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## **GROWING NUMBER OF PENSIONERS AND POPULATION AGING IN SERBIA**

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**Abstract:** The aim of this paper is to shed more light on population aging by using indicators such as years of service and average years in retirement, since the most benefits from the Fund for Pension and Disability Insurance are paid for elderly. As a method for better understanding the structure of pensioners, we used the data on years one spends as employee before gaining pension benefits, so we could get better information about previous activity of retirees, but also to emphasize legal issues that have increased the number of early retirement recipients. Many countries do not allow early retirement, so the limitation of minimum years required for the early retirement is necessary for reduction of pension spending. Another important characteristic of the financial sustainability of the Fund for Pension and Disability Insurance are the average years in retirement. Given the fact that the life expectancy of the elderly is slightly increasing, it is realistic to expect longer use of pension of old-age and disability pensioners, who are on average younger. Apart from showing the level of financial sustainability of the fund, this indicator shows the characteristics of mortality in the country. Pension Fund data show certain development tendencies that will continue in the future because all processes related to population are long-term, including those related to pensioners that are beside socio-economic, influenced by demographic factors.

**Keywords:** structure of pensioners, aging population, life expectancy, average years in retirement

### **Introduction**

Long-term population aging in our country is a topic that every day becomes more and more important because of possible implications that can not be accurately predicted. One segment that is often part of political debate is the number of retirees whose number is close to the number of employees. Pension Reform Act of 2001, 2003 and 2005, led to the immediate impede of growth that lasted a very short time, but in the last five years the trend of increase has continued. Since their number is not only a consequence of legislation, they cannot be numerically stopped or slowed down with unique measures. One of the reasons for growth in the number of pensioners is population aging, because

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of the rising number of people receiving benefits due to increased life expectancy.

An important feature of pensioners is that they are inactive population, and persons with personal income, who thanks to their past employment receive benefits. In Serbia, there are three categories of pensioners: old-age pensioners, those who were employed and who paid contributions to pension fund and need to be older than certain age limit to get pension benefits (60 for woman and 65 for men); disability pensioners who receive a pension regardless of age, and based on their health status and survivor pensioners, mostly children without parent(s) who still go to school, as well as widows or widowers, if the deceased spouse provided sole source of income. Formerly, there were three pension funds: fund of employees, self-employed and farmers, which were in early 2008. consolidated into a single fund (Stojilković, 2010). Serbia has unfunded pension or "pay as you go" system, which means that during their work life today's retirees paid contributions when they were employed into the specific fund. From this fund they could gain the right to receive a pension, and their pensions were to be paid from the contributions of currently employed population.

Due to the process of secular fertility decline and increase of life expectancy which leads to the inevitable population aging, the number of pensioners as part of the older population is rising. The relative share of pensioners in the population will grow in all developed countries, as a result of the small number of births, and large number of people who were part of the pension insurance system. United States of America will be less affected by these changes because of favourable fertility rates and higher rates of immigration. Most European countries are trying to find a way to cope with the promises given to pensioners. Although the European Union faces a variety of demographic challenges, the common one is population aging, which is the most important reason for pension reform. Group of countries with accelerated aging and high rate of economic dependence of the population includes Spain, Italy, Greece, Portugal, Germany and Austria (Vidlund, 2006; Willetts, 2003). Likewise, pension system in Japan was amended several times, starting from the eighties to accommodate the demographic changes (Sakamoto, 2009). The situation in Eastern Europe and the region is similar to the one in our country. If the simplest assumption was that the increase of population older than 65 years will be followed with increasing cost of pensions, in countries such as Croatia, Hungary, Poland and Ukraine, the cost of pensions will be substantially bigger so that in 2025. it will exceed the level that exists in Italy (a country that currently spends the most on pensions). Many different countries such as Bosnia and Herzegovina, Bulgaria, Czech Republic, Macedonia, Slovakia and Turkey could be facing the level of pension

costs higher than current pension spending in many states of the European Union (Mukesh, Betcherman, & Banerji, 2007). Slovenia faces similar problems of pressure on public pension system caused by the aging population, since life expectancy is growing fast, while the fertility rate is among the lowest in the world (Sambt & Čok, 2008).

