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Comparative analysis of regional unemployment and RGDP in Croatia and selected transition countries

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COMPARATIVE ANALYSIS OF REGIONAL UNEMPLOYMENT AND REGIONAL GROSS DOMESTIC PRODUCT (RGDP) IN CROATIA AND SELECTED TRANSITION COUNTRIES

Paper prepared for the
44th Congress of the European Regional Science Association,
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Abstract

Most transition economies have experienced a prolonged periods of high unemployment rates and decline of the growth rates at the beginning of transition process. However, after the initial decline in the economic activity, a period of stronger growth rates was recorded in most of the transition countries. Many analyses were done on this initial phase of transition process so we are concentrating on more successful period of transition process. Through the analysis of a regional gross domestic product dynamics in Croatian regions and several other European Union Candidate Countries we are identifying common development patterns in selected countries. Furthermore, since the unemployment is severe problem in most of the transition countries in our sample, and the increasing employment is one of the goals of the European Union, we expect that this issue will receive greater attention in the future. Due to the fact that regional structural developments were not sufficiently analysed, at least not in Croatia, we hope that this comparative study will contribute to the existing literature.

Previous studies confirm that the economic growth during the more successful phase of transition was not strong enough to help to clear the labour market in selected countries. But these results are predominately concentrated on the country, and not on the regional level. Therefore, we analyse regional development in order to identify whether there are common patterns in Croatian regions with regions in other transition countries. We also compare our set of indicators with those in the European Union regions, particularly those geographically closer to Croatia.

The main obstacle to regional analysis in Croatia is the lack of adequate statistical data. Therefore, first part of our paper consists of generating the relevant indicators. Since the paper is oriented to analysis, we do not focus on methodological problems. We are, however, aware of the limitations imposed on the interpretations of our results due to the fact.

JEL Classification: R19, J69, R11.
Key words: RGDP, unemployment, comparative regional analysis.

1. Introduction

The increased awareness of the regional policy in Croatia has become significant during the last couple of years. Although certain studies were produced, preceding regional policy was focused solely on the financial aid to the lagging regions and not to the overall recognition of the importance of the regional policy. With the Croatian application for the membership into the European Union (EU), regional policy has nowadays become a key issue. Expectations from the future regional aid from the EU funds, accession of the neighbouring countries as well as Croatian efforts to join the EU has increased the importance of the regions in Croatian economy. In that context, special attention has been given to the regional analysis and regional comparisons. Unfortunately, for an adequate qualitative regional analysis one needs reliable databases, at least for key economic indicators. Those databases are not available in Croatia, even at the national level. Therefore, there have been only a few studies so far in Croatia which have tried to access the differences in development between regions.

While writing this paper, out intention was to envisage Croatian position within the EU context and those of the Candidate Countries (CC). We have chosen to focus our analysis on the two socio-economic indicators: gross domestic product in a region (RGDP) and regional unemployment rates, distributed regionally in ten selected countries. The main reason is that these indicators are considered the key indicators of regional development. Additional reason is a more pragmatic one. These indicators could be at the time of writing this paper estimated for Croatia, at least provisionally.

Following section is briefly introducing a concept of the spatial convergence and divergence in relation to the RGDP and unemployment. The third section consists of the description of the regional levels/countries and available data subject to the analysis. Results of the analysis are presented in the fourth section. The last section concludes.

2. Regional Convergence and Divergence

Regional inequalities with diversified regional development are foreseen as a reality of all national as well as the European Union policies. Being aware of this fact, the EU is

giving much attention to the balanced regional development through the financial support provided from its major regional policy instrument - Objective 1 of the Structural Funds. Recent analyses demonstrate that convergence on the national level has increased, as it can be seen from the examples of Portugal and Ireland. However, on the regional level in most countries disparities have increased[1].

While analysing gross domestic product in a region on a Nomencalture of Territorial Units for Statistics (NUTS) 2 level, an interesting conclusion was driven form the analysis carried by Juan Antonio Duro. Up to the mid 1980's income inequalities among member states of the EU represented half of the inequalities among the European regions, while the other half was explained by inequalities among regions within each state. Afterwards, analysis performed indicates that inequalities among states have diminished by 25 percent. But at the same time regional inequalities within the states have increased by 10 percent. Duro reached a conclusion that great majority of regional inequalities in the EU can be explained by inequalities within the country. Furthermore, Europe is witnessing a process of regional convergence between countries accomplished with the divergence process among countries' own regions.[2]

Overman and Puga (2000) contributed to better understanding the regional disparities through the analysis of regional unemployment. The result of their analysis showed that regions started with low or high unemployment rate retain their relative situation. Regions with the intermediate unemployment rates have moved towards extremes. Consequently, regional disparities in unemployment are increasing through time. In addition, they concluded that the future of the regions in terms of unemployment is linked much more closely to the results of neighbouring regions than to those of the respective country itself.

