

The Influence of Demographic Aging on the Potential Labour Market Supply

Ibolya KURKÓ¹

¹ Babeş-Bolyai University, Faculty of Geography, Cluj-Napoca, ROMANIA

E-mail: ibolya.kurko@geografie.ubbcluj.ro

Keywords: *demographic aging, age-structure, working-age population, labour market, territorial differences*

ABSTRACT

In terms of evolution of the different economic structures and processes, the most important demographic category is the active population - the potential labour supply of society. Its quantity and quality (size, structure, level of education and training) has a significant impact on the economic, social and cultural development of a country as well as a major influence on the evolution of the gross domestic product. With the transition from a planned to a market economy, the post-communist socio-economic changes have left their mark on the evolution of employment, both in terms of structure, quality and volume. The most important factor that marks the transformation and change in the structure of employment is the process of demographic aging. Considering these aspects I will analyze the evolution of the age-structure, working-age population and the process of demographic aging in order to get a comprehensive image on the present situation of the Romanian labour market supply.

1. INTRODUCTION

After the abolishment of the communist regime one of the most severe demographic problems - in addition to the decrease in birth rates and the rising mortality - has been the aging of the population. The decrease of fertility for more than 15 years, worsening living conditions illustrated by increasing mortality rates, have had a negative impact on the development of natural growth. This last aspect has influenced the age structure of the population by increasing the proportion of the elderly at the expense of the share of young people. From this point of view 2000 may be regarded as a demographic turning point, because for the first time in Romania the proportion of elderly people exceeds that of young persons. Thus, at first being purely a demographic issue, demographic aging has evolved into an increasingly difficult economic and social problem, because neither scientific research nor demographic and economic policies have managed to fully understand the progress and disadvantages

brought about by a growing elderly population [1]. My hypothesis is that the decrease of the younger population (15-24 years) and the increase of the older one (above 45 years) will affect on the long term the potential offer of the labour market. However, as the active population becomes unbalanced it will endanger the social welfare system, too (health care, pension, social security).

2. MATERIAL AND METHOD

The analysis was based on the existing research in this field and the existing territorial statistical data obtained from the National Statistics Institute of Romania, including both the Tempo Online website as well as the 2002 Census. The last Census allows us to use data from settlement level which exactly corresponds to the EU NUTS 5 level, in our case the level of the 2,857 communes. The used methodology is mainly related to statistical data processing and interpretation (% change, average

values, standard deviation – as indicators), but I would also like to highlight a series of indices used for expressing territorial disparities, homogeneity or polarization. The first one, the relative range compares the difference between the minimum and maximum values to the average value of the data series, thus being suitable for comparing data series with a different number of values [2].

$$Q = \frac{x_{\max} - x_{\min}}{\bar{x}}$$

$$x_{\max} = x_i \text{ maximum}$$

$$x_{\min} = x_i \text{ minimum}$$

$$\bar{x} = x_i \text{ average}$$

The weighted relative standard deviation gives us the dispersion of the data series compared to its weighted average. Also, the weighted relative standard deviation expresses the dispersion in relation to the average value of the data series.

$$V = 100 \left[\frac{1}{\bar{y}} \sqrt{\frac{\sum (y_i - \bar{y})^2 f_i}{\sum f_i}} \right]$$

$$y_i = \frac{x_i}{f_i} \text{ value of the specific index in the „i” territory;}$$

$$\bar{y} = y_i \text{ weighted average.}$$

3. RESULTS AND DISCUSSION

The main findings can be grouped into 2 main categories: the evolution of the age-structure and the working-age population, as well as the process of demographic aging.

