

UNEMPLOYMENT AND MIGRATION IN RURAL AND URBAN AREAS: EVIDENCE FROM ROMANIA

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Abstract

This paper focuses on the relationship between unemployment and migration, but also on the effects of demographic structure of the active population on these social phenomena in Romania, between 2010 and 2014. The analysis of panel data was the research method used in order to highlight the association between registered unemployment and departure from the domicile, including external migration. The data was provided by the National Institute of Statistics, both for urban and rural areas. The results of the statistical analysis show that unemployment and migration fluctuated in the period under study. Differences between rural and urban area were registered mostly in the case of unemployment, the rural space being more affected by the lack of jobs. It is also found that, before the economic crisis, the unemployment was the strongest motivation for changing the domicile for the majority of migrants, but after the crisis, the unemployment was associated with a cohort attitude, a generation trend and a peer group.

Key words: labor force, factors, unemployment, young people, mobility, residence

1. INTRODUCTION

According to Eurostat (2016), the defining elements for unemployment are: duration, concern for finding a job, work experience and methods of searching for a job. One of these methods is labour mobility, more precisely the internal and external migration flows. In specialty literature, there are conflicting opinions according to which departure from the domicile can create a balance or rather an imbalance when it comes to employment. Basile *et al.* (2012) demonstrates that interregional migration could increase the disparities in terms of unemployment, instead of equilibrating the situation of labor force. According to Guriev and Vakulenko (2015), the richest regions are characterised by lower internal migration flows and one of the barriers to labor mobility for the potential migrants belonging to poor regions is represented by the lack of affordability to move.

The effects of internal migration on individuals' life are analysed not only from the labour market perspectives, but also from the life satisfaction degree: short distance but also long distance migration improve people's happiness, despite the social and psychological effects created by this phenomenon (Nowok *et al.*, 2013).

Regarding external migration, people's freedom of movement favour both temporary and permanent emigration. The main motivations of those who are moving away from home, inside or outside the country, are related to the lack of opportunities in finding a job in their place of residence, or the desire to earn more and, thus to ensure their desirable standard of living in economic and social terms.

On the other hand, demographic factors may create additional pressure on people looking for a job, influencing their migration decision. In the case of external migration of young qualified persons, from Central and Eastern European countries to developed countries of the world, there are some fears for the countries of origin, about the risk to lose this segment of active population. The "brain drain" phenomenon considerably affects the socio-economic development of sending countries (Botev, 2012).

Contrarily to this opinion, Kahanec (2013) considers that the enlargement of European Union provides triple benefits: for the sending and receiving countries, the relief and the absorption of the redundant labor force and for the migrants the opportunities offered in terms of career development and material well-being. On the other hand, analysing the relationship between immigration and unemployment, Fromentin (2013) demonstrates that there is a long-term negative effect of immigration on the equilibration of labor market for the receiving countries.

The recent economic crisis affected European Union countries in terms of unemployment of young population segment, which overpassed 50% in countries such as Greece and Spain (Van Mol, 2016). A positive relationship between unemployment ratio and migration aspiration of young people is demonstrated by Van Mol (2016). In the case of Romania, Marginean (2014) considers that, between 2007 and 2013, emigration was the solution found by young people to fight against unemployment. Thus, approximately 140 000 young people aged between 15 and 24 years old leaved Romania in 2012 (Marginean, 2014).

In this context, the present research aims to examine, for Romania, the relationship between the number of registered unemployed persons, the number of migrants (persons who have moved, including those who go abroad) and demographic structure of the active population.

2. MATERIAL AND METHODS

The method used was the analysis of a statistical data panel, data provided by the National Institute of Statistics, for all the territorial administrative units (3.181 administrative territorial units-UAT), from 2010-2014.

The analysis of panel data is used in order to describe a social change in terms of attitudes and behaviours, to estimate causal models or to measure the effects of a policy/phenomenon (McManus, 2011). According to Kunst (2010), panels are more edifying than simple time series in the case of unemployment: "A 10% unemployment rate is less informative than a panel of individuals where all of them are unemployed 10% of the time or one where 10% are always unemployed".

With the purpose of achieving the objectives of the present research, the correlations between the indicators used were tested, analysing the results from both a longitudinal perspective, year after year, as well as in a panel manner, using Panel Least Square.