Regarding regional disparities, usually the capital or the capital regions demonstrate the lowest unemployment rates and respectively higher RGDP in national comparison. Disparities between regions and among regional division of the territory within national economies are significant; the lower the regional level is the more pronounced considered differences are. Empirical research results which indicate such regional development have contributed to the establishment of new theoretical models.

An additional focus of understanding and explaining disparities in regional growth is development of new methods and concepts of regional economic analysis, so called "new economic geography (NEG)". Krugman (1990) has introduced this model in 1990, connecting transaction cost with economies of scale. Peter Tyler, in collaboration with Ron Martin and Michelle Baddeley, oriented their research more towards investigation of regional wage rigidity and unemployment across the EU, concentrating on the European regional unemployment disparities. Their aim was to investigate whether there is any evidence for regional convergence in unemployment rates across the EU over the last twenty years.

As Jen Suedekum (2003) argues, regional unemployment rates and corresponding regional economic agglomeration is largely unexplored issue in the literature. Suedekum has analysed spatial coincidence of the achieved unemployment rates and RGDP per capita at the NUTS 2 level of the European Union Member States (EU-15). Suedekum has developed a variation of the NEG – model, with a result that the large core region, where workers and production are agglomerated, will exhibit a lower unemployment rate. The opposite occurs within the sparsely populated peripheral region. The model also confirms that the regional unemployment rates follow a trans-national core-periphery structure. Having in mind those theoretical models, we proceed with relatively simple economic empirical analysis of regional indicators in transition countries. However, we do expect that our results will not confront those of more elaborated models.

During the socialist era in Croatia, as well as in other transition countries, unemployment was not recognized due to the political reasons and it existed mainly as a hidden unemployment in the form of over-manning or labour hoarding within enterprises[3]. Results of such behaviour are two digit unemployment rates in all transition countries at the beginning of transition process, and still high unemployment rates in countries that didn't overcome this problem such as Croatia. Therefore, regional disparities in unemployment could not be adequately analysed in the pre-transition period. In addition, the first phase of transition was marked by severe changes on the labour market, due to the restructuring process. Consequently, regional labour market indicators also increased their volatility during that period. We believe that the period we are considering in our analysis – specifically, the period after 1998 – is more

relevant for international comparisons, due to the fact that the labour market situation has somewhat stabilised in the meantime. More information on the data sources could be found in the following section.

3. The Data Sources

In our empirical analysis, we have concentrated on the explanation of the two mostly pronounced economic indicators – regional unemployment and RGDP. We have chosen to compare Croatian regions with the regions of those European countries that will join the EU during the 2004, as well as the two countries that are expected to join the EU in 2007 – Romania and Bulgaria. Due to the fact that at the moment of writing this paper all of the selected countries were outside the EU, as well as for the convenience, we will refer to all of them as the Candidate Countries (CCs).

While choosing the time line, we have decided to concentrate on the period after the 1998. There are many reasons for our decision. Instead of listing all of them, we will name the most important ones:

- The beginning of the transition period was marked by high inflation rates. Therefore, GDP estimates and in particular GDP estimates corrected for the purchasing power standards that we are using in our analysis are deemed unreliable even at the national levels, let alone the regional level. Estimates of regional differences in price levels within countries are considered highly unreliable, even if available. The main reason is that most of the transition countries have gone through periods of very high inflation in the first phases of transition.
- Statistical system in the transition economies needed time to adapt to the new methodologies that include market developments. Previous statistical methodologies were structured in a way to monitor social planning. Since the national level indicators were priority, it was reasonable to expect that the regional indicators will not be available in those early stages. Any backward estimation is considered provisional, especially in the context of new methodology introduction.
- The whole NUTS classification was introduced in transition countries as a part of accession process. Therefore, the classification had to be negotiated and established, before the data collection process could even start. This has also required time.

- Due to the transition process itself, even the indicators on the national level movement was somewhat erratic. Such volatile movements could unable the researchers from detecting true relationships between economic indicators.

In the following section we briefly discuss the data sources for selected countries, with detailed explanation as to how we have constructed indicators in Croatian case. Detailed data sources for other transition economies can be found in the Data Appendix table at the end of this paper.

Selected Transition Countries

Specifically, our sample of the CCs, in addition to Croatia, include Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia. Because our aim is to analyse gross domestic product in a region and regional unemployment, the second tier of the statistical regions is chosen as the basic unit for comparison for the selected countries. Those statistical regions are equivalent to the existing territorial division of the EU Member States – Nomenclature of Territorial Statistical Units. Regions at NUTS 2 level represent the main analytical level used for the EU regional development policy. Hence, this was chosen as the primary level of analysis.

The NUTS nomenclature builds on the existing territorial and administrative distribution within each country. Although established NUTS guidelines as how to implement NUTS classification exists, in the sense that the level is connected with the regional population size, the fact that it is also connected with the existing territorial organisation results in different region size and characteristics within each country. Introducing the NUTS classification in the countries within our sample has resulted in the following:

- The Czech Republic has completed the introduction of territorial units corresponding to the NUTS classification with eight statistical regions at NUTS 2 level.
- The Hungarian Government confirmed the provisional NUTS classification in January 2002; designating the whole country as one single unit corresponding to NUTS level 1, with seven regions corresponding to NUTS level 2.
- Poland is divided into 16 areas (NUTS 2 regions according to the EU requirement).