3.1. The evolution of age-structure and the process of demographic aging

Some authors consider that the main reason behind an aging population is the decline of birth rate and not so much the increase of the average life expectancy. The fact is that the decrease in mortality and the increase of life expectancy affects all ages, leading to a rise in the numbers of the elderly, while the decrease of birth rates on the long-term also contributes to the increasing rate of older people by continuously reducing the younger generations [3]. Thus, the two major forces - declining birth rates and increasing life expectancy - interacting with each other have brought along dramatic changes in the size and age structure of population. In Romania, as in other EU countries, the aging of the population is accepted

as a fact, a process that is constantly growing. Due to decreasing birth rates the rate of young people under 15 is still in decline, totalling a loss of 8% since the change of the communist regime, going from 23.6% to 15.2%. As a result, the number of the adult population fell by 40,000 people, while their share has increased by 4.5%, very much like in the case of the elderly population (over 60 years), going from 15.7% (1990) to 19.6% until the year 2008. It is worth noticing, that this phenomenon - namely the fact that the number and weight of the elderly exceeds that of the young population - is happening for the first time in last four decades. Thus, fundamental changes have taken place in the evolution of the Romanian population, not only from a quantitative point of view (decreasing number of the population), but also from a qualitative one, by reducing the rate of the young population and increasing that of the elderly. It is a general practice worldwide to consider a population young if the proportion of the elderly people less than 12%, a rate higher than this corresponding to a demographically aging population [4]. In Romania, this rate is almost double, which reinforces the fact that we are living in an aging society, this process being in a fairly advanced stage. This is emphasized also by the fact that the share of age group between 45 and 59 years has increased over the past 18 years by almost 3% (from 17.2% to 19.9%) and is expected to grow further during the next years, but by entering the older age groups it will further contribute to the aging of the Romanian society. Moreover, in all three age groups above 60 years (between 60 and 74, between 75 and 84 years and over 85) we can see a substantial increase of more than 2%, the only exception being the age group between 75 and 84, where the rate of growth is relatively small, of barely 1%. This is the generation that had to face the two World Wars, when the birth rate has been characterized by a relatively high deficit and the lives lost at war have severely affected the evolution of the population, not to mention the two years of drought in 1946-1947.

The only age group that shows a slight increase is the one between 15-59 years. In fact, their number has gone down drastically between 1990-1992, by almost 220,000 as a consequence of the newly open borders and the increased international migration, affecting mostly the adult population. We must also keep in mind that in this age group includes the 1967 cohorte, when the birth rate was almost double than today due to the abortion banned.

If we analyze the age structure of populations between urban and rural areas, we can conclude that the evolution of the three major age groups has mostly been determined by economic factors. Even if in the urban environment the birth-rate is lower than in rural areas, the younger population here represents a relatively high rate of over 50%. The cause for this phenomenon lies in the internal migration,

represented by a decade long rural-urban migration, which has led to the decrease and the advanced aging of the rural population, while in the cities this process has been countered by those younger groups which - taking advantage of economic, social and cultural benefits offered by cities – have settled in the major industrial centres. Currently, the change in direction of the internal migration will not lead to the flourishing of the rural population because the groups

which have returned to their native places are dominated by the first wave of migrants (now elderly people), which will have a significant negative effect the demographic aging of the rural population. In addition, the people involved in international migration and emigration, either for educational purposes or for work, will leave the group of the young generation, further accelerating the process of demographic aging.

Table 1. The evolution of the age structure in Romania.

Year	0-14 years		15-59 years		above 60	
	Number	(%)	Number	(%)	Number	(%)
1990	5,468,676	23.6	14,105,078	60.8	3,632,966	15.7
1995	4,644,441	20.5	14,075,541	62.1	3,960,969	17.5
2000	4,098,080	18.3	14,117,075	62.9	4,220,050	18.8
2001	3,985,623	17.8	14,190,686	63.3	4,232,084	18.9
2002	3,779,298	17.3	13,832,084	63.5	4,183,411	19.2
2003	3,632,680	16.7	13,925,857	64.1	4,175,019	19.2
2004	3,500,149	16.1	13,998,418	64.6	4,174,761	19.3
2005	3,372,705	15.6	14,086,384	65.1	4,276,619	19.3
2006	3,334,072	15.4	14,084,985	65.3	4,165,308	19.3
2007	3,288,439	15.3	14,065,018	65.3	4,184,106	19.4
2008	3,265,476	15.2	14,034,289	65.3	4,204,677	19.6

Source: Tempo Online, 1990-2008, INS, Bucharest.

