

THE COMMON AGRICULTURAL POLICY AND EMPLOYMENT OPPORTUNITIES IN ROMANIAN RURAL AREAS: THE ROLE OF AGRITOURISM

NICOLA GALLUZZO

Association of Geographical and Economic Studies of Rural Areas (ASGEAR) Rieti, Italy

Abstract

Galluzzo, N., 2017. The Common Agricultural Policy and employment opportunities in Romanian rural areas: the role of agritourism. *Bulg. J. Agric. Sci.*, 23 (1): 14–21

In Romanian countryside there has been since the early 1990s a significant increase of emigration with negative impacts on the rural areas. After the collapse of communist regime in 1989, lots of young people emigrated and in average every year more than 12 000 people left definitely Romania. The purpose of this study was to assess the role of financial subsidies allocated by the first and second pillar of the Common Agricultural Policy in implementing some employment opportunities in the countryside from 2007 to 2013 by a quantitative approach based on the multiple regression model and the growth of agritourism using payments disbursed by the CAP. Findings have pointed out as financial subsidies allocated by the second pillar of the Common Agricultural Policy are directly correlated to the employment opportunities in Romanian countryside. In particular, agritourism has been one of the most important activity which has benefited significantly of financial subsidies allocated by the CAP. For the future it is important to implement other payments and aids allocated towards Less Favoured Areas in order to lessen the rural emigration from the Romanian countryside.

Key words: rural development; multiple regression model; agritourism

Introduction

In all European countries there has been an intense rural out-emigration from the countryside towards the urban space making worse general living conditions of population in the rural space (Kasimis, 2010; Kasimis et al., 2003). However, recently many citizens are moving from urban space to rural territories seeking for the best job opportunities in touristic activities such as agritourism and rural tourism (Paniagua, 2002) and also in other dematerialized work opportunities in a perspective of multifunctionality and rural socio-economic protection (Van Huylenbroeck et al., 2007; Gosnell and Abrams, 2011). According to these authors, the European rural space is generating a kaleidoscopic and effervescent fabric for innovation and job opportunities strengthening the socio-economic development by a contrasting action towards a declining rural economy and rural socio-economic marginalization.

The European Union throughout the Common Agricultural Policy (CAP) has financially supported several initiatives to an integrated and bottom-up socio-economic development in rural areas by the L.e.a.d.e.r. initiative which has implied by its own bottom-up approach a revitalization of rural areas and new job opportunities such as agritourism, rural tourism and small craftmade enterprises (Galluzzo, 2015; 2014; 2012).

In literature several studies have investigated the nexus between financial subsidies allocated by the CAP and employment opportunities in rural areas even if findings have had a divergent effect in different member states of the European Union. In fact, in 2015 Dupraz and Latruffe argued as subsidies allocated by the CAP have had a different impact in function of the typology of subsidies allocated by public administrations. According to these authors, decoupled payments have reduced labour opportunities in farms instead

compensation payments towards stayed behind rural areas have increased job opportunities in some European countries. The European Parliament in 2016 has assessed as unfavourable economic conditions have stimulated more entrepreneurial and job initiatives in National Rural Development Plan (NRDP) in order to boost job creation in the rural space. Effects of financial subsidies allocated by Romanian Rural Development Plan have been positive in stimulating job opportunities in rural areas. In fact, over the time 2008-2015 in Romania has been created directly and indirectly more than 70.000 work opportunities co-financed partially both by the L.e.a.d.e.r. initiative and also by the NRDP. The National Rural Development Plan and the L.e.a.d.e.r. initiative have been the main capstone in generating work opportunities and in strengthening socio-economic rural development in the Romanian countryside.

Afterward the collapse of Communist regime Romanian agriculture has become a buffer sector able to adsorb workforce (Dachin, 2008; Vincze and Kerekes, 2009). Many Romanian farms due to the scarcity in utilized agrarian surface and a poor level of farmer's income are classified as semi subsistence enterprises, scattered in lots of small rural villages, with the consequence to foster the emigration and to stimulate non farm income opportunities (Copus et al., 2006) by a diversification in farm's activities.

