

## **IDENTIFYING THE INFORMALITY POLES AT COUNTY LEVEL IN ROMANIA. PERSPECTIVES FROM LABOUR APPROACH**

**Adriana AnaMaria DAVIDESCU(ALEXANDRU)<sup>a</sup>**

### **Abstract**

*The paper aims to estimate the level of informal employment in Romania and to identify the main informality poles at county level using the labour approach for the period 2000-2013. In order to do that, administrative data from Labour force balance were used providing the official labour use side in the labour market.*

*The empirical approach is based on Crnkovic-Pozaic(1999) and Svec (2009) for Croatia, Nastav și Bojnec (2007) for Slovenia.*

*The fundamental hypothesis of the labour approach is that the changes in official population activity rates are caused by factors related to the underground economy. One can suppose that the decreasing of this rate could indicate the existence of a flow of population from official to unofficial economy.*

*The analysis based on development regions revealed that Nord-East, South-West-Oltenia and East-South and South-Muntenia are poles of informality at the level of 2013.*

*At county level, Maramures, Bihor, Salaj, Harghita, Covasna, Alba, Botosani, Neamt, Suceava, Galați, Braila, Giurgiu, Calarasi, Ilfov, Gorj și Caras-Severin are the main poles of informality at local level for the year 2013.*

*Given results are approximatively and show the level of Romanian shadow economy which is presumably underestimated. These phenomena occur because of available statistics and method limitations.*

**Keywords:** informal employment, county level, informality map, Romania

**JEL Classification:** E26.

### **Author's Affiliation**

<sup>a</sup> Associate Professor, PhD, senior researcher, Department of Statistics and Econometrics, Bucharest University of Economic Studies, National Scientific Institute of Labour and Social Protection, adrianaalexandru@yahoo.com

## 1. Introduction

The terminology of this phenomenon has been extensively discussed. The term of informal sector was introduced by Hart while the undeclared work term was introduced in the late 90s by the European Commission and was defined as "all activities which are mainly legal but hidden from the state due to the fact that they are not declared to public authorities even if their declaration is required by the regulatory system of the State".

OECD (1998) proposed a similar definition, using the term hidden employment referring to the work / activity "which although not illegal in itself, did not have to be declared to one or more administrative authorities".

The International Labour Office (ILO), by two International Conferences of Labour Statisticians - the 15th in 1993 and the 17th in 2003 - adopted two concepts that complement each other: employment in the informal sector and informal employment (Hausmann, 2004).

According to the first concept, the definition has been achieved in terms of characterization of the production units in which the economic activity unfold (the output or enterprise approach) and according to the second concept, the definition is expressed in terms of characterization of the employed and their jobs (employment approach).

The employment in the informal sector represents all jobs (or persons) from enterprises from the informal sector, regardless of employment status and type of work (main or secondary activity). In other words, the informal sector was defined as consisting of:

- (i) informal businesses of self-employed and
- (ii) informal employers enterprises.

The informal employment comprises all informal jobs, regardless of their location – in enterprises from the formal sector, the informal sector enterprises and in the households (household sector) comprising:

- Self-employed workers and employers in their own informal sector enterprises;
- Contributing family workers, irrespective of the location of employment – formal or informal sector - because they have a contract or other form of formal employment and thus do not fall under national labor law and, respectively, social protection;
- Employees with informal jobs - regardless of their location: the enterprises belonging to the formal sector, the informal sector or enterprise of domestic staff employed in households;
- Members of informal production cooperatives;
- Self-employed workers who have worked for the production of goods exclusively for own person or their household (such as subsistence farmers or farms who build their own homes themselves).

The main purpose of this paper is to estimate the level of informal employment in Romania and to identify the main informality poles at county level using the labour approach for the

period 2000-2013. In order to do that, administrative data from Labour force balance were used providing the official labour use side in the labour market.

The empirical approach is based on Crnkovic-Pozaić(1999) and Svec (2009) for Croatia, Nastav și Bojnec (2007) for Slovenia.

The fundamental hypothesis of the labour approach is that the changes in official population activity rates are caused by factors related to the underground economy. One can suppose that the decreasing of this rate could indicate the existence of a flow of population from official to unofficial economy.