More elderly in the total population and an increasing number of pensioners who receive benefits diverted from the contributions of employees are calling for a political response because the position of pensioners depends largely on the number and structure of the employed population. In addition, the old-age pensioners consist half the total number of pensioners, which raises the question of how the modern society will respond to this challenge. This is a problem that should not be considered separately because it did not come only as a consequence of the aging population, but also as a result of legislation and economic trends that have led to significant fluctuations in the number of employed population. According to Stojanović (2006), methods of adaptation to descending level of economic activity in the late 20th century were the fall in real wages, increasing number of employees on paid or unpaid leave, greater number of retirees, increasing participation of employees in the informal ("gray") labor market. Today, most areas of our country are facing problems such as high share of older persons and registered high (and frequently hidden) unemployment (Radovanović & Maksimović, 2010), which directly affects pensioners. Besides financial problems, there are the issues that concerns health and social care, because a greater number of older people mean greater need for geriatric services, nursing homes and adjusted infrastructure.

### **Data and methodology**

To explain the ratio of pensioners in total population, their share was calculated for census years. Percentage of persons older than 65 years and old-age pensioners was also part of analysis. As a method for understanding the problems of aging and its impact on the number and structure of pensioners, we used life expectancy as indicator, in order to indicate the prolongation of life, and indirectly the extension of the years in retirement. The data sources on life expectancy are statistical yearbooks because they contain the required data time series. Abridged life tables were another source of data, because they contain information on life expectancy of persons older than 60 years. The paper analyses the period from 1953 onwards, with special emphasis on the period 2002-2008.

Data about pensioners who are the subject of debate were obtained in the Pension and Disability Insurance Fund, which takes regular statistics on all the important structures of pensioners. Data refer to the number of pensioners from all three funds, but we met to certain restrictions that will be emphasized when analyzed. Using the data on years of retirement, years of service before retirement and the average age of retirement, we have access to the mortality conditions that shaped changes in the number of pensioners.

### **Dynamics of the number of pensioners**

The current age structure of population of Serbia was formed under the direct influence of fertility, mortality and migration, but also under strong influence of inherited age composition, or under the influence of demographic inertia. The consequences of disorder in the age structure caused by the World War I, and then the World War II, a sharp increase of fertility during the early 1950s, and later a relatively intense decrease of fertility, are the predominant factors that shaped specific features of the age structure of our country. Population aging is primarily the result of a large decline in fertility, which has long remained at such a low rate, that for half a century it hasn't not provided even the simple reproduction of the population (Penev, 2006).

First available data on the number of pensioners are from the fund of employees in 1952 (111 698). In early sixties there were about 200 000 retired people and in the next ten years the number of pensioners doubled, and at the late seventies number of beneficiaries exceeded half a million (1978). The absolute number of pensioners in the eighties grew intensely, so that their number exceeded 1 million in 1991, and by 2000 the pension fund of employees received an additional 200 000 retirees. At the beginning of the last decade, the total number of pensioners for the first time began to decline as a result of the legislation reform, but this exception from long-time increase was reversed back into increase again in very short time.

The total number of pensioners according to Pension Fund for January 2011 was 1 626 581. Fund of employees as the biggest pension fund (the share of beneficiaries of this fund is 83% of total number of pensioners) had 1 345 733 beneficiaries, of which 708 934 were old-age pensioners, 322 934 disability and 313 865 survivor pensioners. When it comes to fund of farmers that retired, there are 222 480 (184 066 old-age, 13 222 disabled and 25 192 survivor), and their share is 14%. The absolute number of the fund of self-employed is 58 368 (of which 26 711 are old-age, 16 805 disability and 14 852 survivor pensioners), with share of 4%. The dynamics between old-age, disability and survivor

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pensioners has been changing, because under socialism private sector was poorly developed and farmers did not recognize the pension fund as necessary, so that the share of pensioners in the fund of employees in the past was even larger (Stojilković, 2010).

