

MAPPING THE INFORMAL EMPLOYMENT IN ROMANIA. A COMPARATIVE ANALYSIS BASED ON LABOUR AND DISCREPANCY APPROACHES

Adriana AnaMaria DAVIDESCU (ALEXANDRU)¹

PhD, Associate Professor, Department of Statistics and Econometrics,
Bucharest University of Economic Studies, Bucharest, Romania

E-mail: adrianaalexandru@yahoo.com



Abstract:

Informal employment is a widespread phenomenon in Romania. Employees often lack access to social protection or employment benefits, and untaxed envelope payments are common.

As the OECD report stated "informality on this scale is a serious problem. It means less tax income for the state and therefore less room to provide infrastructure and public services. The insufficient reach of safety nets to the informal sector renders people vulnerable to economic shock and poverty".

Trying to abolish informal employment isn't the solution. A better understanding of the complexity of informal employment is needed.

The paper aims to estimate the level of informal employment in Romania at regional level using the labour approach and the discrepancy approach for the period 2000-2013 highlighting the regions with the highest level of informality using the both methods.

In order to do that, administrative data from Labour force balance, survey data from Labour Force Survey and data from Labour Cost Survey were used.

The empirical analysis based on the methods used revealed that using the labour approach survey data, the regions with the highest level of informality are South-West-Oltenia, South-East and South-Muntenia, while using administrative data the regions North-East, South-West-Oltenia, South-East and South-Muntenia represented poles of informality.

Using the second method, the discrepancy approach, the regions with the highest number of persons employed in the informal sector are South-Muntenia, North-East and North-West.

The main conclusion regarding the evaluation of informal employment at regional level using different methods of estimation highlighted two main regions as poles of informality-South-Muntenia and Nord-East for the year 2013.

Key words: informal employment, regional level, informality map, Romania

Introduction

The main purpose of this paper is to estimate the level of informal employment in Romania for the period 2000-2013 using the two methods-labour approach and discrepancy approach and to identify the main informality poles at regional level for the last year 2013 using all the estimations.

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 starting point for this approach was represented by the studies of Crnkovic-Pozaić (1999) and Svec (2009) for Croatia, Nastav i Bojnec (2007) for Slovenia.

In order to evaluate the informal employment using the labour approach, we use two types of data: administrative and survey data. The basic difference in the data is their application and comparability.

The second method of evaluation, the discrepancy method relies in the difference of actual (real) and official (registered) use of labour. The method analyses the discrepancy between the number of employees revealed by the Labour Force Survey and the number of employees revealed by the Labour Cost Survey.

There are two sources of evidence for these two aspects. On the one hand, the Labour Force Survey (LFS) reveals the actual side. On the other hand, the official records from the Romanian Employment Agency (REA) or the Romanian Institute of Statistics (RIS) provide the official labour use side in the labour market.

A previous estimation of the shadow economy in Romania using this method was made for both administrative and survey data for the period 2000-2009 and the empirical results indicate a substantial difference in the results obtained. While the figures from administrative data report only 800 thousand persons unofficially employed, the survey results reveal about 1900 thousand persons that work in unofficial sector (Davidescu, 2014). This difference is due to the different ways of data collecting for the official employment and un-employment.

Davidescu (2015) estimated the level of informal employment in Romania and to identify the main informality poles at county level using the labour approach based on administrative data from Labour force balance for the period 2000-2013 revealing that Maramures, Bihor, Salaj, Harghita, Covasna, Alba, Botosani, Neamt, Suceava, Galati, Braila, Giurgiu, Calarasi, Ilfov, Gorj si Caras-Severin are the main poles of informality at local level for the year 2013.

2. The methodology

According to Crnkovic-Pozaić (1999) and Svec (2009), the labour approach 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:

$$\text{activity rate} = (\text{the employed} + \text{the unemployed}) / \text{persons of working-age} \quad (1)$$

$$\text{the employed} + \text{the unemployed} = \text{labour force (total labour supply, total working population, de facto economically active population)} \quad (2)$$

Alternative definition:

$$\text{activity rate} = (\text{the employed} + \text{the unemployed}) / \text{total population} \quad (3)$$

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 step 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). By this, the so called *hypothetical* activity rates are calculated and then compared 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:

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

In evaluating the informal employment using the discrepancy method, the Household Labour Force Survey provides information on labour supply and it was realized in individual households, with a quarterly basis on a yearly sample volume of sample 112 320 households.

According to the methodology of LFS, the employee is considered to be the person who exercise their activity based on a labor contract in an economic or social unit - regardless of its form of ownership – or to individuals in exchange to a salary remuneration, in cash or in kind, in the form of commission etc. By convention, this status was registered also for conscripts (until 2007).

On the other hand, the Labor Cost Survey provides information on labor demand and it was realized in units with legal personality, with annual periodicity, on a sample volume of about 26 000 economic and social agents. The investigation includes other units in the sector, now, units of the central government, local government units, and units of consumer and handicraft cooperatives.

According Labour Cost Survey, number of employees at the end of the reporting period is the number of salaried employees with labor contracts / service report on temporary or permanent, in full or in part (including the labor contract / service report suspended) records existing in the company at the end of the reporting period. There are not included the enrolled employees seconded to work abroad and those who accumulate multiple functions and have the basic function of the reporting unit. They exclude military personnel.

3. Data

The size of the informal employment was estimated using the labour approach, differentiating between the two methods of employment estimate in unofficial economy: the one based on historical activity rates (administrative data) and the other based on labour

force survey (LFS) using annual data covering the period 2000-2013. The main sources of data are Labour force survey (LFS) and Labour force balance.