## 2. The labour approach

According to Crnkovic-Pozaić (1999) and Svec (2009), the basic idea underlying this method is activity rates follow-up in a certain country and comparison of the results with those in other countries. The method is one of indirect methods and is meaningful only if the changes in official population activity rates are caused by factors related to the underground economy. Its advantages are availability of data on rates and the simple calculation. The number of unemployed who work in unofficial economy can be revealed using this method, but the number of those employed in both unofficial and official economy remains unknown. The reduction of the rate can indicate the retreat of population from official and participation in unofficial economy.

According to Crnković-Pozaić (1997), the activity rate can be defined as a ratio of persons who either are or wish to be economically active to all persons of working-age:

- activity rate is computed as the total (employed and unemployed) over working-age persons (1)
- the employed + the unemployed = labour force (total labour supply, total working population, de facto economically active population) (2)

Alternative definition:

- Activity rate = (the employed + the unemployed) / total population (3)

The main steps are:

- Data on the employed and unemployed should be obtained from the National Institute of Statistics and de facto active population calculated according to the formula (2).
- Activity rate is to be calculated using the formula (1) or (3).
- Zero activity rate is defined according to the formula (1) or (3), in the process of which, initial data of the given time series are used. Hypothetically active population for the time period  $t$  is equal to the product of multiplication of the zero activity rate and total population in year  $t$ .
- After the values from steps: 1), 2) and 3) have been calculated, it is possible to calculate the value of the employed in unofficial economy according to the formula (4). Next, we will calculate the hypothetical activity rates and then we compare the values in each of

the years to the official, de-facto activity rates. The latter would normally be (by assumption) lower and the difference between the hypothetical and de-facto active population is the measure of the number of people working in the shadow economy.

The share of employed in the unofficial economy is computed as:

$$\text{➤ Share of employed in the unofficial economy} = \frac{\text{(hypothetically active} - \text{de facto active)}}{\text{de facto active}} \quad (4)$$

### **3. Research goal, methodology and data issues**

#### **3.1 Research goal**

The paper aims to estimate the level of informal employment in Romania and to identify the main informality poles at county level using the labour approach for the period 2000-2013. In order to do that, administrative data from Labour force balance were used providing the official labour use side in the labour market.

#### **3.2. Data issues**

For the estimation of the size of informal employment were used evaluated annual statistical data at total level, regional level and county level regarding the activity rates from administrative sources covering the period 2000-2013. The main source of data was the Labour force Balance from Tempo Database, National Institute of Statistics.

### **4. Empirical results**

In the process of estimation of informal employment has been used the alternative definition of activity rate (activity rate is equal to ratio of de facto active population to total population 15 years and over) because data on economically active population are not available.

If during the period 2000-2004 there is a sharp decline in the activity rate of population at the level of all regions, starting with 2005, it oscillated around a constant value until the beginning of 2009. In the period 2009-2011 there is a downward trend in the activity rate mainly due to the economic crisis, but for the last years 2012-2013 the activity rate registered a slowly increase. A discussion regarding the consequences of economic crisis in Romania is presented in Angelescu and Moldovan (2009).