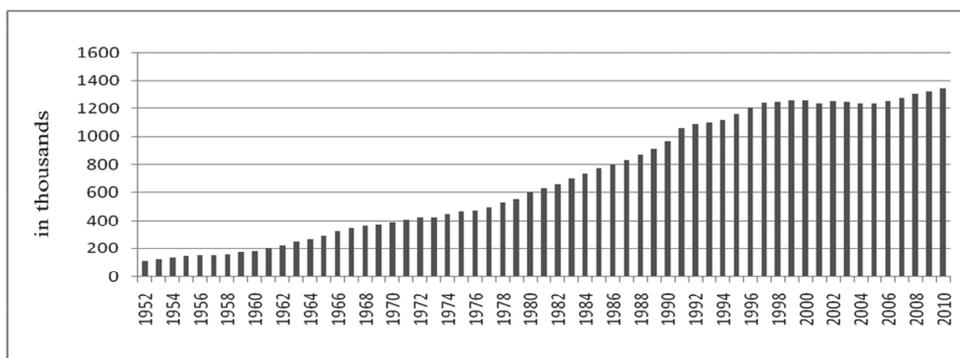


Figure 1. The absolute number of pensioners, 1952-2010.

The share of pensioners in total population of Serbia was only 2% in 1953, until the next census it has increased to 3%, and almost doubled in 1971 (5.7%). Starting from 1981 census, it continues to increase, and their share in the period between 1981-2002 was doubled (from 8.2% to 16.7%). According to the 2002 census, the proportion of population aged 65 years was 16% (the same as proportion of the population under 15 years), the same as the share of pensioners (Figure 2).

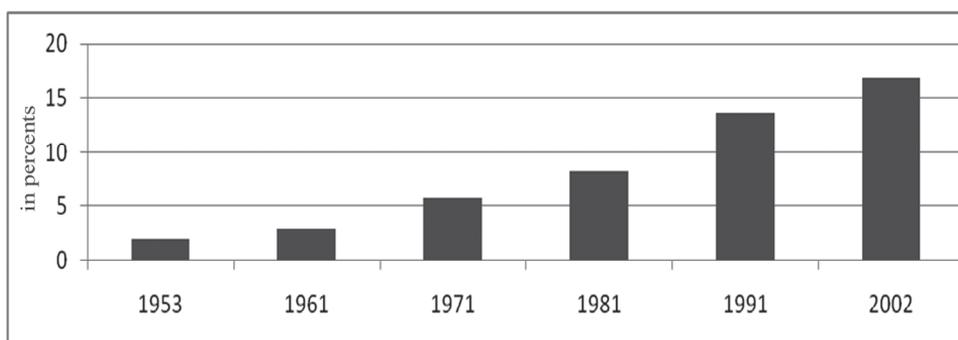


Figure 2. Proportion of pensioners in total population, 1953-2002

The trend of increasing old-age pensioners follows the trend of aging of the population older than 65 years (Figure 3). While in 1981 there was less than 3%

of old-age pensioners and 10% of the population older than 65 years in total, census in 2002 showed that these processes are intensified, and the share of old-age pensioners increased to 7% and the proportion of those over 65 years to 16%. When talking about future dynamics in old population, depending on the scenario, their share in total population will be from 18.7% to 27.5% and thereby we should expect intensified aging of the population older than 80 years (Rašević, 2006).

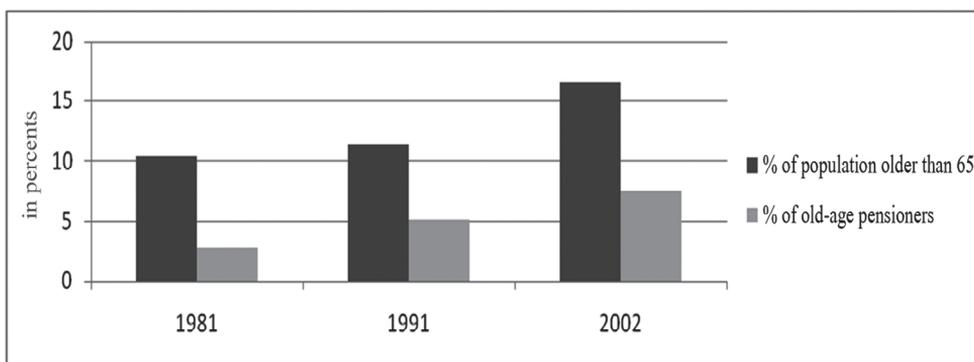


Figure 3. Proportion of old people and old-age pensioners in total population, 1981-2002