In order to highlight the residential differences, the relationship between registered unemployment and departure from the domicile was comparatively analysed, for residences of both urban and rural areas. In the analysis, the following relative indicators were used: a) registered unemployment: the number of unemployed persons (UNEMP variable), b) the share of unemployed persons in the population of 15-64 years old (UNEMPRATE variable), c) departure from the domicile: the number of persons who changed domicile (DEPART variable), d) the share of persons who changed domicile in the total population (DEPARTRATE variable), e) the demographic factor, the number of persons aged between 15-24 years old (YOUNG variable), f) the share of persons aged between 15-24 years old in the population of 15-64 years old (YOUNGRATE variable).

The effect of demographic variables on migration was more strongly highlighted in the research by making correlations between the logarithmic variables UNEMP, DEPART, and YOUNG. The logarithmic variables are used in the regression models when there is a non-linear relationship between the dependent and the independent variables. On the other hand, the procedure of log transformation is used in regression models in order to normalise highly skewed variables (Benoit, 2011).

3. RESULTS AND DISCUSSION

The results of the analysis show that the unemployment trend for the period of 2010-2014 was a fluctuant one, with a drop in the number of registered unemployed persons in 2011, followed by increases in 2012 and 2013, while in 2014 a decline was registered again. Similarly, the number of migrants has relatively fluctuated, the only difference being that in 2014 the number of migrants increased, unlike the number of unemployed persons (fig. 1).



Fig. 1. The evolution of DEPART and UNEMP variables between 2010-2014 (number of persons)

As far as residence areas are concerned, data indicates that the share of migration reported to the total population is relatively similar in rural and urban areas. However, the share of unemployed persons in the total active population is more than two times higher in rural areas, as opposed to urban areas (fig. 2 and fig. 3).