As a consequence of economic crises since 2008 lots of Romanian people emigrated from the countryside are come back in rural areas which have partially solved unemployment problems (Vincze and Kerekes, 2009). These two authors argued as in the rural villages significant has been the process of land concentration that has had a nexus in arising of non farm activities such as services towards rural population and agritourism financed by the European Union. In the seven year time 2007-2013 targets of Romanian NRDP have partially reduced by new employment opportunities and a diversification in agrarian enterprises imbalances among rural areas, which are characterized by aging issues, poor productivity of farms (Dachin, 2008) and low level of infrastructures. According to this author, Romanian rural areas and their level of poverty and emigration are correlated to an unequal distribution of rural population among counties, to a poor level of infrastructures and to a low skilled workforce even if a different allocation of European funds disbursed during the NRDP 2007-2013 by axes 1 and 3 have generated an economic growth in the countryside (Alexandri and Luca, 2008). In order to reduce rural out emigration and in implementing the level of human capital and rural labour force activities it is pivotal to stimulate investments in education, professional skills and in other intangible goods (Tocco et al., 2012). Stockdale in 2006 and in 2010 argued as the level

of human capital is one of the main constraints in generating new job opportunities by an endogenous development process; hence, a process of counter-urbanization in the countryside is a positive factor in the rural areas gentrification with negative impacts on the socio-economic growth in rural spaces (Stockdale, 2010).

Since the early 1990s because of international agreements aimed at reducing direct payments, the European Union has addressed its own efforts towards a diversification in farmer's activities due to the transition from a productivist model, based on the production of ag-commodities, to a post productivist one (Galluzzo, 2015; 2014; Ilbery, 1998). The Common Agricultural Policy has had some positive and direct impacts to farmers, even if not always predominately focused in generating job opportunities. A new concept of rurality is pivotal in the growth process of socio-economic development in the European countryside and in other activities deeply rooted on the rural space able to reduce rural emigration (Gray, 2000; Galluzzo, 2013; 2014; Alexandri and Luca, 2008).

Aims of the Research

In new comers member states of the European Union, rural areas have suffered from an intense phenomenon of rural out-emigration and a growth of off-farm activities which have partially lessened social unbalances and economic problems in the countryside by a buffer effect towards under and unemployed people (Kasimis, 2010; Vincze and Kerekes, 2009).

The purpose of this paper was to assess the role of financial subsidies allocated by the first and second pillar of the CAP in implementing some employment opportunities in the Romanian countryside over 7 year time (2007-2013) using the Farm Accountancy Data Network (FADN) dataset published by the European Union and other statistical data published by the Romanian National of Statistics. The further stage has been addressed to assess the role of payments allocated by the Common Agricultural Policy in stimulating the growth of agritourism in the Romanian countryside using a quantitative approach.

Theoretically, it is harsh to define the role of Common Agricultural Policy in halting the rural emigration from the countryside analysing the impact of the financial subsidies allocated in favour of farmers (Olper et al., 2012) and in generating job opportunities in the rural space by the agritourism as investigated in Europe and in other nations by many authors (Galluzzo, 2016; Otepka et al., 2009; Hegarty and Przeborska, 2005; Pilar et al., 2012; Gopal et al., 2008; Sharpley, 2002; Sonnino, 2004).

According to Olper et al. in 2012, a negative impact has been assessed between the variable rural emigration and

payments allocated by the CAP aimed at contrasting the dichotomy rural-urban spaces (Gray, 2000). Olper et al. (2012) have investigated the main relationships in some European countries between financial subsidies allocated by the Common Agricultural Policy and the impact of these indirect payments on the labour opportunities in the primary sector; main findings have pointed out significative differences among countries (Tocco et al., 2014a; Tocco et al., 2014b; Dupraz and Latruffe, 2015) due to level of infrastructures, socio-economic context, regional disparities and education-skill requirements (Vincze and Kerekes, 2009; Dachin, 2008).

Methodology

Using a quantitative approach and different source of data from 2007 to 2013 published by the European Union in the FADN dataset and annual results of demographic statistics published by the National Institute of Statistics in Romania (INSSE) in TEMPO on line time series, the paper has estimated by a multiple regression model main correlations among job opportunities in rural areas and financial subsidies allocated by the CAP both by the first and also by the second pillar. Furthermore the quantitative method has estimated if payments disbursed by the Common Agricultural Policy have stimulated the agritourism which is a dummy variable of job opportunities in the countryside.

In this study it has used a multiple regression model, estimating parameters by the Ordinary Least Square throughout the open source software GRETL 1.8.6. In its algebraic form of matrix, the multiple regression models can be so expressed (Verbeek, 2006; Gujarati, 2011):

$$y = X\beta + \varepsilon, \quad (1)$$

where y is the dependent variable and ε is the statistical error but both are vectors with n -dimensions; X is a matrix of independent variables which has a dimension $n \times k$.