Based on the projections "increase in the number of people older than 65 in the coming decades is more than certain. There is only 10% chance that in 2050 the size of the oldest populations will again be 1.3 million as it is today, and it is likely that the number of long-term growth through half a century will attain the expected value of 1.53 million" (Radivojević & Nikitović, 2010). Based on these data we can predict possible future trends in the dynamics of retirees and increasing their absolute number and relative share. Slower growth in the number of pensioners could be achieved by restrictive measures (usually by extending the age limit necessary for retirement or increasing contributions), which would cause dissatisfaction with current employees because it would mean that they must work longer to qualify for a pension or to give bigger share of their salary for the payment of contributions.

### **The influence of increase in life expectancy on the number of pensioners**

In addition to socio-economic conditions that affect the increase in the number of pensioners, indispensable are demographics, with special stress on processes related to mortality, which strongly influenced the dynamics of pensioners. Positive changes that are reflected in different causes of death, resulted in

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prolongation of life of older people, and caused that one of the most important factor that influence the number of pensioners in modern society - life expectancy. Another important factor is related to economic structures and the changes in economic activities that were induced by the process of deagrarianisation and deruralization. Changes in fertility are not important as the demographic framework, but are essential because its decline below replacement level has influence on the growth in the relative percentage of old population, and consequently the relative proportion of pensioners. The fall of mortality of population older than 40 and age selective migrations are also causes of population aging.

Life expectancy is a synthetic indicator in the demographic analysis, which provides information on how certain cohort will live. In Serbia, this indicator had similar values as all developed countries until the 1990s, when its stagnation and even decline was recorded, but in the beginning of the millennium it showed a further increase.

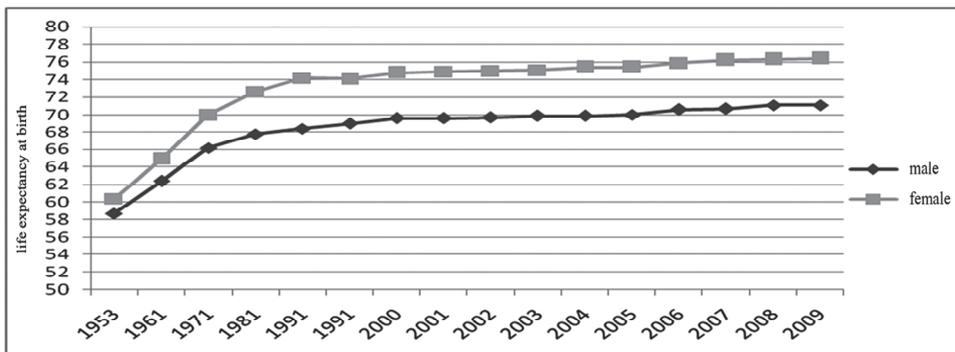


Figure 4. Trends in life expectancy at birth by sex in Serbia, 1953-2009

Of particular importance for the retirees is the fact that along with increasing life expectancy, their number increases as well. The aging population has followed the process of extension of life expectancy, at the same time reducing the number of live births, leading to aging from "top" and "bottom" of the age pyramid. In addition, except for big problems when it comes to the demographic balance between old and young, these processes have led to various social problems. The increase of life expectancy is a very humane process, but in countries where it happened in the same time as process of declining fertility, these two trends lead to negative tendencies.