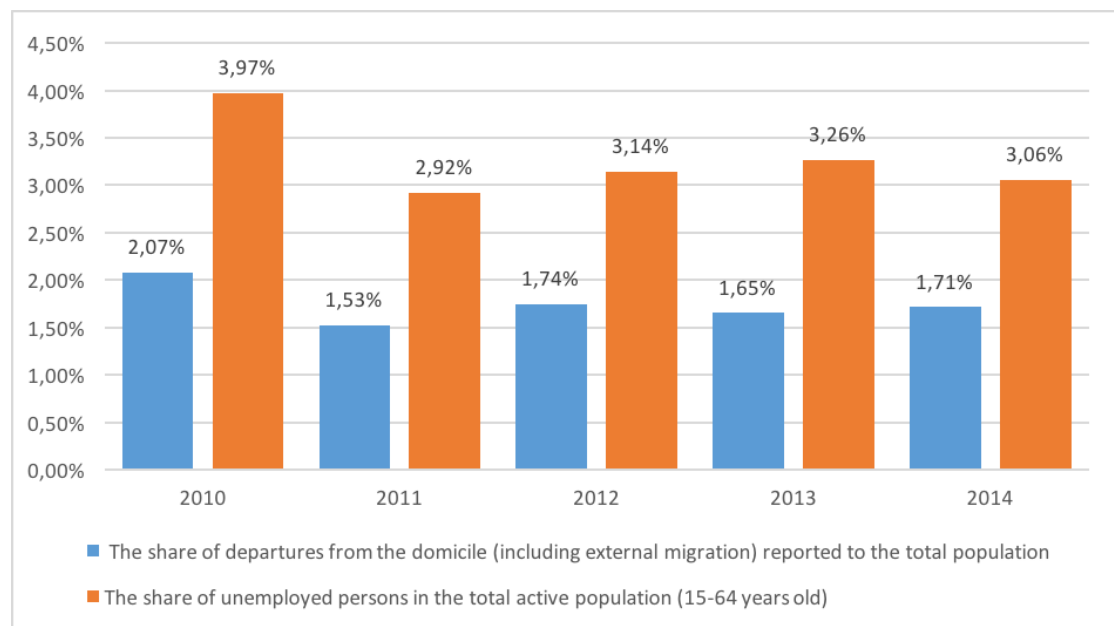


Fig. 2. The evolution of DEPARTRATE and UNEMPRATE variables between 2010-2014

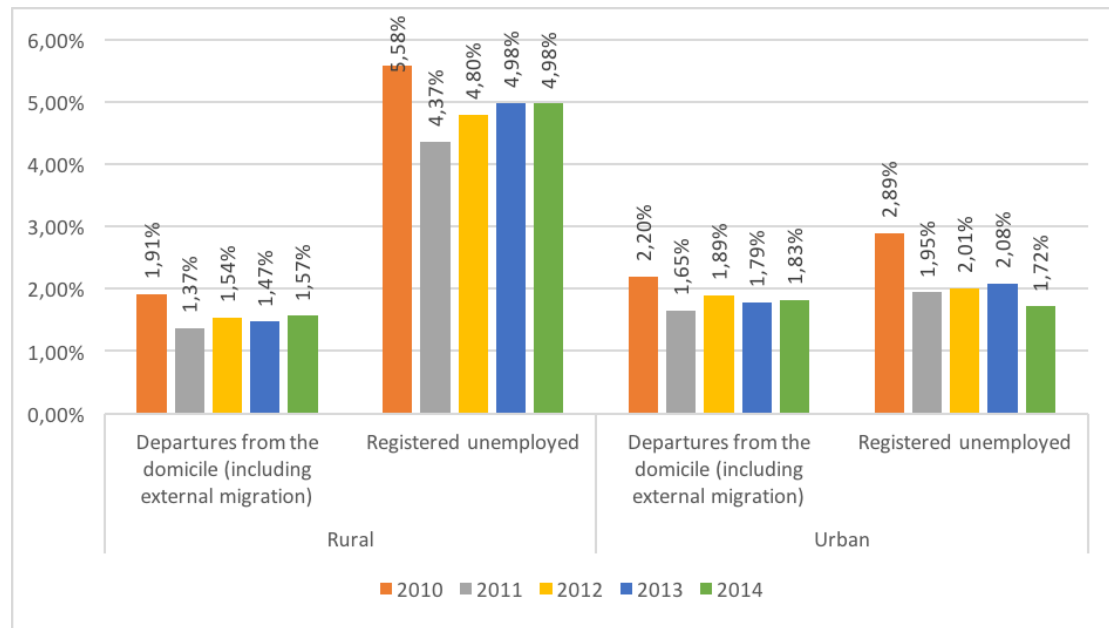


Fig. 3. The evolution of DEPARTRATE and UNEMPRATE variables in rural versus urban area, between 2010-2014

By analysing the two factors, that is, the unemployment rate and the share of persons who changed domicile in the total population, there was a positive correlation of low – intensity between UNEMPRATE variable and DEPARTRATE variable. These results were obtained irrespective of whether both areas of residence were analysed or, whether urban and rural areas were analysed separately, for the period of 2010-2014. This correlation has decreased constantly over the last 5 years, with the urban areas being practically close to 0, which means that the motivations and the causes for the departure of those who changed residence are in a lesser extent explained by searching for work (table 1).

Table 1. Correlations between the UNEMPRATE variable and DEPARTRATE variable

Year	Rural	Urban	Total
2010	0,131**	0,156**	0,130**
2011	0,160**	0,162**	0,151**
2012	0,114**	0,055	0,103**
2013	0,093**	0,067	0,085**
2014	0,087**	0,012	0,078**

** Correlation is significant at the 0.01 level (2-tailed).

Furthermore, by introducing the demographic factor in the analysis, the model becomes stronger and the correlation between DEPARTRATE variable and YOUNGRATE variable is higher and increases over time (table 2). As such, the motivations behind departure from the domicile appear to be less explained by the lack of jobs or by the search for jobs, being increasingly associated with a cohort attitude, a generation trend, and peer group.

Table 2. Correlations between DEPARTRATE variable and YOUNGRATE variable

Year	Rural	Urban	Total
2010	0,145**	0,238**	0,160**
2011	0,175**	0,277**	0,197**
2012	0,186**	0,286**	0,216**
2013	0,208**	0,299**	0,241**
2014	0,257**	0,360**	0,296**

** Correlation is significant at the 0.01 level (2-tailed).

The above illustrated correlations indicate that there is a non-linear relationship between the dependent and the independent variables. The correlation models were replicated by using the logarithmic variables UNEMP, DEPART and YOUNG (table 3 and table 4). The results show that the correlation values between LOG(DEPART) and LOG(UNEMP) have increased significantly (table 3) by comparing with the correlations between non-logarithmic values, but there is a tendency to decrease over time (from 2010 to 2014) in the case of correlations between the logarithmic variables LOG(DEPART) and LOG(UNEMP).

Table 3. Correlations between the LOG(DEPART) and the LOG(UNEMP)

Year	Rural	Urban	Total
2010	0,537**	0,915**	0,727**
2011	0,490**	0,876**	0,670**
2012	0,461**	0,862**	0,649**
2013	0,469**	0,856**	0,651**
2014	0,422**	0,814**	0,587**

** Correlation is significant at the 0.01 level (2-tailed).

The same results can be seen in the case of correlations between LOG(DEPART) and LOG(YOUNG): the correlations values were higher and registered a stable-increasing trend in the last 5 years (table 4).