In analytical terms, the model of multiple regression in its general formulation can be written in this way (Asteriou and Hall, 2011; Baltagi, 2011; Verbeek, 2006):

$$y = \alpha_0 + \alpha x_1 + \beta x_2 + \gamma x_3 + \delta x_4 + \varepsilon_{jt} \quad (2)$$

y is the dependent variable job opportunities in Romanian countryside or number of Romanian agritourisms, α_0 – constant term; x_1, x_2, x_3, x_4 – independent variables such as total subsidies, total subsidies on crops, total subsidies on livestock, payments for Less Favored Areas (LFA), Total support for rural development, Decoupled payments; $\alpha, \beta, \gamma, \delta$ estimated parameters of the model; ε_{jt} term of statistic error.

Basis assumptions, to use a multiple regression model, are (Asteriou and Hall, 2011; Baltagi, 2011):

1) statistic error u_i has conditional average zero that is $E(u_i|X_i) = 0$;

2) $(X_i, Y_i), i = 1, \dots, n$ are extracted as distributed independently and identically from their combined distribution;

3) X_i, u_i have no fourth moment equal to zero.

There is no correlation among regressors and random noise if the value between β expected and β estimated is the same; in order to analyze if there is also heteroscedasticity on standard errors in the multiple regression model, it has used White's test on the error terms (Verbeek, 2006).

Results and Discussion

After the collapse of Communist regime, there has been a significant emigration from Romanian rural areas.

Addressing the attention on the permanent emigration in all Romanian counties, findings have pointed out an unstable phenomenon and particularly lots of people emigrated during the economic recession in 2007–2008 (Figure 1).

Every year one third of people under 35 years emigrates definitely from Romanian nation and in particular the class of young people between 25–29 years have surpassed in terms of emigration flow the people with an age between 30–34 years old.

North-east and west Romanian regions have suffered a more intense phenomenon of permanent emigration than the others even if the Bucharest and Ilfov regions have been more sensitive of the economic crises highlighting the highest levels of out-emigration in correspondence of economic recession (Figure 2).

Workforce in the primary sector has highlighted from 1992 to 2011 a sharply decrease even if findings have corroborated a buffer effect of agriculture in reducing unemployment as argued by other authors (Figure 3).

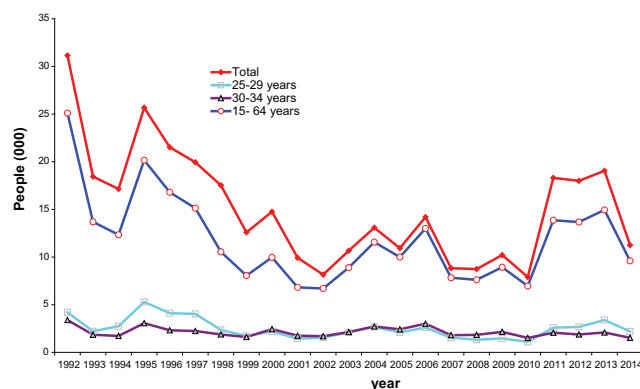


Fig. 1. Permanent emigration from Romanian countryside in function of different class of age
(Source: our elaboration on data INSEE published on www.insse.ro/cms/en)

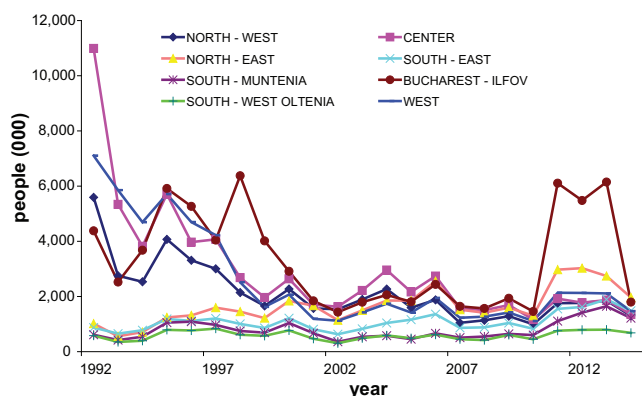


Fig. 2. Permanent emigration from Romanian regions (Source: our elaboration on data INSEE published on www.insse.ro/cms/en)