Related to demographic aging, the analysis of this indicator reveals the increase of the phenomenon, because in the early 1990's its value was 664 (i.e. 664 elderly people per 1000 youngsters under 15 years), and in the year 2000 it had already exceeded the threshold of 1000 and it continued to rise to the present value of 1288. It is highly important to analyze this indicator in an urban-rural context, because the differences are quite significant. While in urban areas the value is only 1196, in rural areas it even reaches 1376. As I had already mentioned, the evolution of this index is closely related to the migration process, because just a few decades ago the Romanian society was considered a young population among its Eastern European neighbours, but after the change of the communist regime, demographic aging has become quite a serious issue. As I have pointed out, this phenomenon is more obvious in rural areas, because not only in the socialist years but also in the present, migration mainly affects the young population, the consequences being the gradual decrease of the birth rates and the continuous rise of mortality.

In a regional perspective, demographic aging shows relatively high values in the Bucharest-Ilfov Region (1548) and South-Muntenia (1457), the „youngest” region being the North-East (1037), a region characterized by a high fertility rate and a relatively high proportion of young people. In the case of Bucharest, the high value of the index is first of all determined by the relatively low rate of young people,

which remains more than 3% below the national average. This phenomenon is typical for developed areas, where economic and social influences contribute to the gradual decrease in fertility. In the more urbanized areas of the country the reproductive behaviour of young couples is gradually changing, the tendency to have fewer children and to give birth to an older age is becoming a widespread tendency, which subsequently alters the balance between the age groups of the population. A reverse tendency can be found in the South Region, where the rise of the aging index's value is the result of the high rate of elderly people (21.6%) and that of the rural population. *This can be explained by* the low level of development in this region, the less diversified economic structure, which does not entail the positive effects of internal migration, so there are no attractive factors for foreign investors which could contribute to an economic and demographic revival. In fact, in this region there is a north-south duality, the northern counties (Argeş, Prahova, Dâmboviţa) being the more developed ones compared to the south, which is actually the second pole of poverty in Romania.

Figure 1 shows that demographic aging characterizes mostly the population from the southern part of the country, the North-South duality being reflected here as well.

Territorial differences in demographic aging places Teleorman County on the first place, whereas the aging index has already reached the value of 2093

and the proportion of elderly people (over 60 years) is of 27.9%. We can find Giurgiu County in this category as well, with an aging index of 1614 and a 24.4% share of elderly people. A number of counties like Buzău, the eastern part of Ialomița and Călărași counties, the southern part of Argeș and Vâlcea counties, Dolj and Mehedinți counties also fall in the group of areas characterized by an advanced process of demographical aging where the proportion of elderly people exceeds 20% and the aging index has a value of more than 1400. The groups of counties with a high aging index continues further westwards, covering most of the Apuseni Mountains including counties like Hunedoara, Cluj, the eastern part of Sălaj County, Bihor and Arad. Unfortunately, the county values hide the grave situation of rural areas. While in 1992 only 44 settlements had a proportion of elderly population between 40-50% and an aging index of over 3000, up to 2002 their number has increased to 120. Thus, the future of some villages is at stake considering that more than 50% of residents are aged over 60 years. In this category we can include Ohaba form Alba County, where the proportion of the elderly is 53.5%, Mărgăritești (50%) and Pardoși (55.2%) from Buzău County, Seaca de Pădure (51.3%) and Gogoșu (56.8%) from Dolj County, Padina (51.2%) from Mehedinți County as well as Răsmirești (50.5%) and Călmățui (51.8%) from Teleorman County.

In these towns and villages the index of demographic aging varies between 5000 and 6000, with one exception, Pardoși area, with a value of over 9000 (9667). In fact, Pardoși has the oldest population of Romania, from the 578 inhabitants only 5.7% being young people, more than 55% are over 60 and from the 39% of the adult population, 19.9% are between 45 and 59 years.