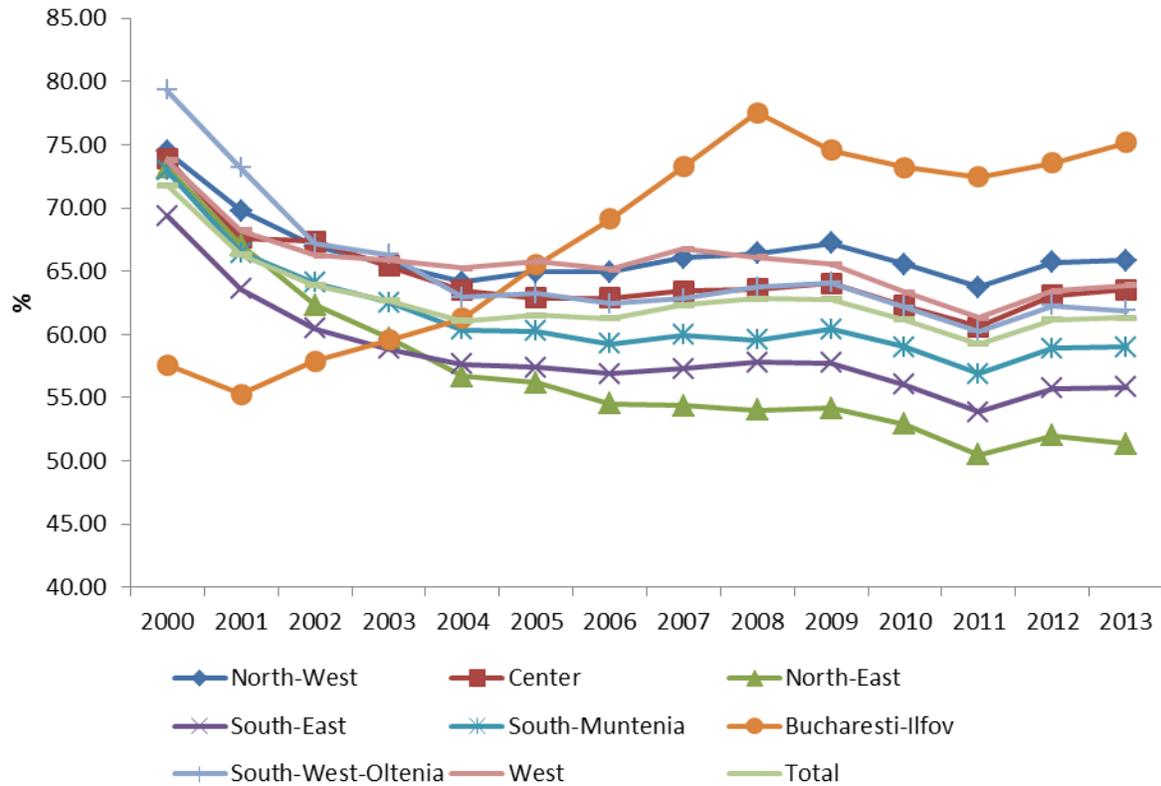


Fig.1. The evolution of activity rates at regional level in the period 2000-2013

By comparing both figures we find out that activity rate is inversely proportional to estimate of people employed in unofficial economy. As the activity rate falls, the unofficial employment grows. The obtained result is meaningful as the population switches from official to unofficial economy. One of the reasons for switching can be aspiration for higher earnings (black labour brings higher earnings). The assumption that everybody who leaves labour force enters unofficial economy is not entirely correct. Naturally, there is always a share of active population that becomes inactive, but this method cannot calculate its percentage.

However, the empirical results are approximatively, revealing the fact that the level of Romanian shadow economy is presumably underestimated due mainly to available statistics and method limitations.