In the case of discrepancy method, the number of persons employed in informal economy was estimated using two main data sources: The Labour force survey(LFS) and Labour Cost Survey.

The main source of these data is represented by National Institute of Statistics Tempo database.

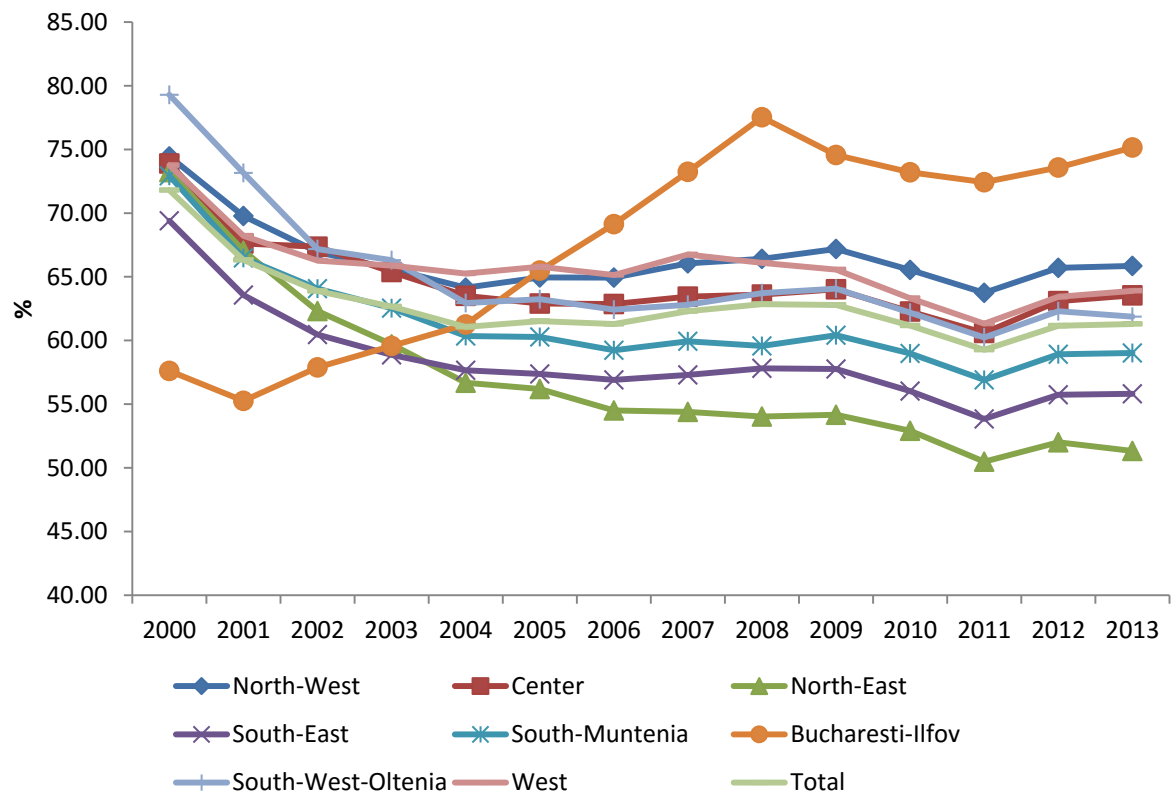
4. Empirical results

4.1. The labour approach using administrative data

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) and Moldovan (2011).

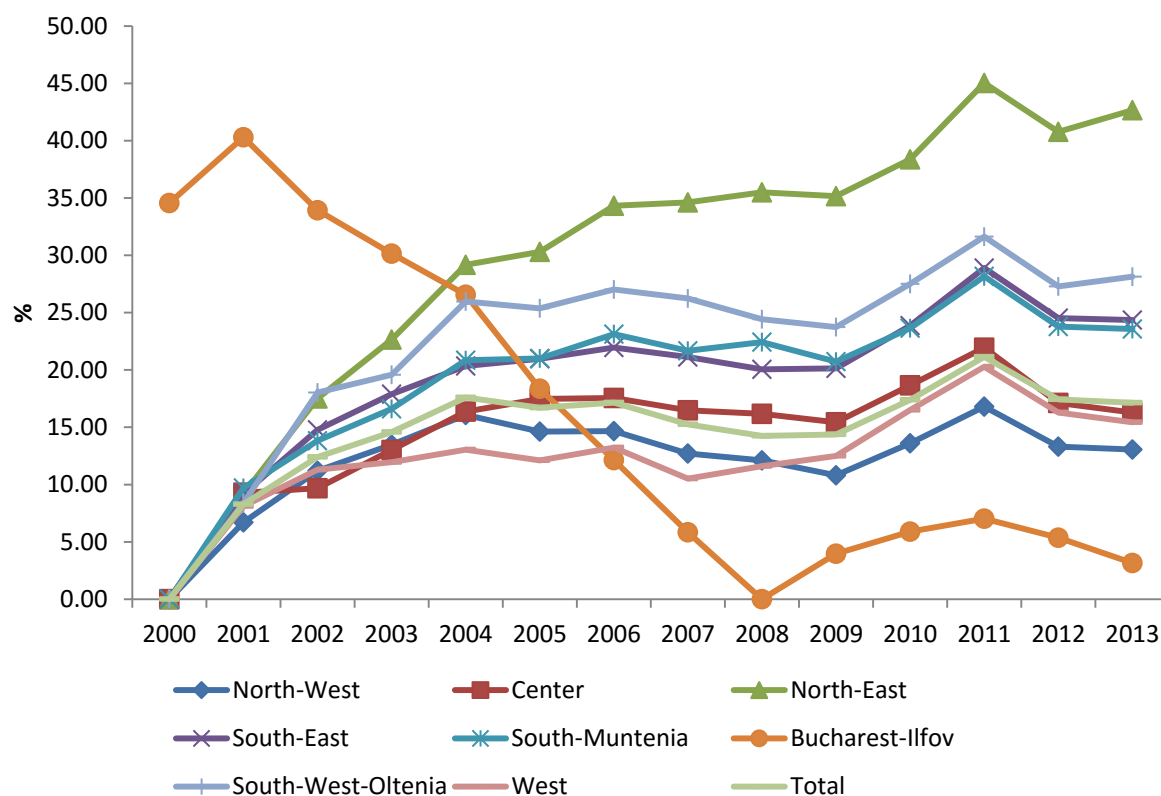
Fig.1. The evolution of activity rates at regional level in the period 2000-2013