The greatest progress in increasing life expectancy occurred just after the World War II and after the *baby boom*. *Baby boomers* are those born after World War II, which are significantly more numerous than the generations born before and after them, as a consequence of delayed birth during the war. Based on trends in fertility and the number of births, the *baby boomers* are all those born from 1947 until 1957. Simultaneous increase of life expectancy and the birth of the *baby boomers* generated large cohort that will live longer. These generations are close to the age limit for statutory retirement, when we can expect an increasing number of pensioners for purely demographic reasons. Just as the *baby boomers* were the ones that strongly affected the pension system thirty years ago, when the economy was in full swing, when many workers could afford payment of a relatively small contribution, and small number of pensioners received high pensions (Stojilković, 2010b). The effects of this "demographic dividend" from the *baby boom* period were noticeable during the last census and through the whole decade (Radivojević & Nikitović, 2010).

It is realistic to assume that the life expectancy will be further extended, if there are no negative events, such as wars and crises. With the increase of this indicator, the number of pensioners will increase, particularly old-age pensioners, who are most numerous. With the current system of financing, it will be difficult to provide benefits for a growing number of non-active population, which paid contributions continuously during their working life. Many countries have seen the solution in the introduction of three pillar pension system, with mandatory private pension insurance, in addition to the mandatory state insurance, while Serbia has not followed this kind of reform, but instead, introduced only third pillar or voluntary private pension insurance.

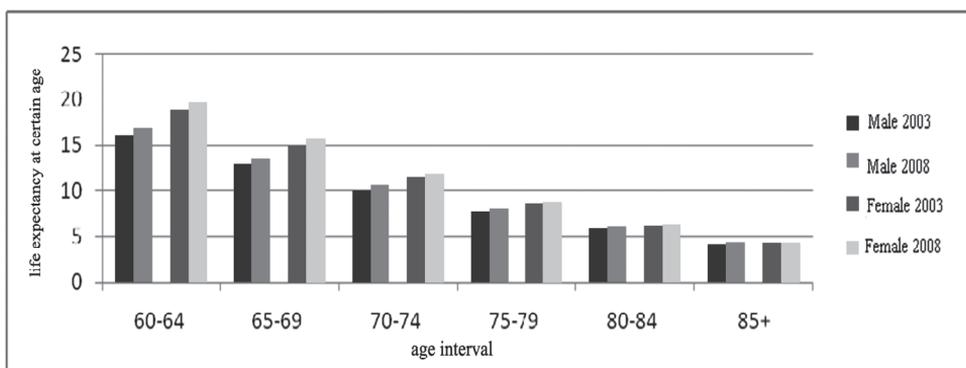


Figure 5. Comparison of life expectancy of persons aged 60 years and older, 2002 and 2008.

It is noticeable (Figure 5) that life expectancy increases, especially for women aged 60 to 80 years, while the older group did not show a significant increase in the period 2003-2008. Namely, if we look at five-year period for mentioned age groups, it is clear that women who are now 60-64 years will live longer than women of the same age group in 2003. A similar situation exists among man where the rise of life expectancy could be also noted. Given that the processes related to the population have long-term nature, it can be expected that the value of this indicator continues to grow in the future.

In the age interval 60-75 years, life expectancy is longer for women, while in older groups the difference between men and women is decreasing. Prolongation of life is certainly a goal that every society strives to, but the effect it has on the age structure and aging population leads to the need for changes in some previously customary social consensuses. The question remains why parallel with increase of life expectancy does not come with increase of the age limit for retirement. Although most countries have increased that limit, it seems that this is a very sensitive issue. Most high-income countries equalize the age of retirement for men and women. Only in Austria, Greece, Italy and Switzerland there is a difference in age limits for retirement between the sexes, and in the case of Switzerland, the difference is only one year (World Bank, 2009). In the United States, women have longer life expectancy and a number of years spent in retirement compared to men (Warner, Hayward, & Hardy, 2010). Reform in Serbia increased the legal limit for retirement, but still there is a difference of five years between men and women.