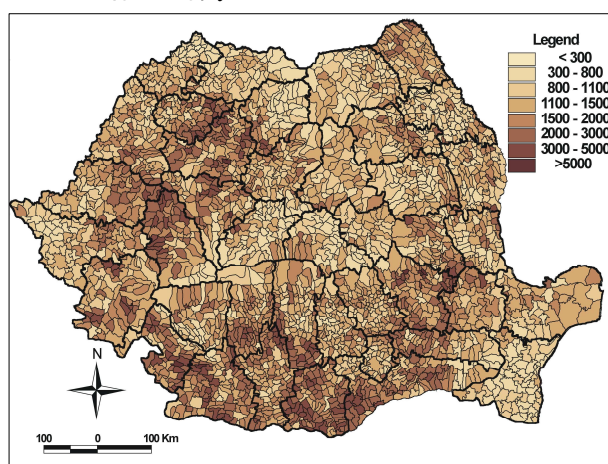


Fig. 1. The demographic aging index in 2002 (source: the author, based on the data from the 2002 Census).

We must keep in mind, that these settlements are part of the smaller localities, with a population between 1000 and 2000 inhabitants, usually isolated and far from urban centres. Many authors have

noticed that larger settlements with over 5,000 inhabitants have a much more favourable socio-economic aspect, a more stable age group structure where the process of demographical aging is much less evident.

In contrast, the aging index shows much lower values in the counties of Moldova (Iași 915, Suceava 980, Vaslui 1019, Bacău 1059) and Transylvania - Bistrița-Năsăud 1013, Satu Mare 1035 and Maramureș 1063 - while in the south, an area otherwise characterized by a seriously aging population, a single County Gorj (1145) shows a somewhat greater vitality.

Analyzing the spatial distribution of the areas with an elderly population of less than 20% and an aging index between 500-1000, it is clear that the most vital cities are the ones with over 10,000 inhabitants. Thus, in 2002, from the 2952 settlements (including cities) a total of 747 settlements had a smaller rate of elderly population than 20%, however it has to be noted that the number of these settlements shows a decline of almost 67% since the year 1992, when their number was 1103. Among these, just 23 had a rate lower than 10% and an aging index between 10 and 50 (in 1992 the number of such settlements was still 85), most of them belonging to the category of small and medium-sized cities with a population between 10,000 and 100,000 inhabitants. In this category we can include the cities of Bistrița, with a proportion of elderly of 8.9%, Botosani 9%, Codlea 9.8%, Mangalia 8.6%, Năvodari 6.8%, Târgoviște 9.9%, Târgu Jiu 9.4%, Motru 7.6%, Bălan 6.5%, Uricani 8.4%, Slobozia 8.8%, Târgu Frumos 7.8%, Slatina 6.5%, Plopeni 8.4% Zalău 6.6% and Vaslui 7.2%.

As I have mentioned earlier, the demographic aging index has particularly high levels in rural areas, in this hierarchy the last places being occupied by the urban areas of the country. This is also underlined by the spatial distribution of the elderly population, because both in 1992 and in 2002, all the cities were in the category of settlements with an elderly population of less than 20%. On the other hand, villages with an old population (above 60) of less than 10% are extremely rare, however there are some exceptions: Tomești and Holboca from Iași County with rates of 7.7% and 9.9% and an aging index of over 300 as well as Turț from Satu Mare County, where the older population represents 9.9% and the aging index is just 474.

The low weight of the elderly population in Tomești and Holboca is due to forced periurbanization policy of the metropolitan area of Iași in the second half of the 80's, when they have built more quasiurban minicentre in the neighbouring villages, each with around 5000-7000 inhabitants (Lunca Cetățuui, Dancu and Tomești-Cartier). Also we can observe that in these two rural settlements from Iași County the

population has witnessed a positive trend over the past 10 years, representing an increase of almost 500 people, which can be attributed to the change in direction of the internal migration and the large number of people returning to their places of origin. Thus, we can observe a higher increase of the population between 10 and 19 years and adults between 35 and 49.

Of course, the natural increase of the population has had its role as well, contributing to the process, although we have to mention that this has stayed negative or at very low levels during the transition years as a result ex “city-dwellers” settling in rural areas.

The rate of elderly people does not show substantial changes, keeping the values from the 1990’s, meaning that from a demographic point of view, these villages represent stable settlements and are not likely to face the problem of demographic aging in the next

four decades. The problem is that the number of the above mentioned settlements is very low. Thus, the demographic behaviour of smaller settlements, common to the socially and economically disadvantaged areas characterized by decreasing birth-rates may threaten the existence and the future of these villages in terms of human potential and labour supply [4].