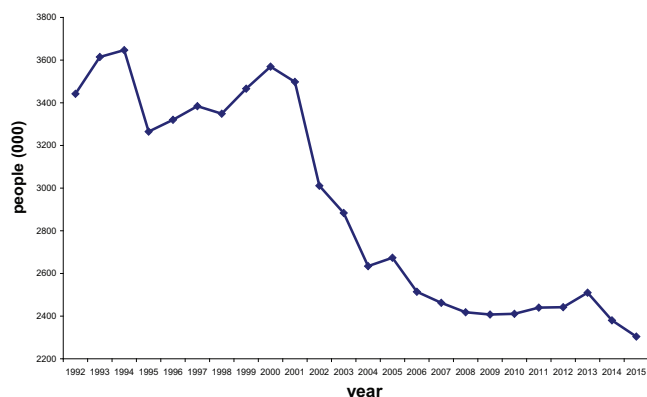


Fig. 3. Evolution of employment in the primary sector (Source: our elaboration on data INSEE published on www.insse.ro/cms/en)

In 2014 the Romanian counties of Olt, Dolj, Mehedinti, in the south and Iasi in the west have suffered of a more intense and significant process of permanent emigration with the consequence of almost 1,000 people have definitely left their own nation (Figure 4).

Comparing the value of permanent emigration in 2014 on the value 1992 in all Romanian counties findings have highlighted as in Olt there has been the highest level of emigration six times higher than all the other counties such as in other counties close to Bulgaria and in the north east (Figure 5).

The highest level of employment in the primary sector has been pointed out in north-west and north east Romanian regions (Figure 6) with a sharply decrease in all Romanian regions.

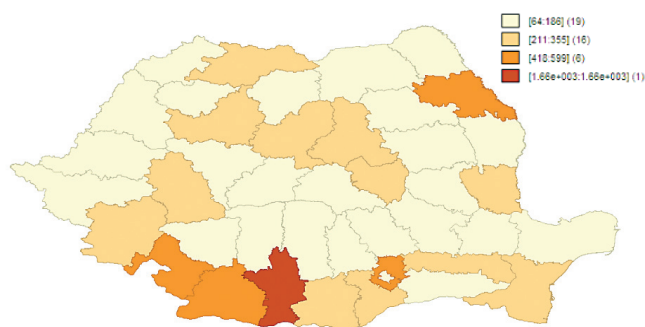


Fig. 4. Clusters of permanent emigration in Romanian counties year 2014 (Source: our elaboration on data INSEE published on www.insse.ro/cms/en)

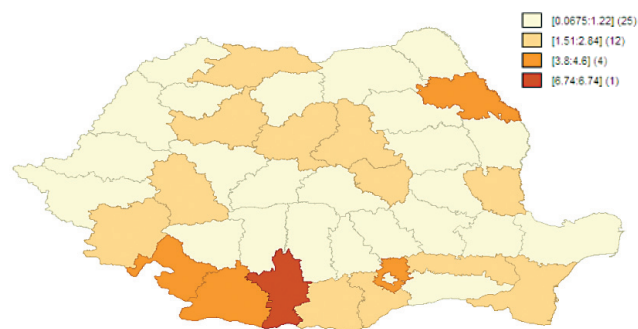


Fig. 5. Clusters of permanent emigration in Romanian counties comparing data 2014 on data 1992 (Source: our elaboration on data INSEE published on www.insse.ro/cms/en)

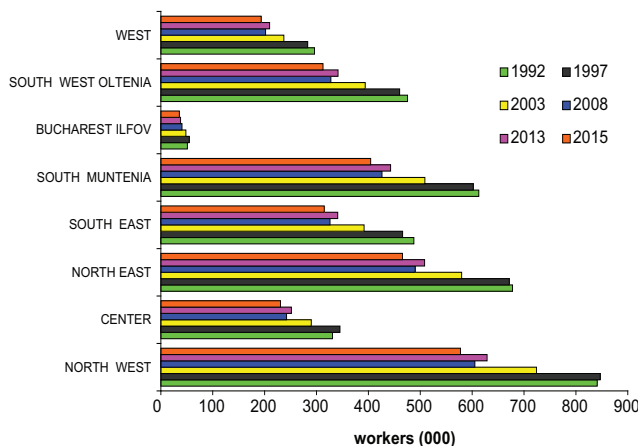


Fig. 6. Evolution of workers in the primary sector in the main Romanian regions (Source: our elaboration on data INSEE published on www.insse.ro/cms/en)

Even if, comparing 2008 and 2013 in many rural areas there has been a growth of agricultural employment and a significant increase of agritourism in the Romanian countryside.

