

REGIONAL DEVELOPMENT DISPARITIES AND THEIR CONNECTION WITH HIDDEN ECONOMY

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Abstract

Regional disparities in the development of regions of a country may slow the growth of the entire national economy. Determination of such disparities is required for the creation of proper economic policies, needed to take actions against factors hindering economic growth. Hidden economy is, on the other, a phenomenon reflecting various weaknesses of the economy related to similar factors as those affecting regional development. In this paper we discuss the issue of connection between the regional disparities and the evolution of hidden economy in the considered regions. Development indices for eight regions of the Republic of Macedonia have been determined for the period 2008–2015. Economic, demographic and (total) development indices are calculated using economic (GDP per capita, unemployment rate, etc.) and demographic indicators (natural population growth, net migration rate, etc.) and rankings by level of development for different sub-periods are displayed. Three out of eight regions performed substantially weaker than the national average, one region performed substantially better than the average, and the rest performed close to the national average. Close link with the evolution of hidden economy for the considered regions is observed, indicating that the disparities and hidden economy are connected. Therefore, economic policies dealing with regional development and hidden economy must be coordinated to obtain maximum results for regions and the whole country.

Keywords: Economic development, Economic index, Development index.

Jel Classification: E26; R11; R58

INTRODUCTION

Regional economic development is of particular interest for contemporary economies (Chapple and Montero 2016; Liang et al. 2016). Regional development is connected to local urban environmental conservation (El-Bastawisy 2016), the family business (Basco 2015), regional banks (Belke, Haskamp, and Setzer 2016), higher education (Albulescu and Albulescu 2014; Bonander et al. 2016), regional planning and development (Kempenaar et al. 2016; Susanto and Djuminah 2015), mining (Horsley et al. 2015), integration processes (Sadyrtidinov and Rodnyansk 2015), sustainable energy development

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(Gaigalis 2015), ecological economic development (Chen 2015), innovation potential (Adeliya and Renata 2015), ecosystem development (You et al, 2014) etc.

Our previous work was focused on comparison of the level of regional development, the level of regional disparities within Macedonia and the role of the clusters in reduction of the regional disparities. Possible causes for these disparities were identified. Based on these findings, economic policy measures for reduction of regional disparities and regional clusters development were discussed. It was concluded that regional clusters especially in less developed regions are expected to support some business activities in the realization of these economic policies and can reduce regional inequalities (Novkovska 2016a). Clusters' support to small business can held reduction of hidden economy and increasing of economic and social inclusion of the people from less developed regions.

Regional disparities are expected to be closely connected to another phenomenon affecting strongly economies of developing countries, the hidden economy. Hidden economy is also extensively investigated in recent years (Cichocki and Tyrowicz 2010; Goschin 2015; Murashov and Ratnikova 2016; Schneider 2016; Williams and Kayaoglu 2016). In this work we are studying simultaneously the regional disparities in Macedonia with the regional variations of hidden economy. The connection between these two phenomena is to be discussed and policy recommendations based on these findings proposed.

1. REGIONAL DEVELOPMENT IN MACEDONIA

Regional development and data showing that there is unequal development of the region within the country has recently started to attract the necessary attention of policy makers and researchers in the Republic of Macedonia. The Republic of Macedonia is divided into eight regions, with different levels of development (see Table 1).

From Table 1 it is seen that Skopje region has the highest gross domestic product (GDP) per capita (6205 EUR) – two to three times bigger than some of the other regions. Also, the number of graduated students per 1000 inhabitants is the highest one, the rate of natural increase is close to the highest one for Polog region, while the unemployment rate is close to the average for the country. Therefore, one can identify the Skopje region as the most developed one. For other regions, the picture is not as clear as for this one. For example, Polog region has the lowest GDP per capita, while the rate of natural increase is the highest one (3.70 %) and the unemployment rate is 30.6%, slightly higher than that of the national level (26.1%).

Table 1. Republic of Macedonia, economic and demographic indicators, 2015

	Economic indicators			Demographic indicators	
	GDP per capita in EUR	Employment rate (%)	Unemployment rate (%)	Rate of natural increase (%)	Graduated students per 1000 inhabitants (aged 25-64)
Republic of Macedonia	4350	42.1	26.1	1.30	6.89
Vardar Region	4707	45.8	24.5	-1.10	6.43
East Region	4171	54.6	17.5	-1.60	6.73
Southwest region	3235	36.2	33.9	0.80	6.04
Southeast region	5185	56.9	16.6	0.30	6.62
Pelagonia region	4328	52.2	21.1	-3.10	7.39
Polog region	1996	33.7	29.6	3.70	5.69
Northeast region	2555	30.6	43.2	0.80	5.88
Skopje region	6205	40.4	25.7	3.60	8.19

Source: State Statistical Office of Macedonia, MAKStat database

Two of the regions (Pelagonia region and East Region) have very high negative values of the rate of natural increase of population. The unemployment rate in Northeast region is exceptionally high (43.2%). The lowest unemployment rate is observed in Southeast region (16.6%), where the second highest value of GDP per capita is observed (5185 EUR).