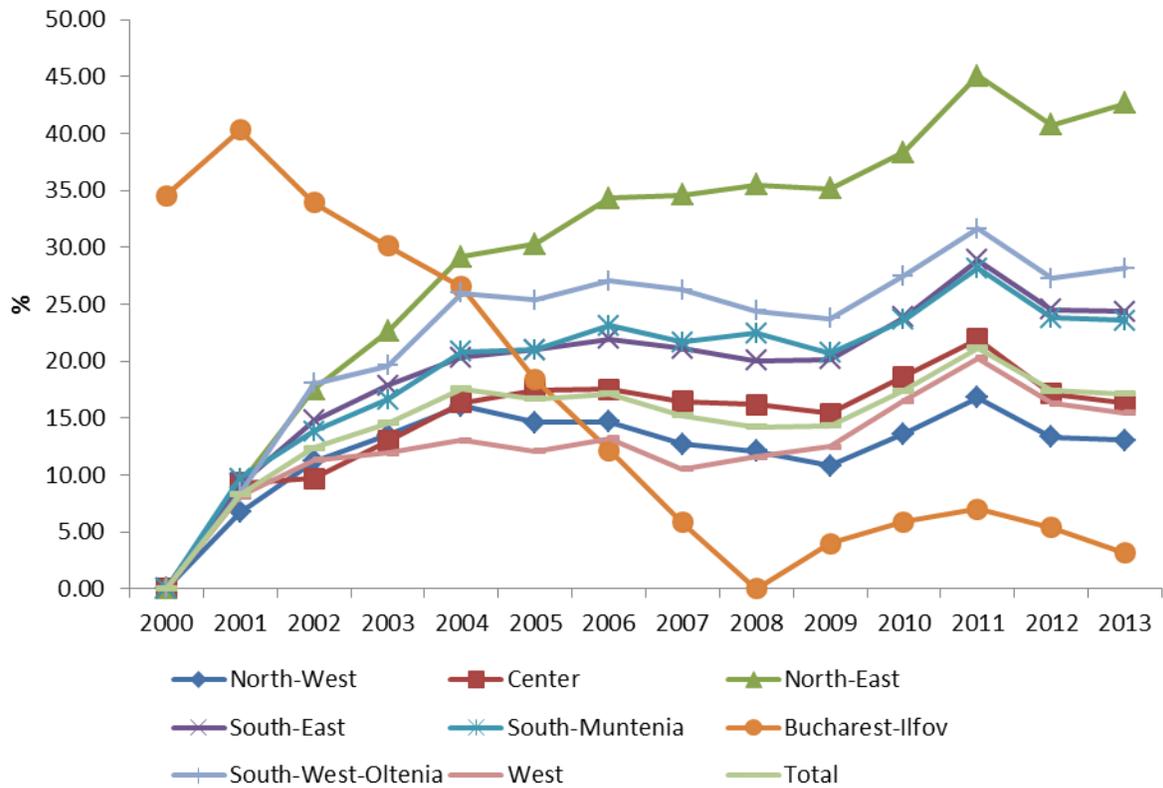


Fig. 2. Estimate of employment in unofficial economy for 2000-2013(% of civil active population)

The empirical results of regional analysis regarding the informal employment revealed the following:

- ✓ The regions with the highest ratio of informal employment over the analysed period were North-East, South-West-Oltenia, South-Munteia and South-East.
- ✓ Analysing the evolution of informal employment, it can be highlighted the fact that all regions revealed an upward trend of informal employment until 2004, while after this period, to be maintained relatively constant until the beginning of 2009. For the period 2009-2011, it can be observed an increase of informal employment, while for the last two years its ratio to decrease slowly in intensity.
- ✓ An atypical case is registered by the Bucharest-Ilfov region who exhibits a strong downward trend from 40% in 2001 to 5.85% in 2007. This downward trend can be

explained by the choice of the reference period in 2008 which considers the activities of the informal employment to have negligible size. Subsequently, there is an increase in informal employment activity which reaches its peak in 2011, while for the last two years it can be observed a slightly downward trend.

Overall, the employment in the informal economy based on administrative data revealed an upward trend until 2006 reaching 17% while for the next three years, employment fell by three percentage points. Since 2009, the employment in the informal economy begins to grow reaching 21% in 2011. For the last two years, can be observed a decrease in informality to 17% level from active civil population.

Training programs are an important tool of human resource management. According to the human capital theory, trainings generally lead to increased post-training wages, offering an alternative to the people who usually work in informal activities to increase their earnings. Roman and Popescu(2015) evaluate the effects of trainings on the Romanian migrants' income by conducting propensity score matching, confirming the human capital theory, indicating that after attending trainings Romanian migrants should expect higher incomes.

At the level of the year 2013, the regions with the highest rates of employment in the informal economy as% of active population are North-East with a percentage of 42.6%, South-West Oltenia (28%), South-East (24%), South-Muntenia (23%) and North-Vojvodina (15%).