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 analyzed period were North-East, South-West-Oltenia, South-Muntenia and South-East.
- ✓ Analyzing 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 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.

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) and South-Muntenia (23%).

Fig.3. The map of informality in 2013 (administrative data)

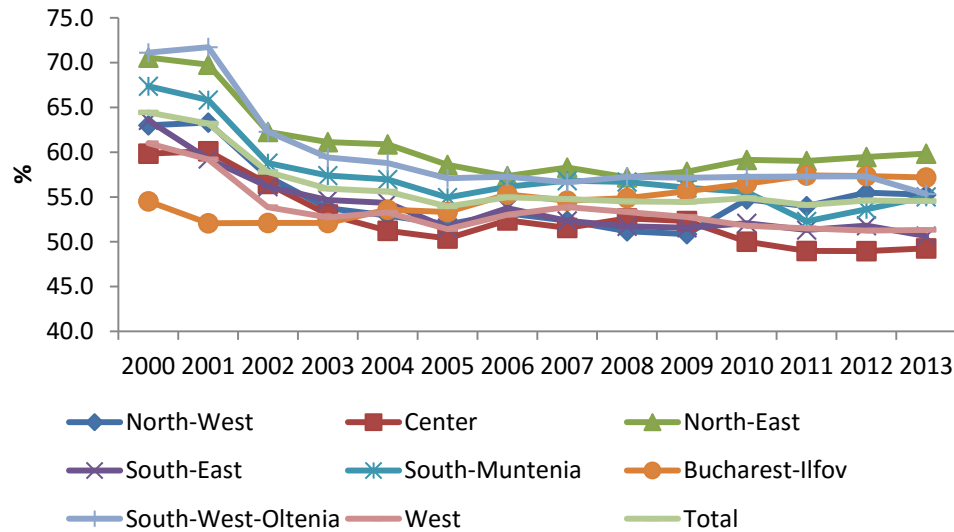


4.2. The Labour approach using survey data

In order to determine the informal employment were used annual data regarding the activity rates from Labour Force Survey for the period 2000-2013 at regional level.

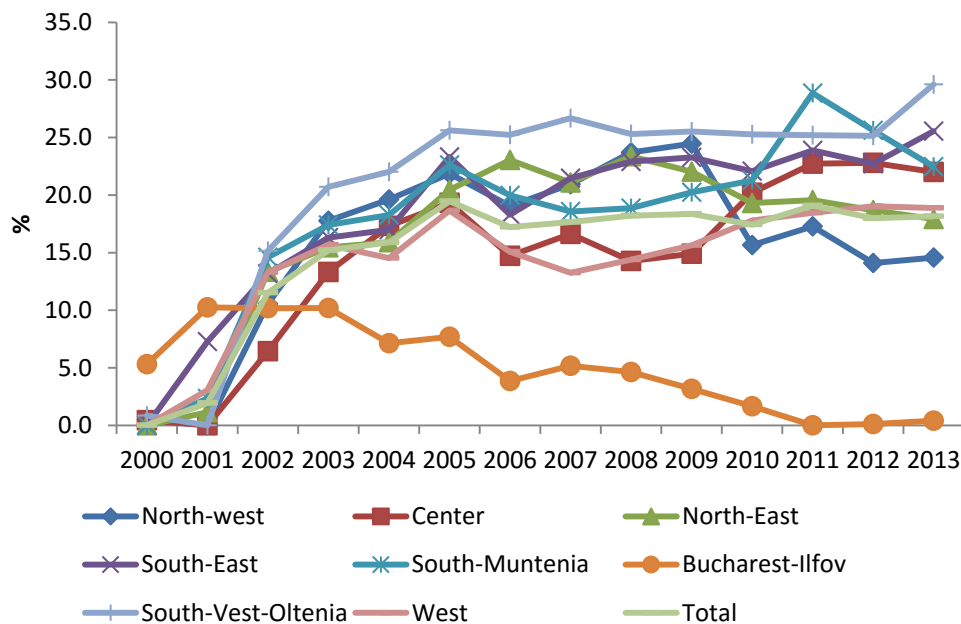
Analyzing the evolution of the activity rates using the LFS survey data, there is downward trend in the activity rates until 2007, while furthermore it highlighted a slowly increase who has maintained until the end of 2013. So, the activity rate lies between 49% and 71% during the whole period, with the exception of Bucharest-Ilfov region who manifest a ascendant trend registering the value of 52.1% at the end of 2001 and has reached the value of 57.2% at the end of 2013.

Fig.4. 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.

Fig. 5. Estimate of employment in unofficial economy for 2000-2013
(% of civil active population)



Analyzing the ratio of people who work in the informal economy as % of active population on regions of development it was highlighted an ascendant tendency for the whole period in some regions while for others starting with 2008, the tendency was descendant. So, regions like North-West and North-East manifest a downward trend for the last years.