Due to isolation and a poor infrastructure, we cannot expect a spectacular demographic or economic revival in the coming years, as the development of these areas would require multiple interventions from both the government and local authorities to halt the negative process that have appeared in the last decades. Analyzing the strengths and opportunities of these areas, a greater attention should be given to the exploitation of opportunities, infrastructure investments (access roads, health care, schools) being the key areas of intervention.

Table 2. The evolution of the demographic aging index according to some territorial indicators.

Indicators	Index	Aging index				Dependency index			
		1990	1995	2000	2008	1990	1995	2000	2008
Average		666.87	861.55	1026.85	1297.85	665.69	625.92	607.38	546.11
Standard deviation		143.02	178.40	190.05	227.64	68.94	52.81	67.31	55.44
Weighted Relative standard deviation (%)		21.45	20.71	18.51	17.54	10.36	8.44	11.08	10.15
Relative range (%)		0.86	0.98	0.84	0.22	0.38	0.33	0.47	0.48

Source: the author based on data from the Tempo Online, 1990-2008, INS.

As shown in the table above, both the aging index and that of dependence calculated on the basis of the relative range and the values of the weighted relative standard deviation show a slight decrease, which could mean a diminution of the disparities between the different areas of the country, but in our case it only means a compensation, showing the widespread aging of the population and the increased pressure on the shoulders of the potentially active population.

The constant decrease of fertility for the last 15 years, the worsening living conditions illustrated by increasing mortality rates have both had a negative impact on the evolution of the natural increase. This in turn has changed the age structure of the population by increasing the proportion of the elderly at the expense of the young ones.

Some authors consider that western societies – through industrialization - have created the conditions for the aging of their population [5]. The desire of modern societies to ensure better and better living conditions and higher living standards have lead and still lead to giving up ordinary, traditional habits, decreasing fertility being in the first place. The communist regime and pro-natal policies have extended the demographic transition and of course that of demographic aging by maintaining the natural increase at a higher level.

With the collapse of the communist regime and the transition to a new reproduction model of the population, from a traditional one with high rates of fertility and mortality to a modern model characterized by low birth rates, but maintaining a high level of mortality - atypical of other modern societies, being a unique feature of the Romanian society in transition - has created the conditions for triggering and strengthening demographic aging. With the lack of well thought-out policies to increase fertility and support young couples and also the lack of adequate economic and social conditions which could encourage immigration, demographic aging has increased ever more.

Thus, the process of demographic aging, which initially has presented itself as a purely demographic problem has transformed into a real economic and social issue that is more and more difficult to resolve because neither scientific researches nor demo-economic policies have managed to understand the evolution and disadvantages caused by an increasingly aging population [1].

The negative effects of the evolution of the natural increase on the labour market supply will be felt with a lag of 15 to 20 years, when the “baby boom” generation will enter the category of the inactive population, the replacement of this generation being increasingly slower.

The first signs have started to show in 2009, when the generations after 1992 have entered the category of the active population, this being the first year that the natural increase has become negative. We should also have in mind that behind this phenomenon lies the significant increase of the education level of this generation (increasing number of people with higher education), which will in turn affect the evolution of the labour market. In consequence, the demographic component is the main factor in determining labour supply.

3.2. The evolution of the working-age population

The second factor in determining labour supply is represented by economic changes, like the ones that happened in Romania in the transition period, when due to restructuring and privatization of most state enterprises many people had lost their jobs, entering the category of the inactive population as pensioners. Thus, the economic activity of the Romanian population has suffered significant changes in the past 18 years.

The increased wave of layoffs in the mid 90s has led to the termination of tens of thousands of jobs, this being the main factor in the emergence of long-term unemployment. Looking at national trends, the most significant changes have occurred among employees in industry, most of the workforce from this sector being absorbed by agriculture.

Thus, apart from modern trends of many European countries, in Romania, the restructuring between different sectors of the economy has increased the dominance of the agriculture sector. Besides the negative consequences of the economic transition, the changes that have occurred in the demographic processes had a large influence on the proportion of the potentially active population.

