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## **DEMOGRAPHIC AGING OF THE POPULATION – IMPLICATIONS ON THE LABOR MARKET**

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**Abstract:** *One of the profound social and demographic challenges of contemporary society is the demographic aging of the population - an objective process resulting from the increase in life expectancy at birth and the reduction of fertility rates. This phenomenon covered most countries, especially the economically developed ones, having multiple implications on the economic, social, political, and cultural levels. Europe has the highest rate of demographic aging compared to other continents, and is considered to have already reached a critical stage. In the European documents, measures are provided to increase the legal and de facto retirement age and to increase the employment rate of the older adult population (50-65 years). Currently, at the level of the European Union, the median age is 43.1 years, but according to the latest estimates made by Eurostat, in 2050 the average age of Union citizens will be 49 years. This work wants to surprise what will be the implications of the demographic aging phenomenon on the labor market in the near future.*

**Keywords:** *demographic aging, labor market, population*

**JEL Classification:** *E24, J11, J18, J19, J21*

### **1. Introduction**

Demographic aging is a process that refers to groups, collectives of people (and not to the individual as a singular case) in terms of the structure, composition of the population in relation to the “age” characteristic, and is a risk factor related to the evolution of the population and of its structure. At the same time,

population aging is a multidimensional problem: demographic, economic, social, political and cultural.

The demographic aging process is characterized by the increase in the proportions of adults and the elderly in a population, while the proportions of children and adolescents decrease, a characteristic fact for the reproduction of the narrow-type population and which leads to an increase in the median age of the population. A significant amount of scientific research is dedicated to the problems of population aging, its multiple consequences, as well as the demographic aspects and economic consequences of aging (the impact on the labor market, the pension system and the social assistance system for the elderly). The causes that explain the aging of the population are the decrease in the birth rate, advances in medicine and the increase in the standard of living, which increase the numerical growth rate of the elderly population by reducing morbidity and mortality.

## **2. Theoretical approaches**

The migration flow, having a double meaning, can contribute to the deepening of demographic aging, or vice versa - it leads to the rejuvenation of the population. The demographic process around the globe is determined by two basic patterns:

1) the “elderly population” model, which corresponds to areas with a low level of birth and infant mortality and, respectively, with a higher level of life expectancy at birth;

2) the “young population” model, which is valid for areas with high birth and mortality rates, including infant mortality, with increasing natural growth, as well as low life expectancy at birth. The aging of the population is considered mobile, when the share of people over 60 constitutes 12 - 14% in the total population; stable, with the share of people of this age at the level of 15-19%; the aging of the population causing depopulation, with the share of people aged 60 and over 20%.

Demographic aging is a firm and long-lasting process, which, once established, continues its evolution in the sense of its emphasis. The analyzes and studies carried out at a given moment have a limited value and their conclusions are valid for not too long periods, a fact that convinces that aging is a process of both actuality and perspective. The aging of the population, as a phenomenon, constitutes a challenge not only as a biological process, which takes place at an individual level, but also as a social phenomenon, with an impact on all sectors, such as public finances, social-economic policy, the labor market, infrastructure, social relations, and so on.

The increase in life expectancy, as a determining factor of population aging, is linked to success in medicine and economics, in particular it is due to the improvement of living conditions, the modification of the morbidity structure and the reduction of the impact of external factors on mortality. Life expectancy is a “barometer of social progress”<sup>3</sup>, but its extension is a reflection of living conditions, working conditions, food, habits, environment, health and education. The aging of the population has a socioeconomic importance and a significant impact both on society as a whole and on the elderly, in particular, a positive assessment of the elderly and their role in society contributes to the progress of the economic potential and favors the effective and comprehensive integration of the elderly in society.

According to the demographic aging scale of J. Beaujeu-Garnier – E. Rossett, the aging threshold is determined at the age of 604. Taking this criterion into account:

- countries where the share of people aged 60 and over, in the total population, is less than 8%, are classified, from a demographic point of view, as “young” countries;
- countries in which the share of this group varies between 8-12% are characterized as countries in the “pre-aging” period;
- countries with a 12% or more share of people aged 60 and over are classified as “aged” countries.

With reference to the countries in the “aged” group, the classification of the level of aging is as follows:

- the “initial level of aging” in the case of the share of the elderly between 12-14%;
- the “average level of aging” in the case of the share of the elderly between 14 -16%;
- “advanced level of aging” in the case of the share of the elderly between 16-18%;
- “very high level of aging” - in the case of the share of the elderly over 18%.