An atypical situation is registered by the Bucharest-Ilfov exhibiting unlike other regions a strongly decreasing trend until the reference year 2011 in which it is considered that informal businesses were negligible, as the average rate of activity reaches their peaks.

The analysis revealed the following regarding the informal employment on the regions of development:

- ✓ At the level of NW region, it showed an upward trend registering a value of 24.5% at the end of 2009, and then decline until reaching the value of 14.6% in 2013.
- ✓ The Central region, kept an ascending trend over the period analyzed, employment in the informal economy registering a value of 6.4% of active pop. in 2002 and reaches the value of 22% at the level of 2013.
- ✓ The N-E Region showed an upward trend over the period 2000-2008, reaching 23.4% in 2008, and later decreased to 17.9% at the end of 2013.
- ✓ The S-E Region showed an upward tendency registering the value of 13.2% in 2002 and increased 25.5% in 2013.
- ✓ The S-W Region showed a decreasing trend until 2011, reaching the value of 28.9% in 2011 and 22.5% of the active population in 2013.
- ✓ An atypical case is Bucharest-Ilfov region exhibiting a strong downward trend from 10.2% in 2002 to 1.7% in 2010. This downward trend can be explained by the choice of the reference period (year 2011 it is considered to be the year in which the activities of the informal economy had negligible size).
- ✓ South-West Oltenia has the highest share of employment in the informal economy into the formal active population, highlighting a predominantly ascending trend, registering a value of 29.6% at the end of 2013.
- ✓ The West Region also show an upward trend for the period under review, reaching 13.3% in 2002 and reach 19% in 2013.

Overall, the employment in the informal economy based on data from the LFS survey revealed an upward trend until 2011 reaching 19% for the last two years. In the year 2013, the regions with the highest rates of employment in the informal economy as% of active population were: South-West Oltenia with a percentage of 29.6%, South-East (25.5%) and South-Muntenia (22.5%).

Fig.6. The map of informality in 2013(survey data)



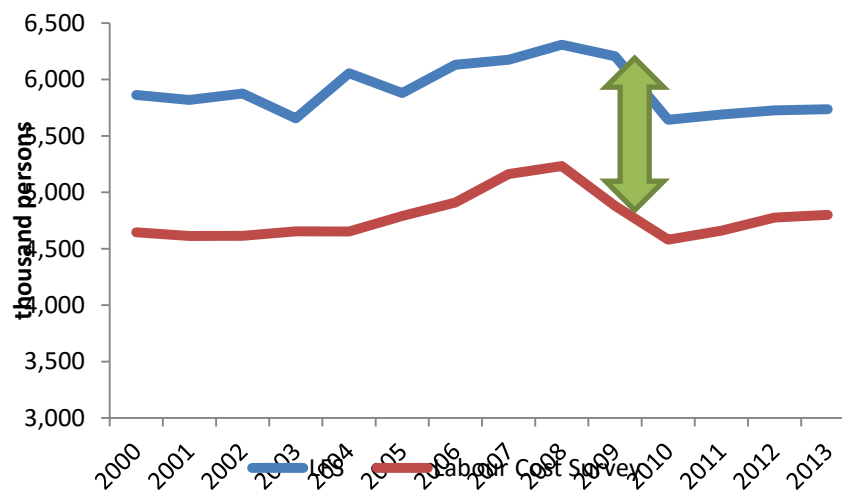
4.3. The Discrepancy method

In order to evaluate the level of informal employment we have analyzed the number of employees from two alternative sources-Labour Force Survey and Labour Cost Survey for the period 2000-2013.

Analyzing the evolution of the number of employees in Romania, having as a data source Labour Force Survey it can be highlighted an upward trend until 2008, when it has reached his maximum, 6308 thousand persons. In the period 2009-2010, the number employees begins to decrease reaching the value of 5644 thousand persons, with an absolute decrease of 664.5 thousand persons. For the period 2010-2013, the number of employees fallen on a slightly upward trend, reaching the value of 5.737.2 thousand people.

The data on employees using Labour Cost Survey revealed an increasing trend until 2008, reaching the value of 5232 thousand people, and sharply decreased to 4580 thousand persons at the end of 2010. For the last years, we have a slowly increased trend reaching the value of 4900 thousand persons at the level fo 2013.

Fig.7. The evolution of the number of employees over the period 2000-2013



There are great differences between the data published by the National Statistics Institute (INS) on the number of people officially working and those that are paid for work performed.

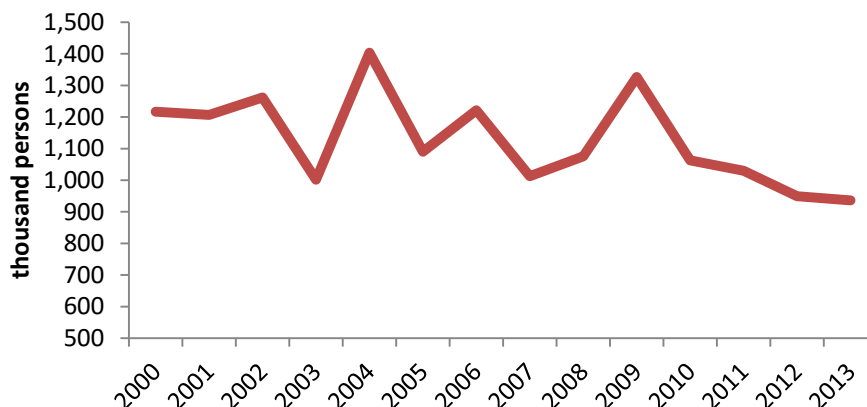
It still represents a practice in Romania, the situation in which employees receive money in envelope, without the employer to pay any tax to the state. The phenomenon has flourished particularly during the crisis. The main causes for this phenomenon are the excessive taxation on labor and lack of flexibility in the field, which does not allow hiring closely with periodic job creation but also the excessive bureaucracy.