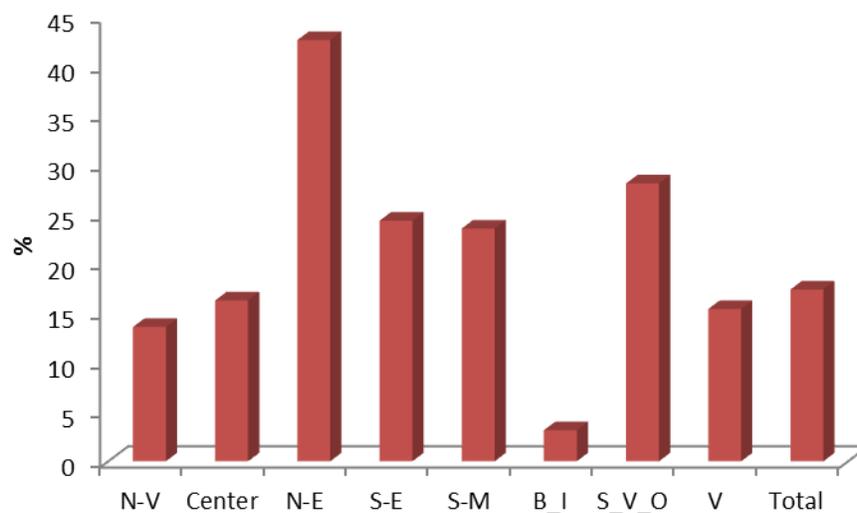
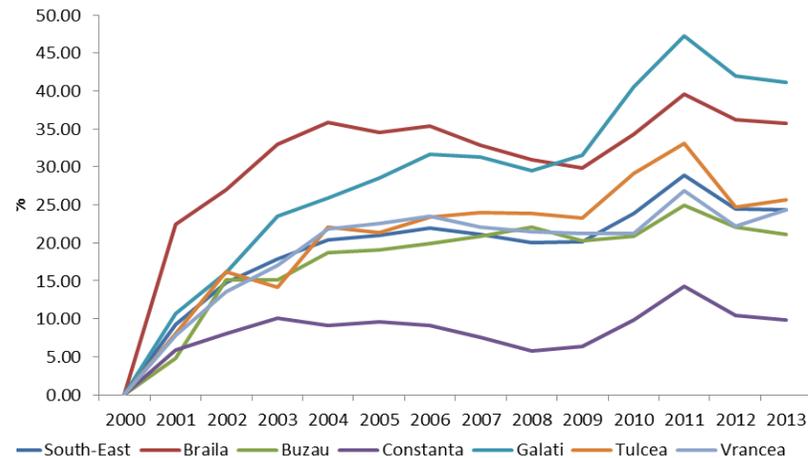
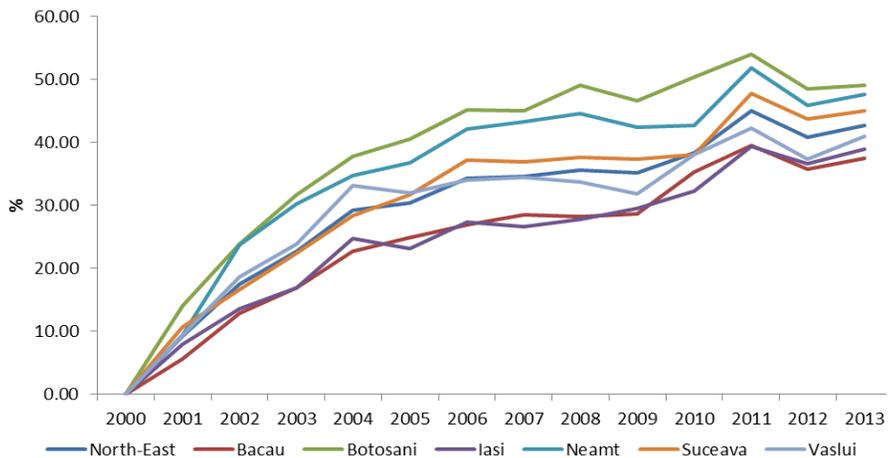
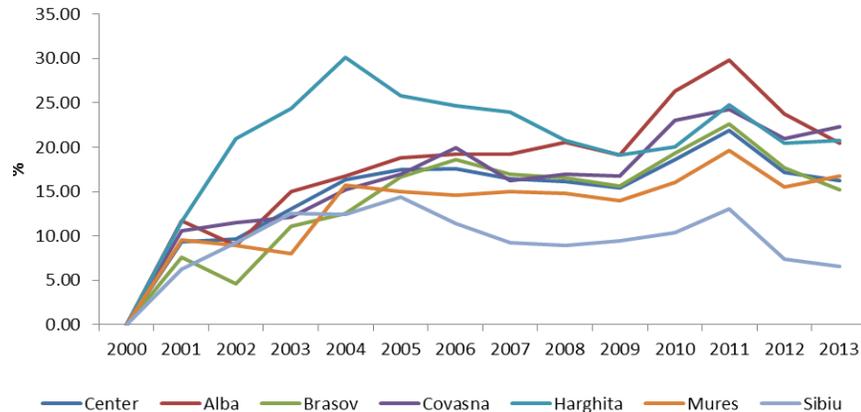
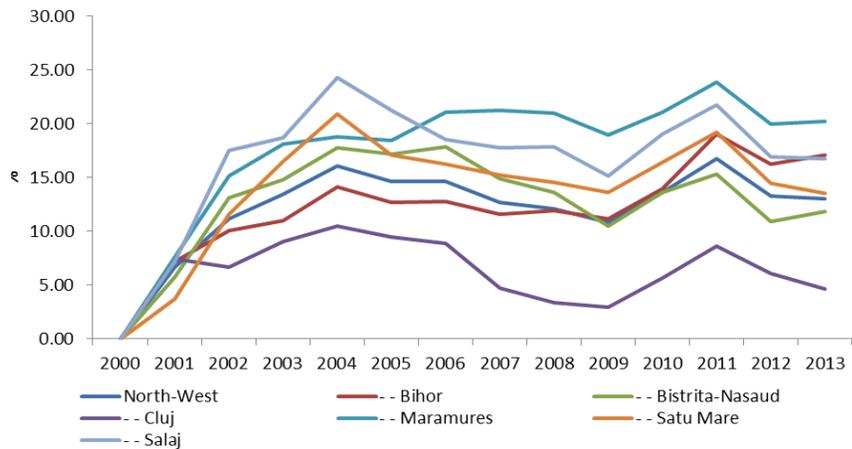