- In February 2002 Slovakia adopted, in agreement with the Commission, the following provisional NUTS classification: the Bratislava region, Western Slovakia, Central Slovakia and Eastern Slovakia corresponding to NUTS level 2.
- The territory of Romania is divided into eight developmental regions corresponding to NUTS level 2.
- Estonia, Latvia, Lithuania, and Slovenia have all organised their countries as a single territory at NUTS level 1 and/or level 2.
- At the moment, Croatia has suggested a proposal of introducing 5 NUTS level 2 regions. However, the future of this proposal is not clear at the moment.

Economic Development Indicators

Thus defined NUTS 2 regions were the basis for our analysis. In the following we briefly discuss the data sources used in our empirical analysis. As an indicator of economic development of the regions in our sample, we have used RGDP. The primary sources of RGDP data for the selected transition countries were as follows: Statistics in focus – Regional Gross Domestic Product in Candidate Countries, Eurostat publications, and National Statistical Offices.

Based on this information two variables were calculated, namely: the contribution of each RGDP to the total GDP of a particular country; and the ratio of RGDP to the mean RGDP. However, in order to compare the development of different regions, a comparison based only on the RGDP expressed in the same currency is not sufficient. Therefore, we have also used RGDP data adjusted for purchasing power parities (PPS). This data is readily available in European Commission publication "Third report on economic and social cohesion".

Labour Market Indicators

The main source for the regional unemployment rates in the selected transition countries was the publication Statistics in focus, issued by the Eurostat. The data presented in this publication was supplied by the each country to the Eurostat. The definition of unemployment is set by the International Labour Office (ILO) and may differ from the respective national concepts. Indeed, we have also cross-referenced these data with unemployment rates published by the national statistical offices. As a rule, the ILO

unemployment rates are significantly smaller than those based on administrative sources.

Eurostat estimates of the regional unemployment rates are based on the estimates of employed and unemployed persons taken from the Community Labour Force at a national level for the second quarter. The estimated jobless figures are broken down over the individual regions, applying the regional structure of registered unemployed persons or regional representative results of the Labour Force Survey. A similar procedure is applied with respect to employed persons. Unemployment rates are consequently calculated as a ratio of unemployed to the sum of employed and unemployed.

We have also used employment shares by the type of activity in every region. This information was available in the European Commission publication "Third report on economic and social cohesion". The indicator was used to determine the underlying structure of the economy in the region, as well as main sources of employment in the region.

Croatia

The main difficulty that we have encountered is the lack of main economic data beneath the state level in Croatia. Croatian territory is divided into two tiers of local self-government: county level and level of municipalities and towns. Since Croatia is a country with the population of only 4.5 million it would not be reasonable to try to estimate the RGDP or unemployment for such small territorial units and to compare the indicators with those estimated at NUTS 2 level in other countries. Therefore, we have adopted a different approach.

To be in line with the obligations under the Stabilisation and Association Agreement signed in 2001, Croatia is required to introduce statistical regions that correspond to the European Statistical NUTS classification. In accordance with that obligation, the Central Bureau of Statistics has developed a proposal for the Nomenclature of territorial units for Statistics. Eurostat appraised and rejected the division of Croatia's territory on 5 NUTS level 2 and apparently suggested that Croatia should be divided into less NUTS 2 level regions. Notwithstanding the fact that at this moment it is still not clear whether

there will be a new proposal of NUTS 2 level, we have decided to base our analysis on the only existing more or less formal division.

The proposal states that the 21 Croatian counties (which should correspond to the future NUTS level 3) should be aggregated in following NUTS 2 regions:

- *Northern Croatia* including following counties: County of Međimurje, County of Krapina-Zagorje, County of Varaždin, and County of Koprivnica-Križevci.
- *Central Croatia* including following counties: County of Zagreb, County of Karlovac, County of Sisak-Moslavina, and County of Bjelovar-Bilogora and the City of Zagreb.
- *Eastern Croatia* including following counties: County of Virovitica-Podravina, County of Požega-Slavonija, County of Brod-Posavina, County of Osijek-Baranja, and County of Vukovar-Srijem.
- *Western Croatia* including following counties: County of Primorje-Gorski kotar, County of Lika-Senj and County of Istria.
- *Southern Croatia* including following counties: County of Split-Dalmatia, County of Zadar, County of Šibenik, and County of Dubrovnik-Neretva.