Transforming the full-time contracts in part-time contracts, the usage of civil agreements or PFA contracts PFA represents the most usual methods through which employers avoid payment of taxes related to employees.

Analyzing any discrepancies between the number of employees on the basis of the two alternative data sources, it was highlighted the fact that the number of employees according to the Labour Force Survey for the period 2000-2013 stands at the level of 5.8 million people, while the number of employees estimated by the Labour Cost Survey is strongly underestimated to 4.8 million people, the difference can be attributed to people working illegally, adding up also the number of self-employed persons from agriculture.

Analyzing the people employed in the informal economy for the 2000-2013 period revealed that there are two points of maximum: the year 2004 (1400 thousand persons) and the year 2009 (1326 thousand persons). Since 2010, their number starts to decline registering a value of 936 thousand people at the end of 2013.

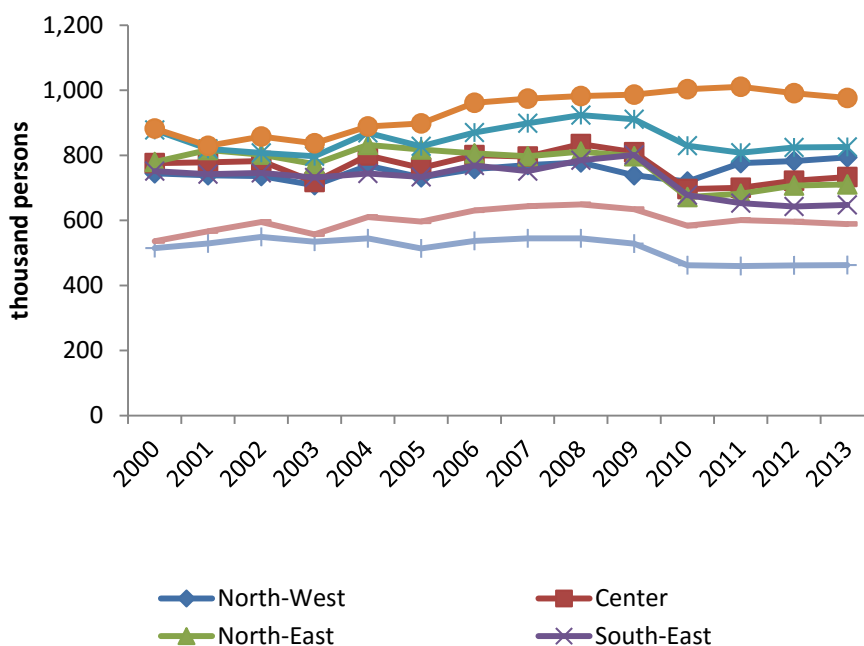
Fig.8. The number of persons employed in informal sector(thousand persons)



Analyzing now the distribution of employees on regions of development having the source of Labour Force Survey, it was highlighted an increase of its number in Bucharest-Ilfov region with 93.9 thousand persons from 882 thousand persons in 2000 to almost 976 thousand persons in 2013.

At the opposite side, it is South-West-Oltenia with the smallest number of employees for the whole period. The onset of the economic crisis in early 2009 is manifested in the number of employees in 2010, when it recorded steep declines in all regions except Bucharest-Ilfov region.

Fig.9. The evolution of employees on regions during the period 2000-2013



Data source: Employment and unemployment database, Eurostat

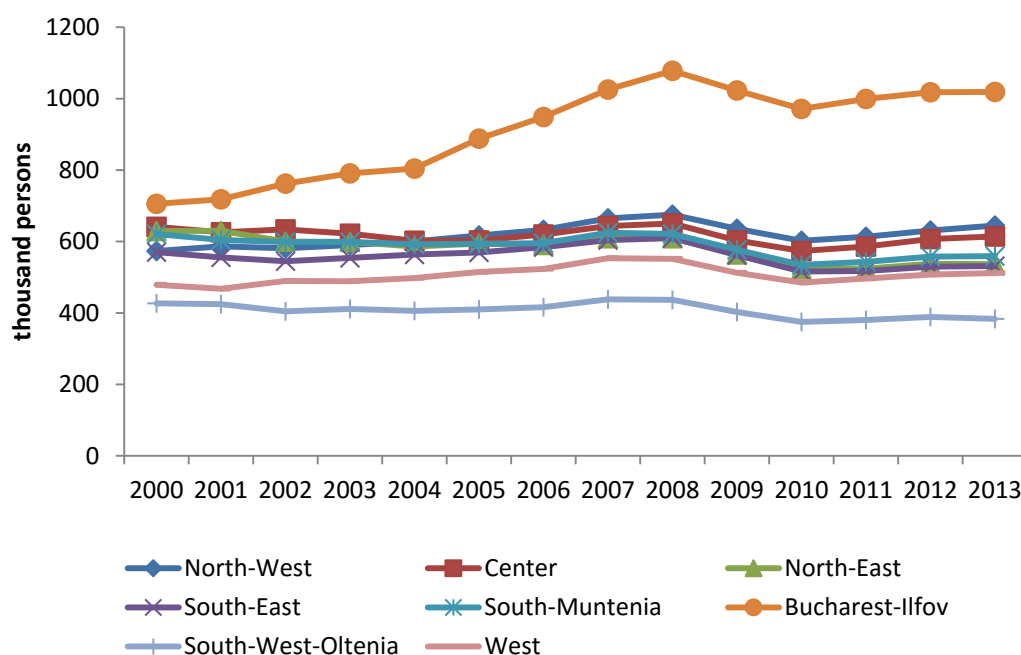
According to the Labor cost Survey in enterprises, it appears that the Bucharest-Ilfov region has the largest number of employees, unlike South-West Oltenia. The tendency in Bucharest-Ilfov region is steadily upward until 2008 because in 2008-2010, the trend to reverse and decrease their number. For the latest period there was a slight upward trend.