At the same time, according to J. Sandberg’s classification, the determination of the level of demographic aging is carried out based on the changes that appear in the structure of the three main age groups: 0-19 years, 20-59 years, 60 years and over. According to J.Sandberg’s scale, the aging of the population is manifested when the share of people belonging to the first age group (0-19 years) is less than 30%, while the share of people from the third group (60 years and over) exceeds the 15% level. So, the main indicators that

characterize the demographic aging of society are the number of the population aged 19 and the number of the population aged 60 and over.

In the age structure of the population, demographic aging is manifested by: the aging of the “bottom” population, in the case of low fertility (A. Boiarski, Russia, Jean Bourgeois-Pichat and A. Sauvie, France; Ansley Johnson Coale, USA, etc.), and aging “from above”, as a consequence of the reduction of mortality in the elderly and in the category of the elderly, which is a result of advances in the field of medicine, and, therefore, the increase in life expectancy. Thus, the reduction of mortality contributes to aging in the following cases: more people reach old age and the life expectancy of the elderly increases.

The demographic aging process of the population has multiple consequences in the social, economic, political, cultural, etc. fields. Thus, in the economic field, this process can have an impact on economic growth, investments, savings, the labor market, the change in the structure of consumption. In the social field, the aging of the population has an impact on the change in the composition of the family, the standard of living, the demand for housing, social and medical services, education, pension insurance, etc., and in the political sphere - on the results of the elections, the system of political representation, etc. The analysis of the process of quantitative and qualitative changes in the structure of the population is a necessity for the development of programs, which include directions of a social and economic nature, as well as for making decisions in the field of health care, education, social security, employment, etc.

Demographic aging is an almost global phenomenon that faces, or threatens to affect, all countries at a more advanced stage of development. It appears against the background of the decrease in the birth rate of the population, doubled by the increase in life expectancy. It is a phenomenon that begins to raise problems after a rather long interval since its appearance, and for this reason there is a risk of not treating it with sufficient seriousness. And the reverse is true, from the moment the population starts growing again, the effects of population aging take a long time to disappear. The implications of this phenomenon are multiple, in many spheres of economic and social life, but in this chapter only the effects on the labor market will be discussed.

The implications that the aging of the population has on the labor force is a less publicized topic, although as will be seen they are multiple, but they are more difficult to quantify. Population aging implies a reduction in the number of young people, we are mainly referring to people aged between 15-29, who enter the labor market, and who are the future workforce, which in fact boils down to the reduction of the workforce, under conditions of constant participation rates. The aging of the population actually also means an aging of the labor force, which has implications in the field of qualifications, as well

as the expenses for the continuous training of employees. Demographic aging also affects labor costs, as there is a positive correlation between age and salary, which implies an increase in average salary only due to the increase in average age. On the total economy, this implies an increase in the expenses with wages, so in the unit costs, in the conditions of similar productivity of the two categories of labor force. These topics will be detailed below.

In this work, it is aimed to highlight the effects that the aging of the population will have in the future on the available labor force.

### 3. The effects of population aging on the labor force in Romania

In the case of Romania, the aging of the population is a very serious phenomenon, for several reasons, first of all due to the fact that in our country the phenomenon of demographic decline has been established for a long time, and secondly, the budgetary implications are more serious, especially due to the poor representation of the pension/health system alternative to the state one. The year 1990 is the moment when Romania's population began to decrease, a decrease accelerated in recent years by the phenomenon of external migration and the sharp decrease in the birth rate.

Table 1 presents an evolution of Romania's population, and based on this evolution, a whole series of future projections of the population number were penciled, projections that are not very gratifying.

Any population forecast is based on a series of assumptions related to the value of some rates related to birth, mortality, life expectancy, by age category, therefore they must be taken as informative, and may be disproved by the subsequent demographic evolution in the case of some rate developments not anticipated by the respective forecast. Having said that, the differences between different forecasts are not very substantial, especially from the point of view of long-term trends.