For these five regions we had to construct our key indicators - RGDP and regional unemployment rates. The RGDP had to be estimated using the top down method of estimation, with employment data serving as a proxy for the economic activity in the region. Estimation of RGDP by county was carried out using the constant average labour productivity assumption. The Central Bureau of Statistics annually publishes data on Gross Value Added (GVA) for individual activities at the national level. The GVA for an individual county is estimated based on the GVA data for every activity (according to the NACE Rev. 1) – as well as data on the employment breakdown for that activity in each county. Employment data, by activity, includes those that are employed by legal entities, self-employed, or employed in crafts, trades, and free lance, as of March 31st each year. The RGDP at market prices for an individual county is the sum of values added by activities depreciated by county's financial intermediation services plus taxes less subsidies on products. For the purpose of this paper, the county data have been aggregated according to the aforementioned proposition of the NUTS level 2 for Croatia.

Based on this information two variables were calculated, namely: the contribution of each RGDP to the total GDP of Croatia; and the ratio of RGDP to the mean RGDP. Estimation of RGDP, expressed in relation to purchasing power parity, is done using the WIIW estimates published in their yearly "Countries in Transition: Handbook of Statistics" publication. However, these estimates refer only to the national level purchasing power parities. There were no attempts to further estimate purchasing power parities on the regional level.

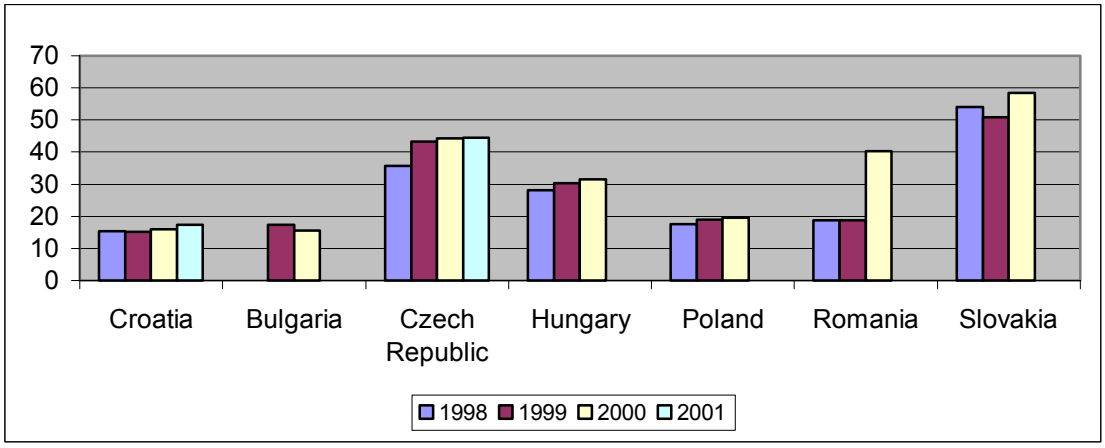
In the case of Croatia, the bases for the calculation of regional unemployment rates were data from the Central Bureau of Statistics and Croatian Employment Service. Annual unemployment rates at the NUTS level 2 are calculated as the ratio between the average number of unemployed during the year, and the sum of the average number of unemployed and the total number of employed (legal entities + goods, services and crafts, trades, and self-employed) as of March 31st each year. Although the data does not correspond in terms of dates, the Central Bureau of Statistics performs the full coverage survey on employment only once a year and the data collected for this specific month is of much better quality than for the rest of the year. Throughout the year there are problems with sample deterioration and the ultimate number of employed is consequently less reliable. Employment shares were calculated using the data from the same source.

It is clear that the regional data for Croatia are provisional, and therefore cannot be considered as fully comparable with those in other transition countries. The unemployment rates based on the administrative sources in other transition countries are by far larger than those that are result of the Labour Force Survey. Looking at the national level data, the same is applied in Croatia. However, the Labour Force Survey data are not comparable on the beneath country level, and therefore the direct comparison of data in Croatian to other regions is only indicative. However, comparing unemployment rates based on administrative sources does not seem plausible since there are large differences between countries in declaring unemployment. In addition, when one considers that the RGDP estimates rely only on the employment data, there is no need for further caution as to the interpretation limitations of our empirical analysis with which we proceed in the following section.

4. Empirical Analysis

We have started our analysis with a simple introspection of the available data. It is no surprise that the RGDP data reveal that most of the regions lag behind the EU-15 average. However, the CCS' regions also differ significantly inside the countries themselves. Indicator that enables the comparison of the dispersion of regional development within the countries is the coefficient of variation, which is shown in Figure 1.