An additional feature of the relations between main indicators is the following. In general, it is expected a low employment rate for a region to be accompanied by a high unemployment rate, for example 30.6% and 43.2%, respectively, in Northeast region. However, in the case of Polog region low employment rate of 33.7% is accompanied with rather low unemployment rate of 29.6%. Such discrepancies are expected to be due to large variations in hidden economy, an issue that will be analyzed later in this work.

Based on this, one concludes that precise analysis of the development of regions cannot be done only based on available indicators for the regions, but that some integral measure of development is required for this purpose. Below we show our results for development indexes and discuss the regional disparities based on thus derived data.

2. REGIONAL DISPARITIES

For the regional development policy to develop in the right direction, in line with EU requirements, the Republic of Macedonia has started the necessary process by passing the Law on Balanced Regional Development in 2007, which has served as the basis for the adoption of the Strategy for Regional Development of the Republic of Macedonia 2009–2019. Two additional Action Plans from 2010–2012 and 2013–2015 were adopted for the implementation of the Strategy.

Since the implementation of the Strategy in 2009, there has been significant progress in the sense of capacity building for the implementation of regional policy and the use of national resources as well as European funds (this include IPA). Regional development centres are already starting to be recognized as a serious factor in the use of these funds, and the assistance to the local governments for collecting funds for projects.

The question arises whether these policies are well targeted, having that the regional disparities in 2015 year remain at high level.

In order to obtain relevant indicators that will serve to create effective policies, regional disparities are studied in literature by using some synthetic indexes, reflecting various economic and social aspects (Goschin 2015).

In this paper, calculations of regional development indexes were done in accordance with the Government Decision on detailed criteria and indicators for determining the level of development of the regions (Official Journal of the Republic of Macedonia, No 162/2008). Development index, economic index and demographic index are determined as follows:

- 1) economic index from data for gross domestic product, unemployment rate, budget income per capita and value added growth of non-financial sector;
- 2) demographic index from data for natural increase of the population, aging rate, number of graduated students per 1000 residents, net migration per 1000 residents and
- 3) overall development index from thus obtained values of economic and demographic index.

Table 2. Development indexes for regions of Macedonia for three sub-periods from 2008–2015

Region	Development index			
	2008–2012	2009–2013	2010–2014	2011–2015
Skopje region	1.38	1.40	1.37	1.47
Southeast region	1.07	1.16	1.14	1.08
Pelagonia region	0.88	0.88	0.85	0.76
Polog region	0.76	0.62	0.69	0.72
Southwestern region	0.8	0.80	0.81	0.58
Vardar region	0.85	0.94	0.93	0.99
Eastern region	0.98	0.91	0.99	0.79
Northeastern region	0.79	0.68	0.83	0.74

Source: State Statistical Office, MAKStat database and own calculation of the indexes

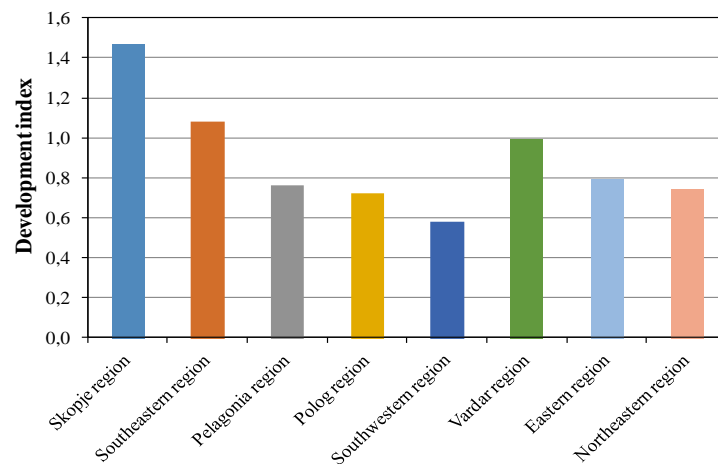


Figure 1. Comparison of development indexes for regions of Macedonia for 2011–2015.

All indexes were calculated for five year sub-periods starting with a different year. Here we show the values of the indexes for regions of Macedonia in the aim of analyzing differences. Values of the indexes for the period from year 2008 until year 2015 for successive five-year sub-periods are shown in Table 2.

It is seen that for all sub-periods Skopje region has the highest value of the overall development index of about 1.4. Southeast region, Vardar region and East region perform close to the average for the country (about 1). Pelagonia region has somehow lower performance, while Southwestern region, Polog region and Northeastern region have substantially lower values of development index than country average (0.8 and even lower). Indeed, there are some fluctuations with the time, but the main conclusions remain the same. Therefore, the observed disparities are stable on midterm, which means that there are some structural deficiencies causing them and that systematic actions are to be undertaken in order to reduce these disparities.

In Figure 1 the values of development index for all regions for the last sub-period considered (2011–2015) are graphically compared. The main feature of the observed differences is clearly visible in this figure: regions with high, medium and low development indexes. Contrary to the case of direct indicators displayed in Table 1, the

differences between the synthetic indexes are much smaller, since they represent integrally different factors of the development. Nevertheless, differences between the values of development indexes between regions are big, indicating that the conditions for development of the regions are substantially different.