The decreasing of the demand for products and services has led to the reduction of employees in times of crisis. If the number of employees was decreased in 2010 compared to 2008 by about 651.7 thousand people, the number of employed persons decreased by only 575.5 thousand people. This means that part of the companies have fired part of the employees, but only on paper, because they continued to work, being paid without legal forms.

According to the Eurobarometer survey on undeclared work, Romania occupied the third place a year ago, alongside Greece and Slovenia among the countries where citizens have admitted receiving wages "in envelopes".

An important factor in the spread of undeclared work is held by taxes too high; a special category is represented by the day laborers in agriculture, the new form of "Day Laborers Law" adopted in 2014, provides clear rights and obligations for such workers.

Fig.10. The evolution of employees by regions of development during the period 2000-2013

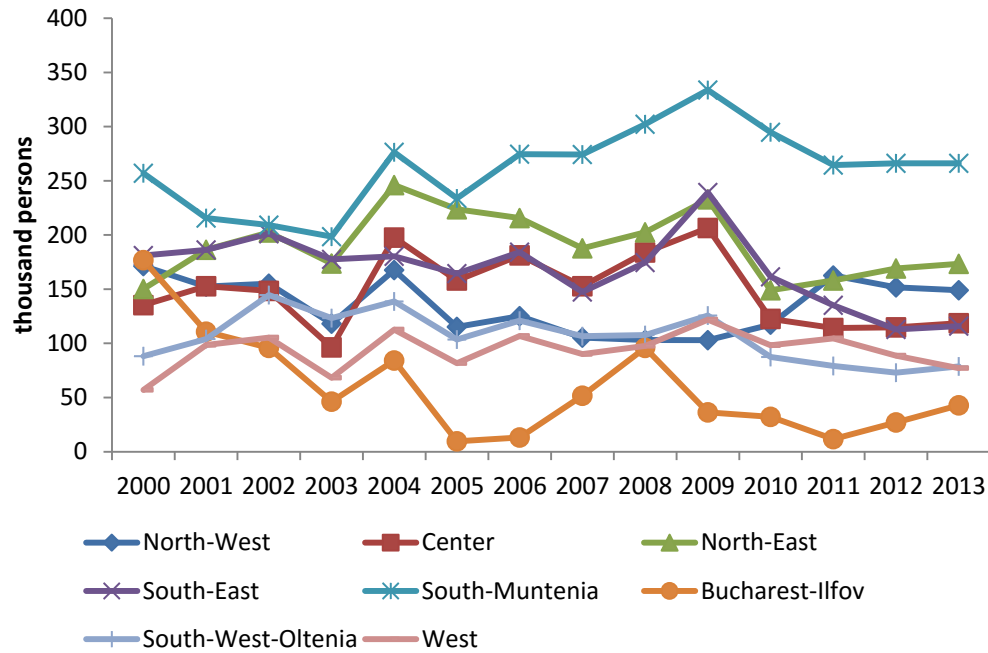


Data source: Tempo database, National Institute of Statistics

At regional level, the region with the highest number of persons employed in the informal economy is South-Muntenia region for the entire analyzed period ranging from 250 thousand people in 2000 to 334 thousand people in 2009, reaching its peak at the onset of the economic crisis. For the past years, there is a downward trend, registering in 2013 the value of 266 thousand people.

At the opposite side, it was the Bucharest-Ilfov region with the lowest number of people involved in undeclared work in 2000 that recorded the amount of 177 thousand people and decreasing to only 42.8 thousand in 2013, falling by almost 75%.

Fig.11. Evolution of people employed in the informal economy by regions of development during 2000-2013



Analyzing the informality poles at the level of 2013, using the results of discrepancy method, we can highlighted the fact that South-Muntenia, North-East and North-West regions represented the informality poles for the year 2013, registering the highest number of people who work without legal forms. Contrarily, the Bucharest-Ilfov region represented the region with the smallest number of informal employed persons.