Figure 1 Within-countries variation in regional development

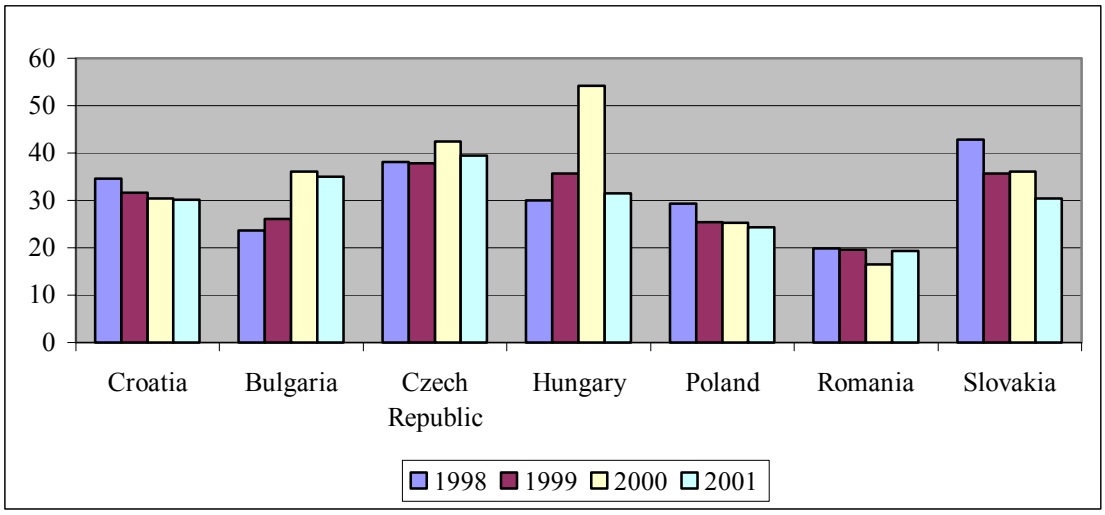


Source: authors' calculation.
Notice: since we analyse the NUTS level 2, it was not possible to calculate the indicator for all of the countries in our sample, i.e. for those whose NUTS level 2 equals country level.

The figure reveals that the Czech Republic and Slovakia have the greatest relative diversification of regions in the analysed period. In addition, it can be noticed that almost all of the countries, with exception of Bulgaria, have experienced the increase in the regional development diversification. However, we have noticed that Bulgaria has changed its territorial classification in the analysed period and based on the data for only two years it is not possible to make substantial conclusions on the process of diversification in Bulgaria.

We have performed the same analysis with our unemployment data, and the results are shown in Figure 2.

Figure 2 Within-countries variation in regional unemployment

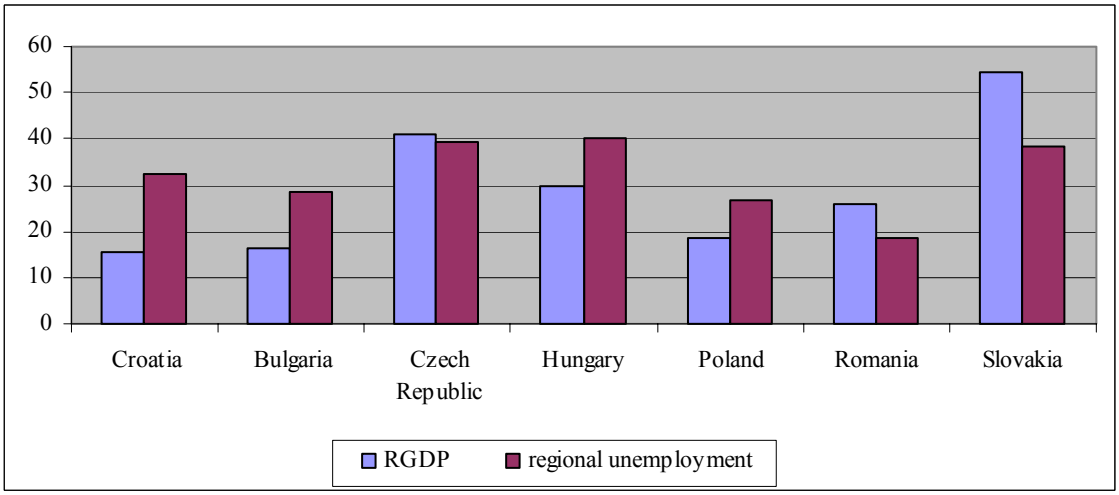


Source: authors' calculation.

Unemployment data shows that it is less clearly to find a common pattern. It can be noticed that countries have more similar regional variations in unemployment than in RGDP. However, when it comes to developments through time, there are no clear patterns as to whether the variations increase or decrease.

Are diversification tendencies in labour market and development indicators towards convergence or divergence? In order to try to answer to this question we have put together three-year average coefficient of variation for the RGDP and regional unemployment in the same picture. The result can be seen in Figure 3.

Figure 3 Within-countries variations in RGDP and regional unemployment



Source: authors' calculation.