This is due to financial subsidies allocated by the Common Agricultural Policy (Figure 7).

In 2001 there has been the overtaking of employment in the workforce in urban areas than people working in the rural areas (Figure 8); furthermore, in the urban space there has been a more significant growth of employment than in rural areas; this bottleneck has been one of the main reasons in stimulating the rural emigration from the Romanian countryside.

With the purpose of estimating in the time series data published by the National Romanian Institute of Statistics from 1995 to 2015 if there is a nexus between workforces

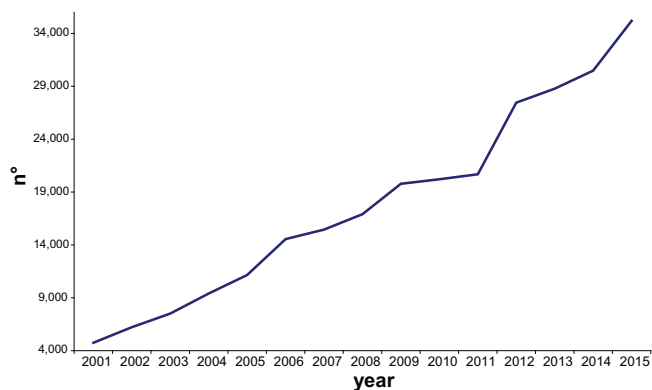


Fig. 7. The growth of agritourism in Romania
(Source: our elaboration on data INSEE published on www.insse.ro/cms/en)

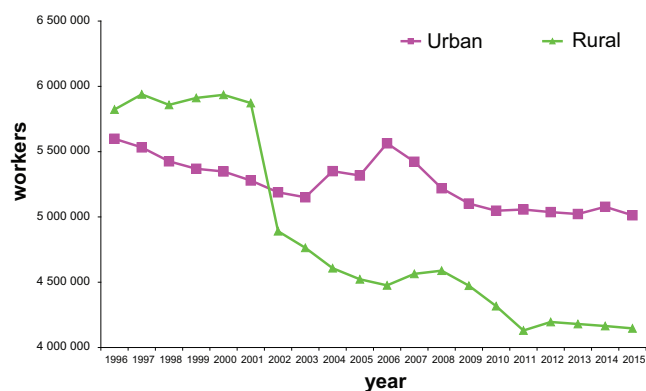


Fig. 8. Employment in Romanian rural and urban areas
(Source: our elaboration on data INSEE published on www.insse.ro/cms/en)

employed in the primary sector and permanent emigration from Romania it has used a simple correlation method of these two variables. Main correlations in all Romanian regions between the variable workforce in the primary sector and permanent emigration have highlighted as there is a direct nexus between people permanently emigrated and workforce employed in the primary sector (Table 1). The poorest regions, which have suffered particularly in the early 1990s a severe and intense process of rural emigration, have highlighted an indirect correlation between emigration and employment in the primary sector. This has corroborated the role in poor areas of agriculture as a buffer factor able to contrast economic crises and emigration.

Table 1

Main correlations in Romanian regions between the variable workforce in the primary sector and permanent emigration (Source: our elaboration on data INSEE published on www.insse.ro/cms/en)

Region	Correlation	Significance
All Romanian regions	0.390	*
North– West	0.647	***
Center	0.643	***
North– East	-0.479	**
South– East	-0.490	*
South– Muntenia	-0.180	n.s.
Bucharest– Ilfov	0.220	n.s.
South – West Oltenia	0.119	n.s.
West	0.538	***

* 5-10%; ** 5%; *** 1%; n.s. not significance

Comparing in all Romanian counties the workforce employed in the primary sector and the permanent emigration in two year time (2014 versus 1992), findings have pointed out as a significant increase of employment in the primary sector even if the permanent emigration is more intense in 16 out of 41 counties. In general in counties where poorer has been the job opportunities in the primary sector more significant has been the phenomenon of permanent emigration (Figure 9).