Analyzing the evolution of the working age population (population between 15-64 years), a

decrease in numbers can be observed starting with the '90s as well as an increase of their proportion by almost 2% starting with 1994.

The numeric decrease of the active population from 1,532 thousand to 1,505 thousand can be considered a decrease that followed the development path of the total population [1]. But the increasing rate can be attributed to more factors, the most important one being the widespread and increasing aging population.

The roots of these changes must be sought after in the 1948-1987 period with a decline in the share of people between 15 and 24 years and an increase in the group between 50 and 64 years. This last group is the generation that suffered the most because of historical and economic factors, like the effects of the Second World War, with a profound decrease of births, also favouring the increase of the elderly age group. The pro-natalist policies of the communist regime have managed to maintain the young population during the 70s and 80s, nowadays this cohort contributing more and more to the aging of the population. All these oscillations and especially the consequences of interventions in the demographic structure of the country since the years of socialism are well presented in the chart below.

We can observe the gradual decrease of the population between 15-24 years due to the continuous decrease of births since the 80s. Other population groups have had a very volatile history due to the evolution of births and deaths starting with the Second World War.

This was first followed by the liberalization of abortion by the Decree 463 in 1957, than by its complete ban in 1967. Thus, we can see the age group between 25-34 overtaken by the group of people between 15 and 24.

In the meantime, the more serious effects of this evolution will be felt much later, when this age group will enter the groups of the elderly, without a replacement for the potentially active generation.

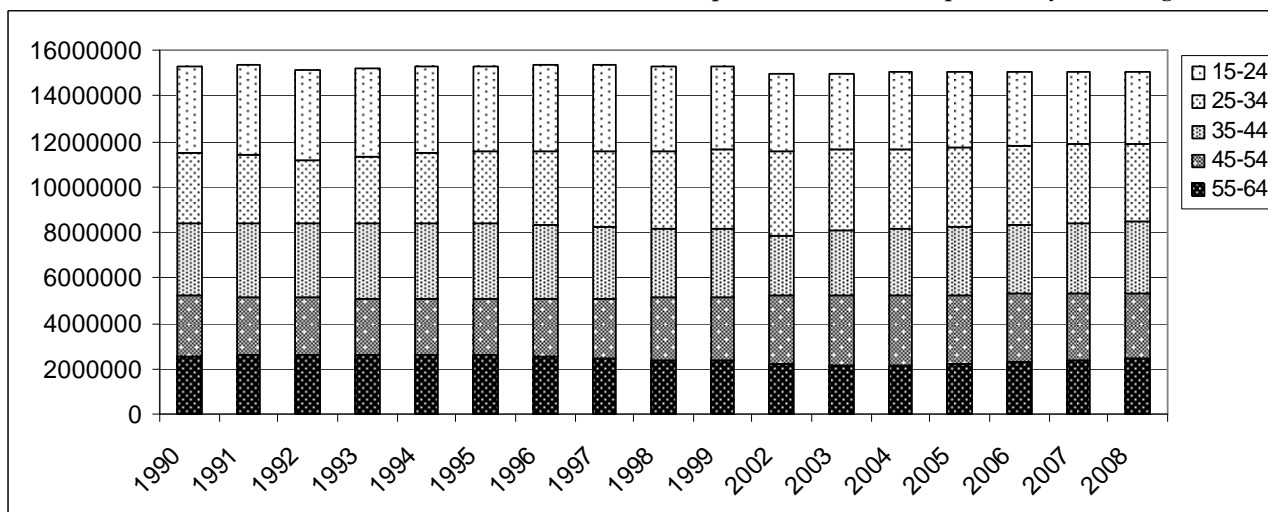


Fig. 2. The evolution of the working-age population (active population between 15 and 64 years old) [7].

Currently, many OECD countries (Organization for Economic Cooperation and Development) state that the current demographic situation is favourable, as the baby boom generations are in working age and are supporting a relatively small number of elderly people.

But in a decade or so, the situation will take a turn for the worse as this generation will enter the third age group and the active population will be increasingly smaller due to lower fertility starting with the '80s.