**Table 1** The demographic evolution of Romania's population

	1990	2005	2010	2019	2020	2021	2022
<b>Total</b>	23211395	21382354	20294683	19425873	19354339	19229519	19042455
<b>0-14 years</b>	5508479	3735907	3206067	3056051	3058900	3056590	3089023
<b>% of the total</b>	<b>23.7</b>	<b>17.5</b>	<b>15.8</b>	<b>15.7</b>	<b>15.8</b>	<b>15.9</b>	<b>16.2</b>
<b>15-29 years</b>	5229133	4972314	3829423	3180455	3083637	3042004	2951926
<b>% of the total</b>	<b>22.5</b>	<b>23.3</b>	<b>18.9</b>	<b>16.4</b>	<b>15.9</b>	<b>15.8</b>	<b>15.5</b>
<b>30-49 years</b>	6072530	6047504	5920312	5779333	5714156	5613516	5404506
<b>% of the total</b>	<b>26.2</b>	<b>28.3</b>	<b>29.2</b>	<b>29.8</b>	<b>29.5</b>	<b>29.2</b>	<b>28.4</b>

	1990	2005	2010	2019	2020	2021	2022
<b>50-64 years</b>	4017818	3600473	4064182	3814553	3837104	3814273	3890679
<b>% of the total</b>	<b>17.3</b>	<b>16.8</b>	<b>20.0</b>	<b>19.6</b>	<b>19.8</b>	<b>19.8</b>	<b>20.4</b>
<b>65 years and over</b>	2383435	3026156	3274699	3595481	3660542	3703136	3706321
<b>% of the total</b>	<b>10.3</b>	<b>14.2</b>	<b>16.1</b>	<b>18.5</b>	<b>18.9</b>	<b>19.3</b>	<b>19.5</b>

Source: INS, Tempo-online database, <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>

The age distribution between women and men is quite different, thus, although the total number of women is higher than that of men, at ages up to 50, men are more numerous, the situation changing for older ages. In the conditions of the predicted demographic changes, it is interesting to see what the effects are on the workforce. Most obviously, demographic aging will affect the workforce quantitatively, as participation rates are different for different age groups.

As can be seen from table 2, the 35-44 age group has the highest participation rates, with over 80% of the active population. At the opposite pole is the population over 65 years old, which has participation rates of 11.9%. The population aged 55-64 also has low participation rates, at approximately 38%. As the aging of the population reduces the population aged up to 45, which has the highest participation rates, in the long term a de facto decrease in the labor force will also be observed at unchanged participation rates.

In the context of a fairly low unemployment rate in Romania, the only reserve to at least maintain, if not increase, the number of employees remains the increase in participation rates. And from this point of view, the objectives of the Lisbon Agenda to obtain participation rates of 70% for the working-age population, as well as participation rates of 60% for women and 50% for the elderly. In the long term, when the participation rates for people up to the age of 45 cannot be increased, there will be a substitution of the young labor force with the older labor force.

**Table 2** Participation and employment rates of the population by age category, in 2022

	Activity rate	Occupancy rate
Total	51.8	50.5
15-25	27.8	22.0
25-34	80.2	75.0
35-44	84.6	80.1
45-54	79.8	77.2
55-64	39.4	35.1
over 65	11.9	9.8

Source: INS, Tempo-online database, <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>

In this context, we must identify the effects that population aging has on the availability of labor in Romania, in order to study how affected it will be in the medium and long term. However, this can only be studied under the conditions of some assumptions related to the various participation rates of the different age categories. Table 2 presents the participation rates of the various age categories at the level of 2022, the most recent year for which the respective data exists.

#### **4. Conclusions**

The aging of the population strongly influences the labor supply. A series of measures are becoming necessary now and in the next period, for the labor market. They look at several aspects:

- Reforms that generate employment and growth rates will allow better resistance to the pressure of population aging and to maintaining the level of social benefits in Europe. Extending active life is a response to a major political challenge. The promotion of an active old age of the population, the postponement of retirement, calls for changes in attitude on the part of elderly workers, but also on the part of entrepreneurs (regarding, for example, the conversion of the elderly workforce).

- Favoring a transition between work and retirement, in favor of a progressive withdrawal.

- Women are, in the future, the main source of growth of the active population. The aging of the active population poses problems related to equal opportunities between men and women, progress in dividing roles and responsibilities in the family.

- The integration of the inactive (women, unemployed) into activity and the reduction of retirements can alleviate, temporarily, the reduction of the labor force. The concentration of the unemployed among the less skilled and less competent indicates that, in a culture of technological progress, a labor shortage can coexist with a significant number of unemployed.

- The early retirement system proved ineffective and very costly for society. The retirement of elderly workers was operated at the price of long-term public financing. Early retirement policies benefited the private sector, which restructured and reduced the workforce without replacing older workers with younger ones.

- Current retirement age policies need to be reviewed. An increase in the retirement age has a positive effect on public spending and allows maintaining the job offer in the following decades.



– Work methods must be reconfigured for all age groups, within a global policy regarding work, family, social protection, retirement.

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