The quantitative approach using the multiple regression model has highlighted as total subsidies allocated by the Common Agricultural policy correlate indirectly to the workforce in the primary sector instead, financial payments allocated towards stayed behind rural areas have not had any effects in generation job opportunities in Romanian counties (Table 2). Financial subsidies allocated by the first and also by the second pillar of the CAP have pointed out an indirect impact on the growth of job opportunities in Romania instead the direct and indirect payments to crops and livestock

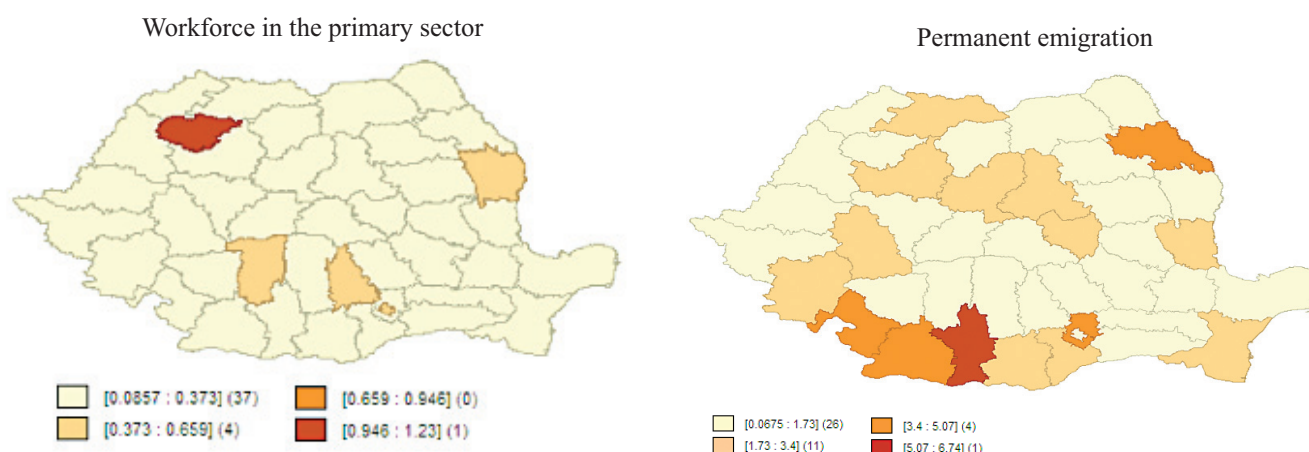


Fig. 9. Clusters of workforce in the primary sector and permanent emigration in Romanian counties comparing data 2014 on data 1992 (Source: our elaboration on data INSEE published on www.insse.ro/cms/en)

Table 2

Main results in the multiple regression model in Romanian regions. Dependent variable workforce in the primary sector

Independent variable	Coefficient	Std. Error	t value	p-value	Significance
Constant	456103	71349.9	6.3925	<0.00001	***
Total subsidies	-428.416	117.61	-3.6427	0.00074	***
Total subsidies on crops	731.174	158.213	4.6215	0.00004	***
Total subsidies on livestock	312.709	120.698	2.5908	0.01311	**
Less Favoured Areas payments	186.672	450.744	0.4141	0.68088	n.s.
Total support for rural development	341.338	99.1622	3.4422	0.00132	***
Decoupled payments	560.485	123.347	4.5440	0.00005	***

* 10%; ** 5%; *** 1%; n.s. not significance

(Source: our elaboration on data INSEE published on www.insse.ro/cms/en and ec.europa.eu/agriculture/rca/database/database_en.cfm)

Table 3

Main results in the multiple regression model in Romanian regions. Dependent variable farms with agritourism

Independent variable	Coefficient	Std. Error	t value	p-value	Significance
Constant	1864.64	413.612	4.5082	0.00004	***
Total subsidies	-2.8874	1.16336	-2.4820	0.01654	**
Total subsidies on crops	2.33201	1.17733	1.9808	0.05325	*
Total subsidies on livestock	3.89027	1.21889	3.1917	0.00247	***
Less Favoured Areas payments	37.4494	6.97677	5.3677	<0.00001	***
Total support for rural development	2.4186	1.15903	2.0867	0.04214	**
Decoupled payments	3.17288	1.27443	2.4897	0.01623	**

* 10%; ** 5%; *** 1%;

(Source: our elaboration on data INSEE published on www.insse.ro/cms/en and ec.europa.eu/agriculture/rca/database/database_en.cfm)

disbursed by the first pillar have acted directly and positively on the job opportunities in the primary sector. Furthermore, aids disbursed in terms of supports for rural development by the CAP have acted directly on the level of employment in the primary sector.

