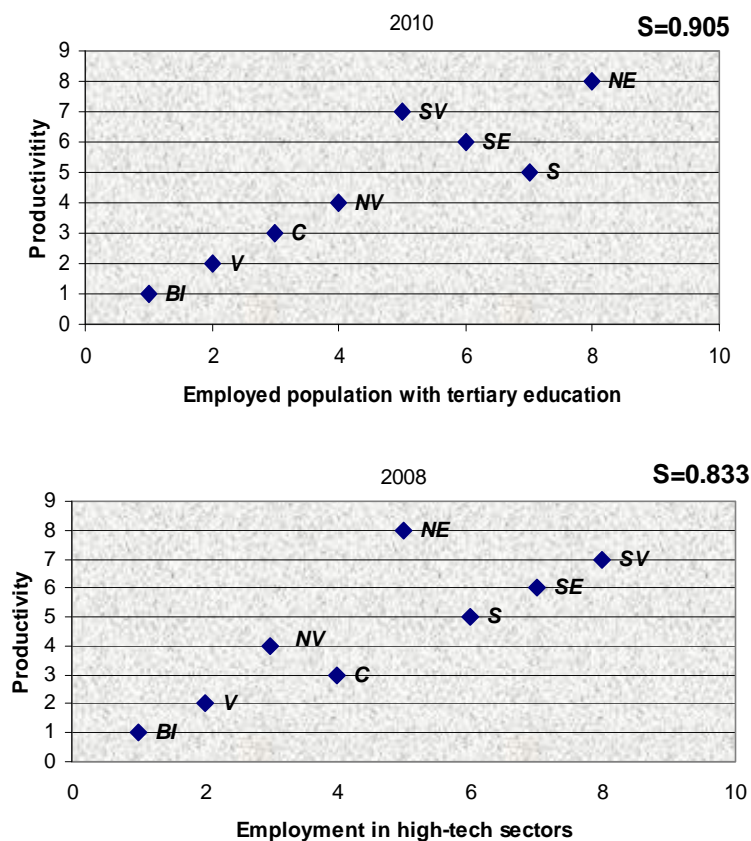**Source:** Own processing based on EUROSTAT 2011.

    The disparities among Romanian regions are also emphasised by the box plots and k-density estimates. Even when Bucharest-Ilfov region is excluded from the analysis (in the box plots) the differences between the rest of the regions remain high and even have increased in the last years in terms of GDP per capita and productivity rate. The k-density graphs for the year 2008 show the tendency of polarization and formation of two groups of performers (Figure 1).