Fig.3. The informal employment at regional level in 2013(% of civil active population)

The results of county level analysis based on administrative data are presented in fig.4. The empirical results of the analysis at county level revealed the main poles of informality in 2013 for each region(fig.5):

- in the region Nord-West, the counties Maramures, Bihor and Salaj have the highest rate of informal employment;
- In the region Centre, Harghita, Covasna and Alba clearly detached in terms of informality from other counties;
- At the level of Nord-East region, the counties Botosani, Neamt and Suceava registered the highest rate of employment in informal economy;
- In South-East region, judetele Galați and Braila counties represents poles of informaty at national level;
- In region South-Muntenia, Giurgiu and Calarasi have the highest rate of informal employment;
- In the region Bucuresti-Ilfov, the informality pole is the county Ilfov;
- In the region South-West-Oltenia, Gorj county registered the highest rate of informal employment;
- In the region West, Caras-Severin can be considered to be the county with the highest rate of informal employment;



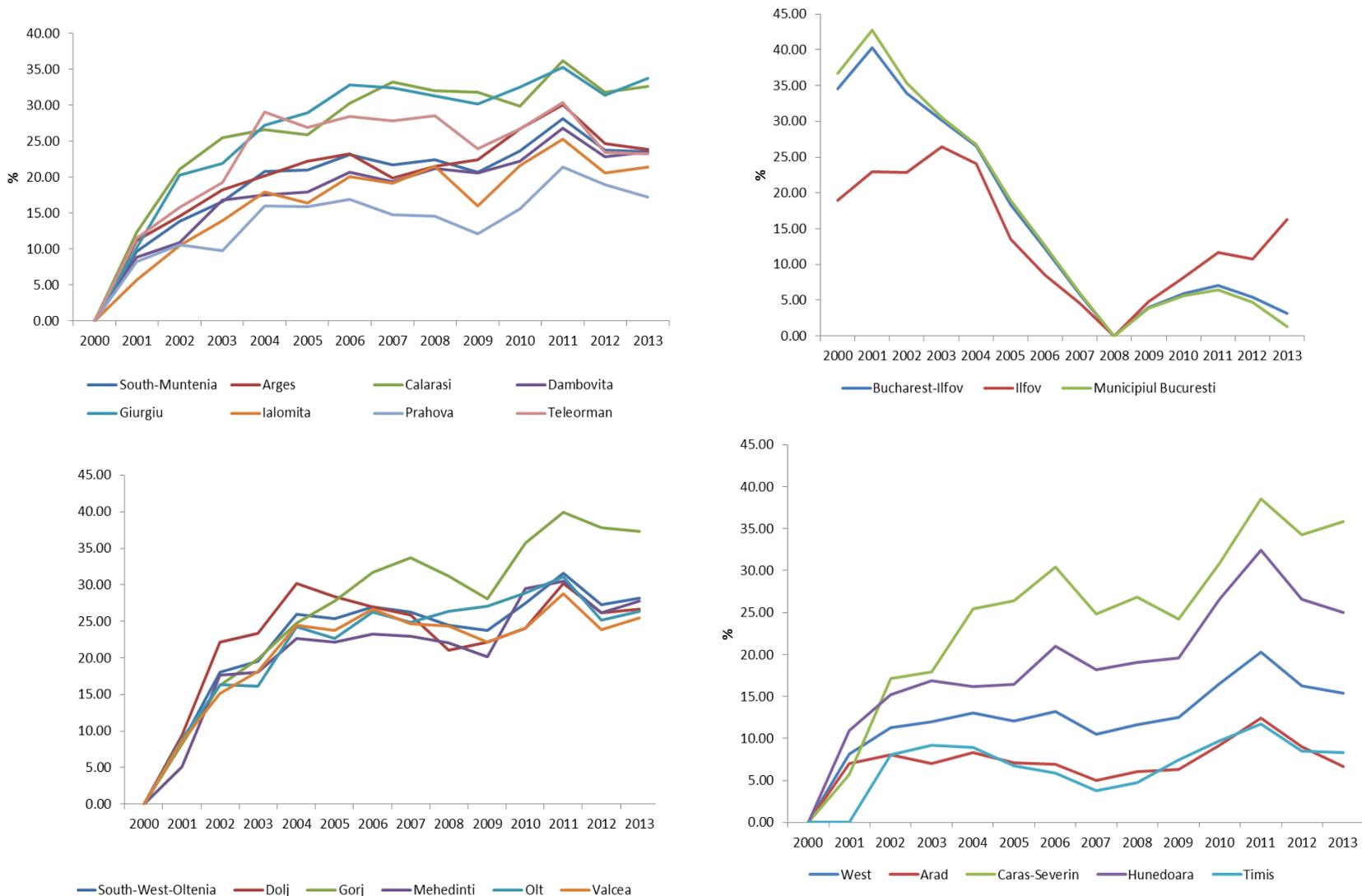
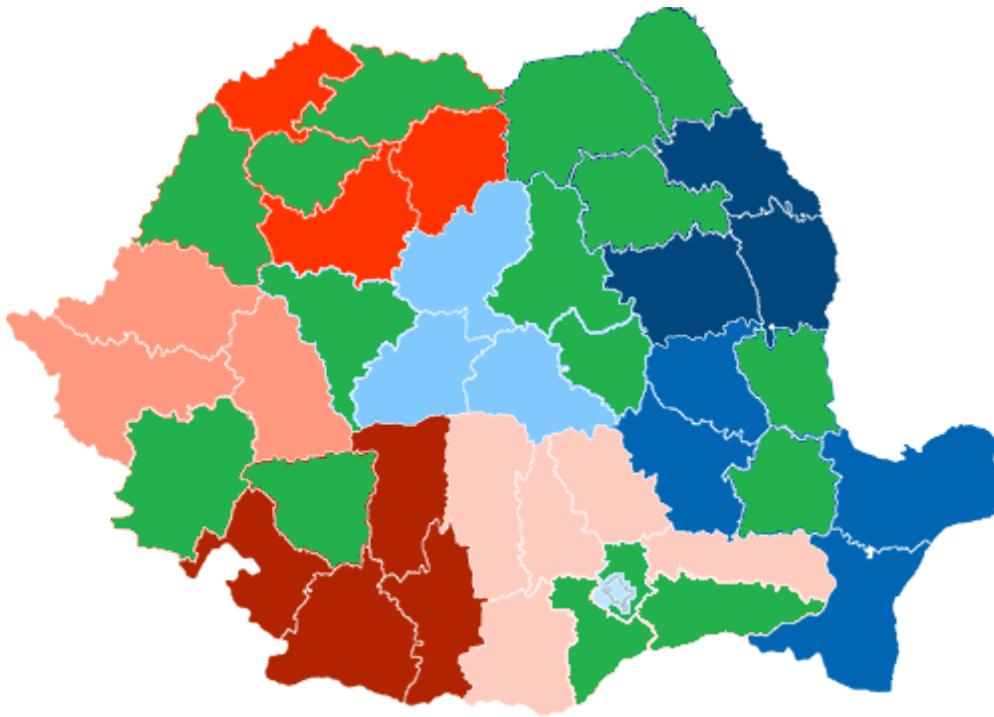


Fig.4. The employment in informal economy at county level in the period 2000-2013(% of active population)

Thus, using the empirical results has been highlighted the map of informality at the level of year 2013, the counties with high level of employment in informal economy being shaded with green color.