The multiple regression model has assessed an indirect role of total subsidies allocated by the first and second pillar of the CAP towards the growth of agritourism in all Romanian counties (Table 3). Financial payments in favour of stayed behind rural areas and also direct support for rural

development allocated by the second pillar of the CAP have had positive and direct effects on the growth of agritourism in Romania. Focusing the attention on the function of subsidies allocated by the first pillar of the CAP findings have highlighted a more significant impact of subsidies allocated on livestock instead of payments allocated to crops.

Conclusion

Financial subsidies allocated by the European Union by the second pillar of the CAP and particularly in favour of stayed behind rural areas have been positively correlated to the growth of agritourism which is a dummy variable of the growth of employment opportunity in the Romanian countryside as investigated and argued in literature by many authors (Olper et al., 2012; Dupraz and Latruffe, 2015).

In general, the financial subsidies allocated by the CAP in the II pillar have had a positive action in halting rural emigration and in generating new job opportunities by a new kind of younger farmers with high level of skills. Nevertheless, the bottlenecks in implementing work opportunities in the countryside able to lessen the rural emigration are mainly two. The first is correlated to the poor agrarian surface of Romanian farms scattered in many rural villages where poor is the level of infrastructures. The second downside is correlated to the level of skill and knowledge of agrarian entrepreneurs even if there has been a growth of young farmers who, using the financial subsidies allocated over the time 2007-2013 by the axis I of the NRDP, have taken over the enterprises and using new technologies and investments have implemented the level of technical and economic efficiency in farms.

Summing up, the payments towards less favoured rural areas have been correlated positively and directly to the development of agritourism in Romanian countryside over the time of investigation; by contrast, financial subsidies allocated by the first pillar of the CAP have had a lower effect on the growth of a diversification in farmer's activities in the countryside such as the agritourism than the financial subsidies allocated by the second pillar, which has been more efficient in strengthening farmer's diversification by the agritourism.

References

- Alexandri, C. and L. Luca, 2008. Romania and CAP reform. *Agricultural Economics and Rural Development*, 3 (4): 161-180.
- Asteriou, D. and S. G. Hall, 2011. Applied Econometrics. Palgrave Macmillan, New York.
- Baltagi, B. H., 2011. Econometrics. Springer-Verlag, Berlin, Heidelberg.
- Copus, A. K., C. Hall, A. Barnes, G. Dalton, P. Cook, P. Weingarten and G. Eiden, 2006. Study on employment in rural areas. Study on Employment in Rural Areas. [http://researchrepository.napier.ac.uk/2865/1/sera_report\[1\]_Rural_EU27_2006.pdf](http://researchrepository.napier.ac.uk/2865/1/sera_report[1]_Rural_EU27_2006.pdf) (viewed 30 April 2016)
- Dachin, A., 2008. Rural development-a basic condition for narrowing regional disparities in Romania. *Romanian Journal of Regional Science*, 2 (2): 106-117.
- Dupraz, P. and L. Latruffe, 2015. Trends in family labour, hired labour and contract work on French field crop farms: The role of the Common Agricultural Policy. *Food Policy*, 51: 104-118.
- Galluzzo, N., 2012. Multifunctionality in agriculture and development of cooperative credit banks: a comparative analysis in Italy and Ireland. *International Journal of Cooperative Studies*, 1 (1): 1-8.
- Galluzzo, N., 2013. L'iniziativa comunitaria LEADER in Irlanda e Italia. Analisi delle interazioni sociali in due gruppi di azione locale. The Initiative L.e.a.d.e.r. in Ireland and in Italy. An Analysis of Social Interactions in Two Local Action Groups: *Bollettino della Società Geografica*, Serie XIII, 6: 637-654.
- Galluzzo, N., 2014. The evolution of Italian farms and the role of subsidies paid by the European Union for rural development. *Romanian Review of Regional Studies*, 10 (1): 79-88.
- Galluzzo, N., 2015. Role and effect of agroforestry subsidies allocated By the Common Agricultural Policy in Italian Farms. *International Journal of Food and Agricultural Economics*, 3 (1):19-31.
- Galluzzo, N., 2016. Role of subsidies allocated by the second pillar of the Common Agricultural Policy and diversification in Romanian farms through agritourism. *Romanian Review of Regional Studies*, 12 (1), 65-78.
- Gopal, R., M. S. Varma and M. R. Gopinathan, 2008. Rural tourism development: constraints and possibilities with a special reference to Agri tourism. In: Conference on Tourism in India. Challenges Ahead, 15-17 May 2008: *IIMK*, 15: 512-523.
- Gosnell, H. and J. Abrams, 2011. Amenity migration: diverse conceptualizations of drivers, socioeconomic dimensions, and emerging challenges. *GeoJournal*, 76 (4): 303-322.
- Gray, J., 2000. The Common Agricultural Policy and the re-invention of the rural in the European Community. *Sociologia ruralis*, 40 (1): 30-52.
- Gujarati, D., 2011. Econometrics by example. Palgrave Macmillan, New York.
- Hegarty, C. and L. Przeborska, 2005. Rural and agri-tourism as a tool for reorganising rural areas in old and new member states. A comparison study of Ireland and Poland. *International Journal of Tourism Research*, 7 (2): 63-77.
- Ilbery, B. W. (ed), 1998. The Geography of Rural Change. Pearson Education Limited, Harlow.
- Kasimis, C., 2010. Demographic Trends in rural Europe and international migration to rural areas. *Agriregionieuropa*, 21 (6): 1-6.
- Kasimis, C., A. G. Papadopoulos and E. Zacoboulou, 2003. Migrants in rural Greece. *Sociologia Ruralis*, 43 (2): 167-184.