GDP per capita

Productivity
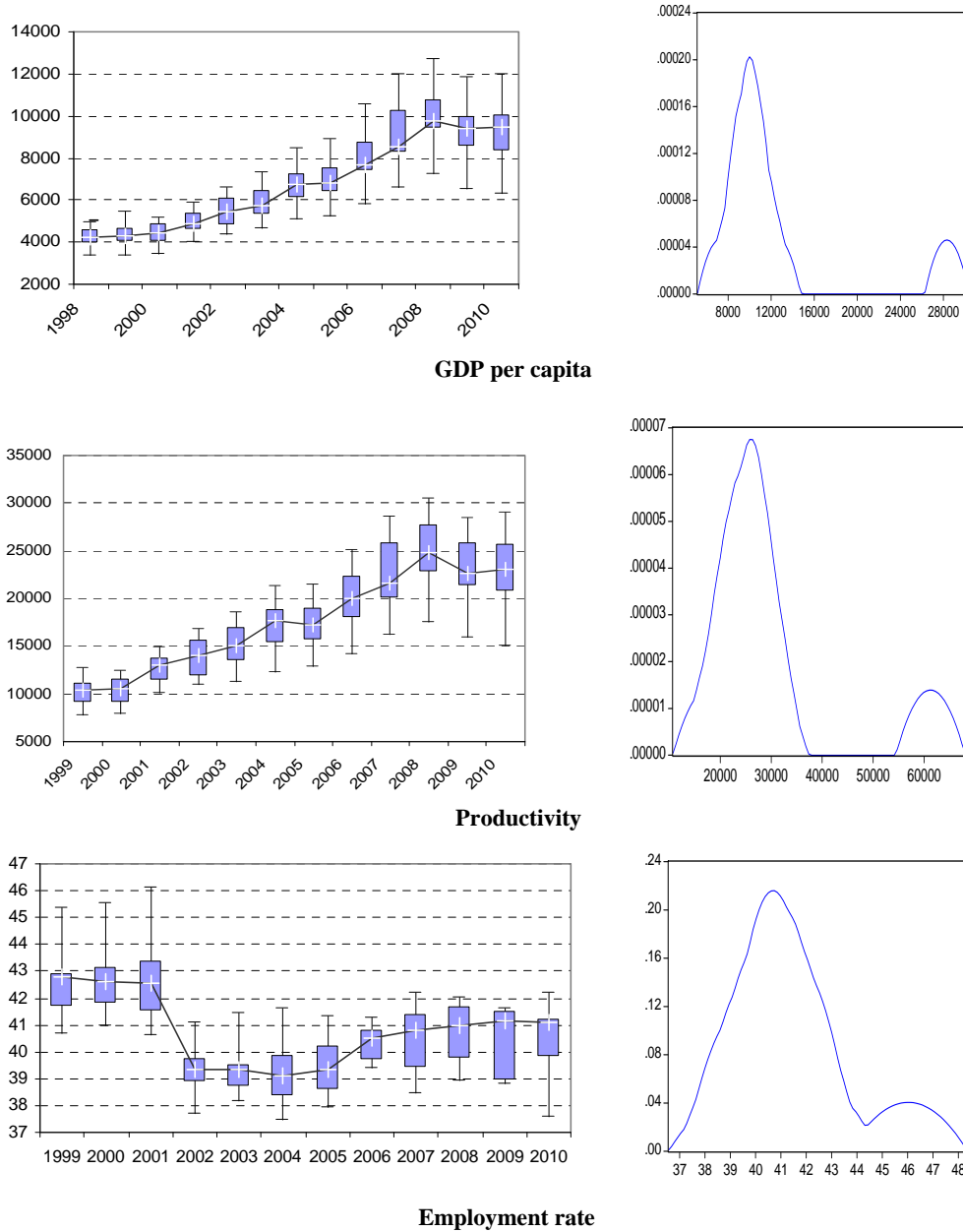
Employment rate

Source: Own processing based on EUROSTAT 2011 and National Forecasting Commission (for GDP in 2009 and 2010).

Figure 1. *Box plots and k-density estimates of GDP per capita, productivity and employment rate*

In this sense, it is interesting to identify the competitive advantages of the leading regions and the manner in which they contribute to performances increase. Among these advantages those related to human factor can not be neglected. As the Spearman coefficient, computed for the eight regions, demonstrate among the key factors of the economic development of the leading regions are: the level of education of the employed population, the implication in activities that generate added value and, not at the end, the availability of human resources (Figure 2).

2010   **S=0.905**

2008   **S=0.833**
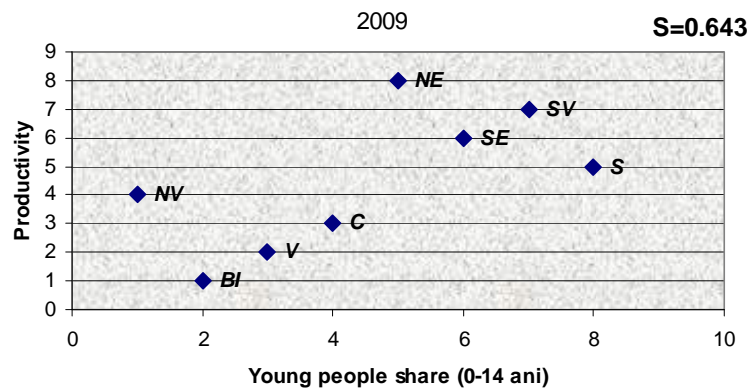
Source: Own processing based on EUROSTAT 2011.

Figure 2. *Correlation between productivity and the factors that show the human potential of the Romanian eight regions of development*

Conclusions

Even our days, Romanian regions are facing the problem of low competitiveness. Poor economic performance is determined by many factors, among them, quantitative and qualitative dimensions of human resources are very important. Thus, from the perspective of the main sources of regional competitiveness, productivity and employment, except for the Bucharest-Ilfov, all other regions have poor performances compared to European average. North-East region is facing the lowest competitive performance of the Romanian regions due mainly to the dependence on agriculture, low productivity in this sector and low labour skills. At the same time, demographic trends are a competitive advantage that can support, through appropriate measures (increase the skills and attract people in activities that generate added value) a faster economic growth.

In contrast, Bucharest-Ilfov region is characterized by high competitiveness backed up by the largest number of foreign investment, skilled workforce, employment in services, research and development activities.

Given these considerations, the possibilities of improving the existing gaps and to increase regional competitiveness can be shaped around the following areas:

- Addressing demographic problems, especially those related to low birth rate, infant mortality and migration to ensure future labour

resources necessary to compensate the aging demographic phenomenon.
- More efficient labour utilization through investment in education, training, retraining and entrepreneurial culture.
- Effective use of human capital for development activities that generate added value by adopting existing technologies or creating new ones based on research, development and innovation.

Acknowledgements

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