Table 4. Correlations between the LOG(DEPART) and the LOG(YOUNG)

Year	Rural	Urban	Total
2010	0,821**	0,970**	0,914**
2011	0,841**	0,972**	0,923**
2012	0,834**	0,970**	0,918**
2013	0,845**	0,974**	0,923**
2014	0,850**	0,969**	0,923**

** Correlation is significant at the 0.01 level (2-tailed).

To capture more clearly the improvement of the prediction model of the departures, two Panel Least Squares regression equations were ran. By using PLS, there is the possibility of controlling some factors that cannot be observed or measured, (For e.g. the local structure of the labor market), the possibility of controlling the heterogeneity of individuals and also the opportunity of capturing the common changes that appeared during time. A model including both independent variables (the unemployment and the number of young people) was not built because of collinearity reasons.

In the first equation model (table 5), the R-squared value is 0.434 and the coefficients' values are $c(1)=1,448$ and $c(2)=0,566$, both being significantly different from 0 for $p<0.000$. By summing up, the regression equation is:

$$\text{LOG(DEPART)} = 1.448 + 0.566 * \text{LOG(UNEMP)} + \varepsilon$$

By interpreting this equation, it can be observed that a growth in 1% of unemployed persons determines an increase in 0.566% of persons who changed domicile.

Table 5. The regression equation model $\text{LOG(DEPART)} = C(1) + C(2) * \text{LOG(UNEMP)}$

Dependent Variable: LOG(DEPART)				
Method: Panel Least Squares				
Date: 07/20/16 Time: 11:42				
Sample: 1 15905				
Periods included: 5				
Cross-sections included: 3181				
Total panel (unbalanced) observations: 15887				
LOG(DEPART) =C(1)+C(2)* LOG(UNEMP)				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	1.448239	0.023641	61.25991	0.0000
C(2)	0.566404	0.005123	110.5607	0.0000
R-squared	0.434872	Mean dependent var	4.001765	
Adjusted R-squared	0.434836	S.D. dependent var	0.845983	
S.E. of regression	0.635988	Akaike info criterion	1.932853	
Sum squared resid	6425.182	Schwarz criterion	1.933819	
Log likelihood	-15351.61	Hannan-Quinn criter.	1.933172	
F-statistic	12223.66	Durbin-Watson stat	0.333673	
Prob(F-statistic)	0.000000			

Once introducing the demographic factor, Log(YOUNG), in the model, a significant improvement can be seen, so that R-squared grows to 0.926. The resulting equation is:

$$\text{LOG(DEPART)} = -94.029 + 0.243 * \text{LOG(YOUNG)} + \varepsilon$$

As it can be seen, a growth in the number of people between 14-24 years old determines an increase in 0.243% of the departures' number. This means that almost a quarter of the excess of young people migrates.

Table 6. The regression equation model $\text{LOG}(\text{DEPART}) = C(1) + C(2) * \text{LOG}(\text{YOUNG})$

Dependent Variable: LOG(DEPART)				
Method: Panel Least Squares				
Date: 07/21/16 Time: 07:44				
Sample: 1 15905				
Periods included: 5				
Cross-sections included: 3181				
Total panel (balanced) observations: 15905				
LOG(DEPART) =C(1)+C(2)* LOG(YOUNG)				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-94.02868	2.498779	-37.62985	0.0000
C(2)	0.242706	0.000545	445.6503	0.0000
R-squared	0.925863	Mean dependent var	122.7647	
Adjusted R-squared	0.925858	S.D. dependent var	1135.200	
S.E. of regression	309.1040	Akaike info criterion	14.30536	
Sum squared resid	1.52E+09	Schwarz criterion	14.30632	
Log likelihood	-113761.4	Hannan-Quinn criter.	14.30568	
F-statistic	198604.2	Durbin-Watson stat	0.295058	
Prob(F-statistic)	0.000000			

4. CONCLUSIONS

If in the first period, that is, the one before the economic crisis, the biggest motivation of the external migration was the big rate of unemployment, after the economic crisis, the unemployment had decreased and got into being stable, at an inferior level from the one of the first decade of the 20's. This led to the fact that unemployment was not the first cause of migration, at least for some of the migrant categories.

However, once returning home, even temporarily, the first migrants, having an economic situation superior to the one that they had before they left, became persons of interest and role models for the young people. So, even if the perspective of the Romanian lifestyle has improved, the temptation of leaving for a foreign country persisted, this time being motivated by other things.

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