According to the data presented in Figure 3, we can identify two groups of countries:

- Country group 1

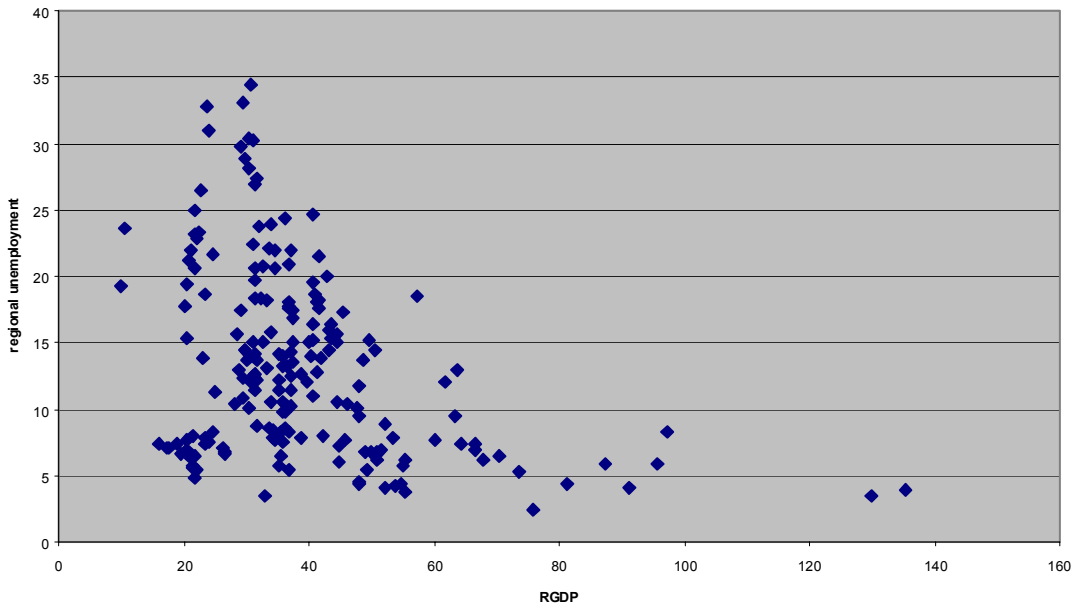
Countries with lower regional differences in RGDP than in unemployment rates are: Croatia, Bulgaria, Hungary and Poland.

- Country group 2

Countries with higher regional differences in RGDP than in unemployment rates are: Czech Republic, Romania and Slovakia.

Another way to look at the unemployment and RGDP position of different regions in the observed time frame is by plotting a scatter diagram. We have plotted the diagram, which has regional unemployment rates on the vertical axes and RGDP in PPS relative to EU-15 average. We have presented every available pair of data for the countries in the sample during the 1998-2001 period. Therefore, Figure 4 includes also the countries for which the NUTS 2 level is equal to the whole country level – Estonia, Latvia, Lithuania and Slovenia.

Figure 4 Scatter diagram – regional unemployment rates and relative RGDP to the EU-15 average



Source: Eurostat and Croatian Central Bureau of Statistics.

From the Figure 4 we can observe that the depressed regions are depressed according to both indicators. In other words, a negative relationship between relative closeness to the EU development level average and unemployment rate can be assumed. In order to confirm this relationship, we have performed a correlation analysis. It turned out that the coefficient of correlation is negative -0.38 and significant at the level of 5 percent. In other words, the more the region approaches the EU development level average, the less it experiences the unemployment problems.

However, we were interested as to whether we could establish other indicators, besides the level of economic development, that are connected with poor labour market performance in some regions. According to the literature[4] one of the indicators used for explaining the differences in regional unemployment rates is the structure of the employment in the region. Therefore, besides the relative RGDP as an indicator of market potential, we have added two additional variables. Due to the data availability and in order to avoid potential endogeneity issues, we have specified our regression equation in the following way:

$$u_{rel} = \alpha y_{EU-rel} + \beta e_{ind} + \gamma e_{ser} + \varepsilon \qquad (1)$$

where y_{EU-rel} denotes relative RGDP in PPS in every region in comparison to the EU-15 average, u_{rel} denotes unemployment rate in the region relative to the Central and East European Countries (CEEC) average unemployment rate, e_{ind} denotes share of the persons employed in the industry in the region and e_{ser} denotes share of the persons employed in service sector in the region. We have specified our dependent variable as a relative to the CEEC average in order to avoid possible endogeneity issues arising from the fact that the unemployment rate in the region usually is estimated by using the employment data as well. The regression was carried through using all of the countries in the sample, i.e. including those for which the NUTS level 2 equals the country as a whole. We have applied the OLS procedure on the data for the year 2001, and the results are presented as equation A in the following table:

Table 1 Regional unemployment regression results

Model	Independent variables			Adjusted R^2	Number of observations
	Relative RGDP to EU-15	Industry employment share in the region	Services employment share in the region		
A	-2.49***	-0.52	4.32***	0.33	58
	(-5.81)	(-0.80)	(7.86)		
B	-2.43***	-0.44	4.16***	0.37	53
	(-5.99)	(-0.66)	(7.12)		

Source: authors' calculations.
The regression coefficients significant at 5% level are marked by **, and those significant at the 1% level are marked by ***, t-values are reported in parentheses beneath each regression coefficient.

First of all, it has to be noticed that the proposed model does not explain a large part of the variation in the relative unemployment rate in different regions. Therefore, there must be other factors that should improve the estimation results. However, a few remarks can be drawn from our results. The higher the relative RGDP of the region is to the EU-15 average, the lower the relative unemployment rates when compared to other candidate countries regions. In other words, the more developed region is the fewer problems with labour market it experiences.