- Olper, A., V. Raimondi, D. Cavicchioli and M. Vigani**, 2012. Does the common agricultural policy reduce farm labour migration? Panel data analysis across EU regions. *Factor Markets Working Paper*, No28, July 2012.
- Otepka, P., M. Habán and P. Goldová**, 2009. State of rural development and agritourism in chosen regions of Slovakia and Great Britain—comparison and evaluation. *Scientific Papers Management, Economic Engineering in Agriculture and Rural Development*, **9** (3): 153-156.
- Paniagua, A.**, 2002. Urban-rural migration, tourism entrepreneurs and rural restructuring in Spain. *Tourism Geographies*, **4** (4): 349-371.
- Pilar, L., J. Pokorná, T. Balcarová, and J. Hron**, 2012. Factors determining the entry of agricultural farms into agritourism. *AGRIS on-line Papers in Economics and Informatics*, **4** (4): 59-65.
- Sharpley, R.**, 2002. Rural tourism and the challenge of tourism diversification: the case of Cyprus. *Tourism management*, **23** (3): 233-244.
- Sonnino, R.**, 2004. For a 'Piece of Bread'? Interpreting sustainable development through agritourism in Southern Tuscany. *Sociologia Ruralis*, **44** (3): 285-300.
- Stockdale, A.**, 2006. Migration: Pre-requisite for rural economic regeneration? *Journal of Rural Studies*, **22** (3): 354-366.
- Stockdale, A.**, 2010. The diverse geographies of rural gentrification in Scotland. *Journal of Rural Studies*, **26** (1): 31-40.
- Tocco, B., S. Davidova and A. Bailey**, 2012. Key issues in agricultural labour markets: A review of major studies and project reports on agriculture and rural labour markets. Centre for European Policy Studies. *Factor Markets Working Papers*, 20.
- Tocco, B., S. Davidova and A. Bailey**, 2014a. The impact of CAP payments on the exodus of labour from agriculture in selected EU member states. In: 142nd EAAE Seminar, May 29-30, Budapest, Hungary.
- Tocco, B., S. Davidova and A. Bailey**, 2014b. Labour adjustments in agriculture: evidence from Romania. *Studies in Agricultural Economics*, **116** (2): 67-73.
- Van Huylenbroeck, G., V. Vandermeulen, E. Mettepenningen and A. Verspecht**, 2007. Multifunctionality of agriculture: a review of definitions, evidence and instruments. *Living Reviews in Landscape Research*, **1** (3): 1-43.
- Verbeek, M.**, 2006. Econometria. Econometrics, Zanichelli, Bologna. Italy.
- Vincze, M. and K., Kerekes**, 2009. Impact of CAP's pillars on Romanian rural employment. In: Proceedings of the Aspects and Visions of Applied Economics and Informatics Conference, Debrecen.
http://portal.agr.unideb.hu/media/AVA_VMKKfinal_APSTRACT_format_9642.pdf (Viewed 30 October 2016)

Received January, 9, 2017; accepted for printing January, 13, 2017