As average life expectancy will gradually increase, the number of elderly will experience a rapid progress [1].

Considering the period between the two censuses, we can say that while in rural areas the proportion of the potentially active population is steadily decreasing, in some urban districts it has increased its proportion, even reaching 77.4%, as in the case of Slatina Municipality.

The roots of these changes have to be sought after in the socialist period, when the internal migration of the population has contributed to the growth and rejuvenation of the urban population at the expense of the rural one, which in addition to an advanced aging is also affected by a steady decline.

The worsening of this situation is well illustrated by the fact that while in areas like Gogoșu from Dolj County, Răsmirești from Teleorman County or Dragu from Sălaj County the proportion of the potentially active population in 1992 was still 50%, by the year 2002 the rate of all adults in these villages has fallen below 45%.

These drastic decreases are usually encountered in the case of economically vulnerable localities, where the levels of isolation and poverty are much higher, economic activity is much less diverse, in settlements which fall outside of the influence area of more developed economic centres. There are also positive examples where certain settlements have managed to maintain the rate of the potentially active population or even increase it slightly.

These rural areas are usually located near major urban centres such as Jilava in Ilfov County, where the adult population has grown by almost 1% over the past 10 years, from 76.6% to 77.6%, or Brebu Nou in Caraș-Severin County, where the growth of the population has shown an even larger increase, from 66.2% in 1992 to 74.7% in 2002.

4. CONCLUSION

As we have seen, the decrease of the younger population (between 15 and 24 years) and the decrease of the rate of old people (above 45 years) will affect the potential of the workforce on long-term.

At the same time, as the number of the active population will become unbalanced it will endanger the social welfare system as well (healthcare, pension, social security). This latter process will manifest itself in increased labour costs, an increasing rate of unemployment [6].

All these developments will affect the entire Romanian economy, leading to a decrease in national GDP.

Another factor influencing long-term economic growth is productivity which is closely related to aging, this process leading to a lower productivity. In an aging society demands for extra sources of funding can lead to the increase of taxes, lower pensions or an increased production per capita, i.e. improving productivity. In the analysis of productivity we cannot forget the major influences of demographic aging.

According to some theories, the social, mental and physical skills of an aging population are much lower, lacking all sorts of dynamic and innovative initiatives.

According to other opinions, demographic aging can lead to the decrease in savings, having a negative influence on investments, thereby preventing innovations [6].

Another factor contributing to the increased participation in the labour market is the educational level.

We can see that the employment level is much higher in the case of the population with medium or higher education. In order to reach an equilibrium, several international organizations (OECD, EU) consider that increasing the age limit of pensioners could entail the extension of the years spent in work, at the same time increasing the employment rate of women and the elderly (over 55 years).

REFERENCES

- [1] **Mihăescu, Constanța** (2002), *Impactul îmbătrânirii demografice asupra ofertei potențiale de forță de muncă*, Centrul de Informare și Documentare Economică, București, pp. 1-28.
- [2] **Nemes, Nagy J.** (2005), *Regionális elemzési módszerek* Regionális Tudományi Tanulmányok 11, Macropolis Kiadó, Budapest.
- [3] **Trebici, VL.** (1996), *Demografie*, Editura Enciclopedică, București.
- [4] **Popescu, Claudia R.** (2003), *Disparitățile regionale în dezvoltarea economico-socială a României*, Editura Meteor Press, București.
- [5] **Loriaux, M.** (1995), *Du vieillissement démographique à l'intégration des ages: la révolution de la gérance*. In: Population, vol. 50, no. 6, pp. 1611-1625.

[6] **Spiezia, V.** (2002), *The Greying Population: A Wasted Human Capital or just a Social Liability*. In: *International Labour Review*, vol. 141, no. 1-2, pp. 71-113.

[7] *** *Tempo Online Database 1990-2008*, National Institute of Statistics, București.

[8] *** (1992), *Recensământul populației și al locuințelor 1992 [National Census of Population and Dwellings]*, INS, București.

[9] *** (2002), *Recensământul populației și al locuințelor, 2002 [National Census of Population and Dwellings]*, INS, București.