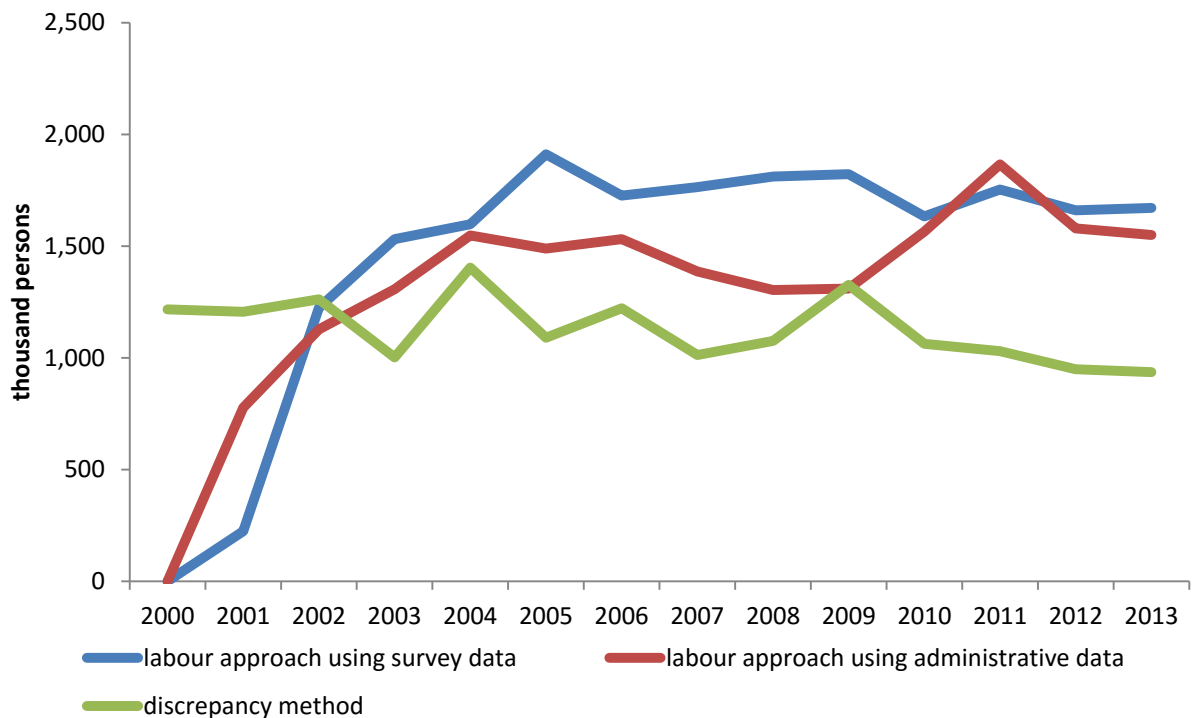
Fig.12. The map of informality in 2013(discrepancy method)



4.4. The comparisons of informal employment evaluations based on methods used

Comparing the results based on the labour approach using two alternative data sources (administrative data and survey data) as well as the results from discrepancy approach, it was pointed out the fact that unofficial employment based on labour approach using administrative data was deeply under evaluated, while the survey data reported significantly higher results, with the exception of the year 2011, when the number of informal employed persons from administrative data was 1866 thousand persons, in contrast with the results of 1753 thousand persons from LFS survey data.

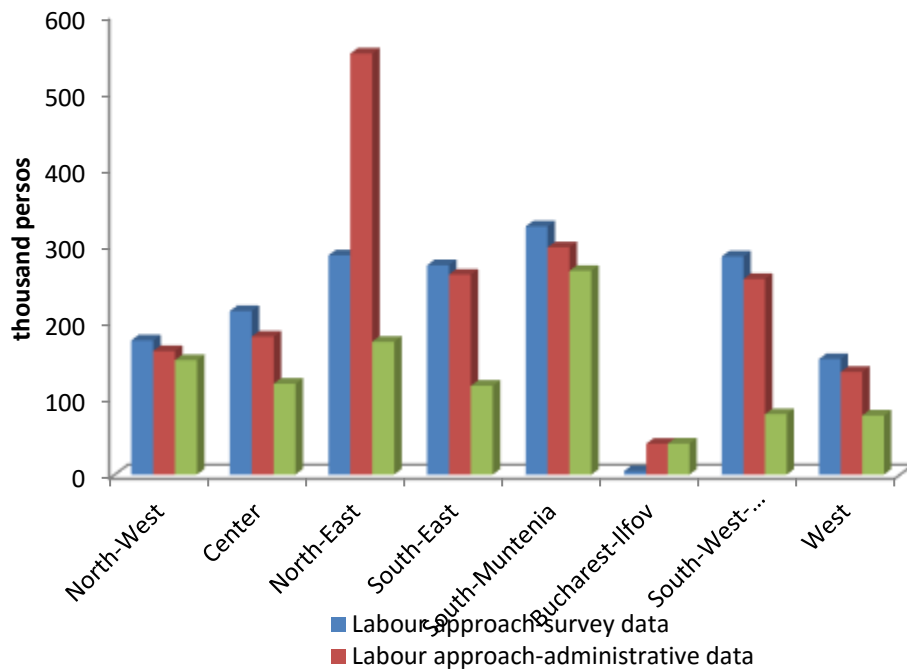
Fig.13. The number of people employed in the informal economy during the period 2001-2013 using different methods



For 2013, the results from administrative data reported 1.55 million people that are employed informally, while the results from survey data suggested a larger number, 1.67 million people working in the informal sector. Since the total population aged 15 and over is similar for both data sources (the differences are negligible), variations in results may be due to differences in data on employment and unemployment.

The considerably lower results for informal employment based on administrative data can be explained by the lower figures of civilian employment and the unemployment compared with LFS survey data.

The empirical results based on the discrepancy method are considerably lower than those obtained from labour approach using both data sources. Thus, the number of people employed in the informal sector recorded two points of maximum: the year 2004 (1400 thousand) and 2009 (1.326 million people). Since 2010, their number started to decline registering the value of 936 thousand people.

Fig.14. The number of informal employed persons at regional level of 2013

The comparative analysis at regional level for 2013 based on the methods used revealed the following:

- Using labor approach based on survey data, the region with the highest number of people employed in the informal sector are South-West Oltenia, South-East and South-Muntenia;
- Using the labor approach based on administrative data, North-East, South-West Oltenia, South-East and South-Muntenia regions represented the poles of informality at the level of 2013.

Fig.15. Comparisons of informality based on the methods used at the level of 2013

Based on the results of discrepancy method, the regions with the highest number of persons employed in the informal sector are South-Muntenia, North-East and North-West.

The overall conclusion of the evaluation methods of informal employment on the regions of development based on the results of different methods of evaluation highlighted two main regions as poles of informality at the level of 2013-South-Muntenia and North-East regardless of the evaluation method.

Main conclusions

The paper aimed to estimate the level of informal employment in Romania at regional level using the labour approach and the discrepancy approach for the period 2000-2013 highlighting the regions with the highest level of informality using the both methods.