3. HIDDEN ECONOMY AND REGIONAL DEVELOPMENT

Previously we studied in more details the hidden economy in Macedonia on national level using modified electric energy household consumption model Novkovska (2016b), as well as DYMIMIC (Dynamic multiple indicators multiple causes) method (Novkovska 2016c). Direct methods for estimation of the size of hidden economy, based on statistical surveys, have also been used for determination of the size of hidden economy in Macedonia (Williams et al. 2015). These methods have advantages in terms of comparability and detail, but tend to under-report the extent of undeclared work. In this work we use the DYMIMIC method for estimation of hidden economies of the eight regions. Details of the calculations for Macedonia are given in (Novkovska 2016c).

Table 3. Values of coefficients estimated with DYMIMIC method

<i>causal variables</i>	
direct_taxation	1.100
indirect_taxation	2.338
burden_of_state_regulation	0.189
unemployment_quota *	0.296
GDP_per_capita_PPP *	-0.151
<i>indicator variables</i>	
employment_quota	-0.024
annual_rate_of_GDP	-1.000
Change_of_currency_per_capita	0.557

* coefficients for variables unemployment quota and GDP per capita PPP are taken from the work (Schneider et al. 2010)

In brief, this empirical method is based on the statistical theory of non-observed variables, which takes into account multiple causes and indicators of the phenomenon to be measured. In order to make the estimation, a factor-analytical approach for measuring the hidden economy is used as non-observed variable monitored over the time. The model DYMIMIC is consisted of two parts and the measurement model connects non-observed variables with the monitored indicators. Within the calculations by the method DYMIMIC for Macedonia as causal variables are taken: direct tax burden divided by GDP, indirect tax burden divided by GDP, the burden of government regulation (the number of public administration employees divided by the total number of employees), the unemployment rate, GDP per capita in purchasing power parity. As indicator variables were used: the employment rate, the annual GDP growth and the changes of domestic currency per capita. Country specific parameters have been extracted for a long period from year 1991 to 2011. Since for the major part of the period used in determination of the parameters specific data for regions are lacking, in this work we use for region specific variables (unemployment quota and GDP per capita PPP).

Variations of hidden economy of the regions with respect to the national level for the period 2008–2015 have been calculated using the results of DYMIMIC method. They are shown as with the national level line in figure 2.

As is seen in Figure 2, the highest hidden economy is observed in Northeastern region. In the beginning of the period it was around 11% above national level, while later it decreases to about 7% above the national level. Lowest value is observed for Southeastern region. Before year 2012 it fluctuates around 6% below the national level, while later it became closer to the national level (about 4%).

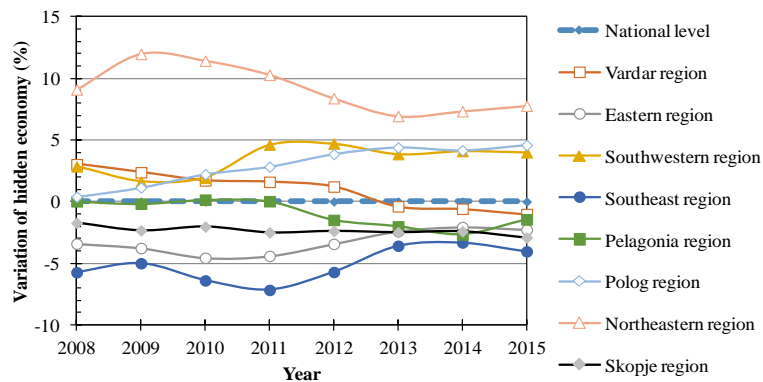


Figure 2. Temporal patterns of the deviations of hidden economy of the regions with respect to the national level for the period 2008–2015.

In general, region with development index above the national level (Eastern region, Skopje region and Southeast region) have size of the hidden economy below the national level. Inversely, the regions with development index below the national level (Southwestern region, Polog region and Northeastern region) have size of the hidden economy visibly above the national level.

CONCLUSIONS

In this work we found that regional disparities and hidden economy in regions for the case of Macedonia are closely connected. Above finding suggests that coordinated measures of economic policy have to be considered in coping simultaneously with both phenomena introducing severe risks of slowing the economic growth.

In general, differences in the size of hidden economy between the regions shrink with the time during the last decade. Above finding can be attributed to the effect of policy measures applied to reduce hidden economy. However, even if these policies appear effective in moderately reducing hidden economy and shrink the gap between the regions in that part of the economy, overall differences between the regions seems not be substantially reduced, as is displayed by the differences in development indexes.

Therefore, we conclude that the economic policies dealing with the regional development and hidden economy, have to be coordinated in order to obtain maximum results.

Reduction of disparities has to be intentionally focused on regional specifics.

Regional disparities that are “stable” long period of time like in the case of Macedonia urge multidisciplinary, not only locally, but respecting regional specifics, as well as interregional cooperation and coordination of development activities.

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