*Fig.5. The map of informality in 2013*

## **5.Conclusions**

The paper aims to estimate the level of informal employment in Romania and to identify the main informality poles at county level using the labour approach for the period 2000-2013. In order to do that, administrative data from Labour force balance were used providing the official labour use side in the labour market.

The fundamental hypothesis of the labour approach is that the changes in official population activity rates are caused by factors related to the underground economy. One can suppose that the decreasing of this rate could indicate the existence of a flow of population from official to unofficial economy.

The analysis based on development regions revealed that Nord-East, South-West-Oltenia and East-South and South-Muntenia are poles of informality at the level of 2013.

At county level, Maramures, Bihor, Salaj, Harghita, Covasna, Alba, Botosani, Neamt, Suceava, Galați, Braila, Giurgiu, Calarasi, Ilfov, Gorj și Caras-Severin are the main poles of informality at local level for the year 2013.

## References

- Angelescu, C., Moldovan, I. (2009). CAN WE TALK ABOUT FINANCIAL STABILITY IN 2009 ROMANIA?. METALURGIA INTERNATIONAL, 14, 42-46.
- Crnković-Pozaić, S. (1997), The unofficial economy measured by labour, *Financijska praksa*, 21 (1-2): 169-194.
- Crnkovic-Pozaic, S. (1999). *Measuring employment in the unofficial economy by using labour market data. In Underground economies in transition: Unrecorded activity, tax evasion, corruption and organized crime*, ed. E. Feige and K. Ott, 211–44. Aldershot: Ashgate.
- Davidescu (Alexandru), A. A. (2014), Estimating the size of Romanian shadow economy, a labour approach, *Journal of Social and Economic Statistics*, 3(3): 25-37.
- Davidescu Adriana AnaMaria, Strat Vasile Alecsandru(2015). The Relationship between Official Employment, Official Unemployment and Unofficial Employment in Romania, *International Journal of Economic Practices and Theories*, Vol. 5, No. 3, 2015 (May), pg.173-180, Special Issue on Competitiveness and Economic & Social Cohesion, e-ISSN 2247–7225.
- Hussmanns, R.(2004). Measuring the informal economy: from employment in the informal sector to informal employment, Working paper no 53, ILO, Geneva, December 2004.
- ILO(2013).Measuring informality: A statistical manual on the informal sector and informal employment, ISBN 9789221273882; 9789221273899 (web pdf) International Labour Office.
- ILO(1993). Resolution concerning statistics of employment in the informal sector, adopted by the Fifteenth International Conference of Labour Statisticians.
- ILO(2003). Geneva, Guidelines concerning a statistical definition of informal employment, endorsed by the Seventeenth International Conference of Labour Statisticians.
- Nastav, B., Bojnec, S.(2007), Shadow economy in Slovenia. The Labour approach, *Managing Global Transitions*, 5(2), 193-208.
- ROMAN, M., POPESCU, M. E. (2015). THE EFFECTS OF TRAINING ON ROMANIAN MIGRANTS'INCOME: A PROPENSITY SCORE MATCHING APPROACH. *Economic Computation & Economic Cybernetics Studies & Research*, 49(1).
- Svec. M. (2009), Underground economy in Croatia, *Financial Theory and Practice*, 33(4), 401-429.
- \*\*\* Ancheta AMIGO, Institutul National de Statistică  
<http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=AMG1101>
- \*\*\*Baza de date Tempo, Institutul National de Statistică  
<http://statistici.insse.ro/shop/index.jsp?page=tempo2&lang=ro&context=15>
- \*\*\*Balanța forței de muncă, Institutul National de Statistică

<http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=FOM103B>

\*\*\* Baza de date Employment and Unemployment, Eurostat.

\*\*\* Eurobarometer, UNDECLARED WORK IN THE EUROPEAN UNION report, 2013.

\*\*\* COM (1998). Communication of the Commission on Undeclared Work, 7 April 1998

\*\*\* OECD(2004). Employment Outlook, 2004.