In order to do that, administrative data from Labour force balance, survey data from Labour Force Survey and data from Labour Cost Survey were used.

Comparing the results based on the labour approach using two alternative data sources (administrative data and survey data) as well as the results from discrepancy approach, it was pointed out the fact that unofficial employment based on labour approach using administrative data was deeply under evaluated, while the survey data reported significantly higher results, with the exception of the year 2011, when the number of informal employed persons from administrative data was higher comparative with the informal employed persons from survey data.

The considerably lower results for informal employment from the last years based on administrative data can be explained by the lower figures of civilian employment and the unemployment compared with LFS survey data.

The empirical results based on the discrepancy method are considerably lower than those obtained from labour approach using both data sources. Thus, the number of people employed in the informal sector recorded two points of maximum: the year 2004 (1400 thousand) and 2009 (1.326 million people). Since 2010, their number started to decline registering the value of 936 thousand people.

The empirical analysis based on the methods used revealed that using the labour approach based on survey data, the regions with the highest level of informality are South-West-Oltenia, South-East and South-Muntenia, while using the administrative data the regions North-East, South-West-Oltenia, South-East and South-Muntenia represented poles of informality for year 2013.

According to the second approach-discrepancy approach-, the regions with the highest number of persons employed in the informal sector are South-Muntenia, North-East and North-West.

The main conclusion regarding the evaluation of informal employment at regional level using different methods of estimation highlighted two main regions as poles of informality-South-Muntenia and Nord-East for the year 2013 regardless of the evaluation method.

It is important to note that because of its undetectable nature and character and taken into account the limitations of the methods, any theoretical or empirical inference derived from these results should always be regarded as an approximation.

References

1. Angelescu, C., Moldovan, I., **can we talk about financial stability in 2009 romania?**. Metalurgia international, 14, 2009, pp. 42-46.
2. Crnković-Požaić, S., **The unofficial economy measured by labour**, Financijska praksa, 21 (1-2), 1997, 169-194.
3. Crnkovic-Požaić, S., **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, 1999, pp. 211-44. Aldershot: Ashgate.

4. Davidescu (Alexandru), A. A., **Estimating the size of Romanian shadow economy, a labour approach**, Journal of Social and Economic Statistics, 3(.3), 2014, pp. 25-37.
5. Davidescu, A. A. **Identifying the informality poles at county level in romania. Perspectives from labour approach**. Journal of Social and Economic Statistics, 2015, 4(2), pp.75-87.
6. Feige, E. L., **Defining and estimating underground and informal economies: The new institutional economics approach**. World Development, 18 (7), 1990, pp. 989-1002.
7. Hussmanns, R., **Measuring the informal economy: from employment in the informal sector to informal employment**, Working paper no 53, ILO, Geneva, December 2004.
8. ILO, **Measuring informality: A statistical manual on the informal sector and informal employment**, ISBN 9789221273882; 9789221273899 (web pdf) International Labour Office, 2013.
9. ILO, **Resolution concerning statistics of employment in the informal sector**, adopted by the Fifteenth International Conference of Labour Statisticians, 1993.
10. ILO, **Geneva, Guidelines concerning a statistical definition of informal employment**, endorsed by the Seventeenth International Conference of Labour Statisticians, 2003.
11. Moldovan, I. A. **Corelarea piețelor bursiere: analiza in perioada anterioara crizei si in timpul acesteia**, Economie Teoretica si aplicata, nr.8/2011, <http://store.ectap.ro/articole/629.pdf>
12. Nastav, B., Bojnec, S., **Shadow economy in Slovenia. The Labour approach**, Managing Global Transitions, 5(2), 2007, pp. 193-208.
13. Svec. M., **Underground economy in Croatia, Financial Theory and Practice**, 33(4), 2009, pp. 401-429.
14. Voinea L., Albu, L., **Economia informala si impactul acesteia asupra pietei muncii**. Blocul Național Sindical, 2011.
15. *** **Ancheta AMIGO**, Institutul National de Statistică
16. <http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=AMG1101>
17. *** **Baza de date Tempo**, Institutul National de Statistică
18. <http://statistici.insse.ro/shop/index.jsp?page=tempo2&lang=ro&context=15>
19. *** **Balanța forței de muncă**, Institutul National de Statistică
20. <http://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=FOM103B>
21. *** Baza de date Employment and Unemployment, Eurostat.
22. *** Eurobarometer, **UNDECLARED WORK IN THE EUROPEAN UNION report**, 2013.
23. *** COM. **Communication of the Commission on Undeclared Work**, 7 April 1998
24. *** OECD. **Employment Outlook**, 2004

¹ **Adriana AnaMaria DAVIDESCU (ALEXANDRU)** has graduated the Faculty of Cybernetics, Statistics and Economic Informatics in 2006. She holds a PhD diploma in Economic Cybernetics from 2011 with the paper "Investigating the impact of unemployment rates on the size of the Romanian shadow economy". Currently she is associate professor within the Department of Statistics and Econometrics from the Bucharest University of Economic Studies Romania and senior researcher within National Scientific Research Institute for Labour and Social Protection. During the period June 2014-September 2015, she was a postdoctoral researcher in the project POSDRU/159/1.5/S/142115 „Performance and excellence in doctoral and postdoctoral research in Romanian economics science domain”, analyzing the nature of the relationship between official economy and unofficial economy in Romania. She is the author of 4 books in the field of informal economy, of more than 37 articles in international journals of which 8 in ISI journals, more the 32 articles published in volumes of international scientific conferences recognized in the country and abroad. She has also participated to more than 5 courses and summer schools. She has a reach experience in the field of informal economy coordinating 5 projects in the field and more than 30 research projects as member team.