The coefficient associated with industry employment share is negative, relatively small and insignificant. Therefore, there is nothing much to conclude on the relationship between industry specialisation of the region and relative unemployment rates. One of the reasons why the industry employment share turned out to be insignificant in the CCs is that all of them have gone through severe transformation of the industry sector during the transition phase. Specifically, the heavy industry was perceived as a main source of employment during the previous socialist regime. Through the restructuring, many of former heavy industry plants were closed down, and consequently industry sector became a source of job destruction and not the source of job creation. However, once the industry sector is successfully transformed, it will demand labour, and once again will contribute positively to reducing unemployment issues. At the time being, it seems that our cross-section has caught the sector somewhere in the middle of the restructuring, which has resulted in insignificant regression coefficients.

Finally, the coefficient by the service sector employment share is left for discussion. According to our results it turns out that the higher the employment in service sector share, the higher the relative unemployment in the region when comparing to the average CEEC level. The coefficient is relatively high and significant at the level of 1 percent. This evidence might seem counterfactual, since the service sector is perceived as the most important source of job creation in the transition phase. However, part of the explanation for our result could stem from the fact that the large part of the employment in service sector is not registered as employment, but rather a source of the thriving shadow economy. Studies indicate that the share of the shadow economy in the transition countries is by far larger than the share in the market economies[5]. This fact can also influence other results that use the data on employment shares as independent variables.

Since there are no official data for Croatia readily available, and we had to construct most of the series, we have also estimated our model excluding Croatia. The results are presented in Table 1 as the equation B. Excluding Croatia from our sample has improved the explanation power of the equation. The estimated coefficients, however, did not change significantly. The same interpretation that was valid for equation A can be extended to this case.

Comparing our results with those of Römisch (2003), it can be noticed that in both cases the specialisation of regions towards service sector turned out to be significant in explaining regional unemployment rates. Römisch (2003) results indicate that the higher the service specialisation, the more likely the region will reduce unemployment in time. However, the same result holds for the agriculture, while the industry specialisation proved to be insignificant. We assume that his type of results could also contribute to our assumption that the employment shares could be misleading in transition economies, due to the high share of unofficial sector. The fact that agricultural specialisation, activity which is prone to avoid registering employment and unemployment equally, is significant in Römisch (2003) results, only adds additional argument to our prior conclusions.

Next, we turn to direct comparison between Croatian regions and those of its neighbouring countries. We have chosen to compare several indicators with those of

two candidate countries – Slovakia and Hungary, and two EU Member States – Italy and Austria. Obviously, Slovakia is not a neighbouring country to Croatia. However, since for Slovenia NUTS level 2 equals the country level, we have chosen to compare Croatian regions to the Slovakian ones. The analysis is presented in Table 2.

Table 2 RGDP PPS and unemployment indicators in selected countries, 2001-2002

Country	Highest regional GDP relative to EU-15 average	Lowest regional GDP relative to EU-15 average	Highest regional unemployment rate	Lowest regional unemployment rate	Number of regions
Croatia	45.5	30.4	34.4	17.3	5
Hungary	81.3	33.7	8.6	4.2	7
Slovakia	97.4	34.0	23.9	8.3	4
Austria	152.2	76.2	7.2	2.0	9
Italy	143.4	62.1	24.6	2.6	17

Source: Central Bureau of Statistics, Eurostat.

If we compare Croatian indicators with those of its neighbours it can be noticed that Croatian data indicates a significant lag in performance. However, since Croatia lacks official estimates of both indicators, those can be only considered provisional and not the factual state of Croatian regions. Due to the data problems, it is also difficult to establish whether the smaller diversification amongst Croatian regions than both in selected Member States or Candidate Countries is a real issue, or a consequence of our data construction process. Nevertheless, one point can be drawn from the inspection of the data presented in this paper – so far there is no evidence that the EU membership or accession reduces the regional divergence. If anything can be said about those processes, it would probably be the opposite. However, more data is required to substantiate this argument, and we shall leave this for the future research.

5. Conclusions

It did not come to our surprise that Croatia is lagging behind the Candidate Countries and in particular behind the EU-15. What did surprise us is the gap between Croatia and countries to which Croatia usually is compared with – Hungary, Poland and Czech Republic. However, this could be partly explained by the fact that our analysis relies on

provisional indicators for Croatia. Once the official statistical indicators become available, they could provide more reliable information and our conclusions could be more decisive.

In the meantime, we have to report that our regression results are in accordance with previous research. We have confirmed that the regions in the Candidate Countries that lag behind in development also experience labour market problems. The industrial specialization in the region turned out to be insignificant in explaining the labour market pressure. We conclude that this is a feature specific to transition countries in which a process of restructuring is strongly correlated with decreasing share of heavy industry.

Finally, it has to be noticed that in order to provide an in-depth regional analysis, such as the use of the NEG-model, more reliable data has to be available. Until then, our results should be only taken as an indication of the regional differences in transition countries. However, we hope that the data in Croatia will be available soon, so that we could proceed with our analysis.

Acknowledgments

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Endnotes:

[1] Funck and Pizzati (2003).
[2] Funck and Pizzati (2003).
[3] European Commission DG: Regional Policy, 2000.
[4] See, for instance Overman and Puga (2000) and Römisch (2003).
[5] See, for example Schneider (2003).

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Data Appendix

Country	Data	Source
Bulgaria	Unemployment	Statistics in focus – Regional Unemployment Rates in the Central European countries 1999, 2000, 2001 (http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_02_06.pdf; http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_01_08.pdf; http://www.eu-datashop.de/download/DE/sta_kurz/thema1/dn_01_1.pdf)
	GDP	Statistics in focus, Regional Gross Domestic Product in Candidate Countries, 4/2001, 2/2002, 2/2003, Third Report on Economic and Social Cohesion
Czech Republic	Unemployment	Statistics in focus - Regional Unemployment Rates in the Central European countries 1999, 2000, 2001 (http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_02_06.pdf; http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_01_08.pdf; http://www.eu-datashop.de/download/DE/sta_kurz/thema1/dn_01_1.pdf)
	GDP	Statistics in focus, Regional Gross Domestic Product in Candidate Countries, 4/2001, 2/2002, 2/2003, National Statistical Office (Czech Statistical Office http://www.czso.cz/); Third Report on Economic and Social Cohesion
Estonia	Unemployment	Statistics in focus - Regional Unemployment Rates in the Central European countries 1999, 2000, 2001 (http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_02_06.pdf; http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_01_08.pdf; http://www.eu-datashop.de/download/DE/sta_kurz/thema1/dn_01_1.pdf)
	GDP	Third Report on Economic and Social Cohesion
Hungary	Unemployment	Statistics in focus - Regional Unemployment Rates in the Central European countries 1999, 2000, 2001 (http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_02_06.pdf; http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_01_08.pdf; http://www.eu-datashop.de/download/DE/sta_kurz/thema1/dn_01_1.pdf)
	GDP	Statistics in focus, Regional Gross Domestic Product in Candidate Countries, 4/2001, 2/2002, 2/2003; Third Report on Economic and Social Cohesion
Latvia	Unemployment	Statistics in focus - Regional Unemployment Rates in the Central European countries 1999, 2000, 2001 (http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_02_06.pdf; http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_01_08.pdf; http://www.eu-datashop.de/download/DE/sta_kurz/thema1/dn_01_1.pdf)
	GDP	Third Report on Economic and Social Cohesion
Lithuania	Unemployment	Statistics in focus - Regional Unemployment Rates in the Central European countries 1999, 2000, 2001 (http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_02_06.pdf; http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_01_08.pdf; http://www.eu-datashop.de/download/DE/sta_kurz/thema1/dn_01_1.pdf)
	GDP	Third Report on Economic and Social Cohesion
Poland	Unemployment	National Statistical Office (Central Statistical Office http://www.stat.gov.pl)
	GDP	Statistics in focus, Regional Gross Domestic Product in Candidate Countries, 4/2001, 2/2002, 2/2003, Third Report on Economic and Social Cohesion

Romania	Unemployment	Statistics in focus - Regional Unemployment Rates in the Central European countries 1999, 2000, 2001 (http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_02_06.pdf; http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_01_08.pdf; http://www.eu-datashop.de/download/DE/sta_kurz/thema1/dn_01_1.pdf)
	GDP	Statistics in focus, Regional Gross Domestic Product in Candidate Countries, 4/2001, 2/2002, 2/2003; Third Report on Economic and Social Cohesion
Slovakia	Unemployment	Statistics in focus - Regional Unemployment Rates in the Central European countries 1999, 2000, 2001 (http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_02_06.pdf; http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_01_08.pdf; http://www.eu-datashop.de/download/DE/sta_kurz/thema1/dn_01_1.pdf)
	GDP	Statistics in focus, Regional Gross Domestic Product in Candidate Countries, 4/2001, 2/2002, 2/2003; Third Report on Economic and Social Cohesion
Slovenia	Unemployment	Statistics in focus - Regional Unemployment Rates in the Central European countries 1999, 2000, 2001 (http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_02_06.pdf; http://www.eu-datashop.de/download/EN/sta_kurz/thema1/dn_01_08.pdf; http://www.eu-datashop.de/download/DE/sta_kurz/thema1/dn_01_1.pdf)
	GDP	Statistics in focus, Regional Gross Domestic Product in Candidate Countries, 4/2001, 2/2002, 2/2003; Third Report on Economic and Social Cohesion
Croatia	Unemployment	Central Bureau of Statistics Statistical Reports
	GDP	Statistical report 1909/1999, 1115/2000, 1176/2002; Statistical yearbook of the Republic Croatia 2002, WIIW Countries in Transition