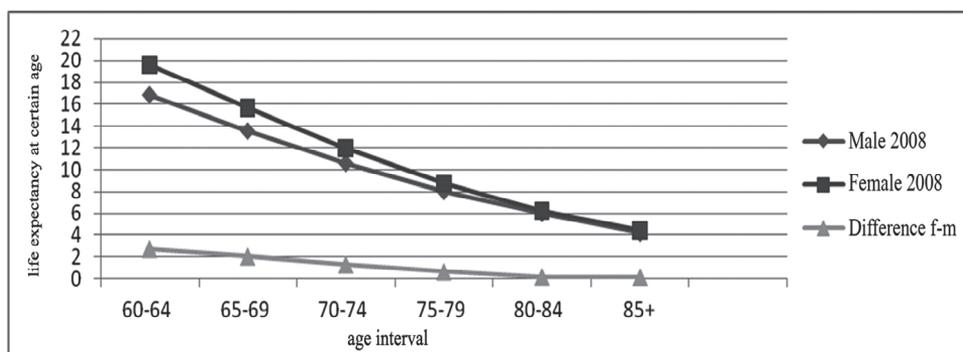


Figure 6. Life expectancy of men and women older than 60 years, 2002-2008.

A significant increase in life expectancy during the twentieth century is a great success, but also brings great challenges for public policy measures, particularly for pension systems. The privilege of retiring was enjoyed by a small number of

workers, but is now expected by many. As life expectancy increases, either benefits will be reduced or there will be longer years of service in order to get pension benefits. Proposed reforms in developed countries include automatic adjustment and linking to increased life and years of service (Whitehouse, 2007).

### **The structure of pensioners by type of pensions in the context of aging pensioners**

Important structure of pensioners is by type of pension they are entitled, or whether they are old-age, disability or survivor pensioners. Each of these categories has its specifics. Old-age pensioners receive the right to a pension at the statutory age, disability may be persons who have permanently lost the ability to work as a result of the injuries that can occur throughout life, while the survivor pensioners also very versatile, since the right to survivor pension may be aloted to two members of the contributors family with various ages. The relationship between these categories over the last half century has changed and today's situation is the result of long-term changes in the law, demographic and economic situation.

To get better insight into the dynamics of the number of pensioners and the reasons for their enormous increase, we look into the internal composition and types of pension. While the old-age pensioners are in direct correlation with demographic aging, the other two categories include persons of different ages. Since 1960 the share of survivor pensioners varied linearly (about 25%), while the percentage of disability pensioners was greater than old-age until the mid-nineties. Old-age pensioners take predominance in the last decade (Stojilković & Devedzić, 2010).

According to data from 2008 the number of old-age pensioners is greater than the number of disability and survivors pensioners combined for the first time. This tendency is consequence of the aging of population, because the number and proportion of old-age pensioners increased both absolutely and relatively. Decline in the number of disability pensioners is certainly a very positive trend, but only if there is actually less people who retire because they have lost the physical ability to work. Constant number of family pensioners is also positive, because there is no increase in the number of children without parents who were their breadwinner, and the widows and widowers who have lost financial support due to death of spouse.

A large number of retirees who receive disability pension and who are younger than 65 years comes from the earlier liberal laws who have defined disability as

inability to perform work activities which individual has previously performed. The current law stipulates that only those who can not perform any activity can get their right to disability pension, but in cases where disability pension were granted it could not be constitutionally revised. Unrealistically high share of disability pensioners in our country for the past half century does not reflect actual working conditions. Instead, reduction of their share in the recent period is a direct consequence of legislative solutions. In other countries, the ratio of the three given categories of insured persons is quite different, disability pensioners are about 10%, the old-age 60-80% and the rest are survivor pensioners (Stojilković, 2010b). A large number of recipients of survivors pension was created mostly due to provisions that allow widows and widowers to receive family pension with only 54 years for men and 49 for women, instead of being required to wait until they reach age limit for retirement same as old-age pensioners (World Bank, 2009).

### Years of service of retirees

Most countries restrict early retirement to five years or less from statutory age limit, and many countries do not allow it all. Average years of service in 2009. amount to 33 for fund of employees, 31 to the fund of self-employed and only 16 years to fund the farmers.

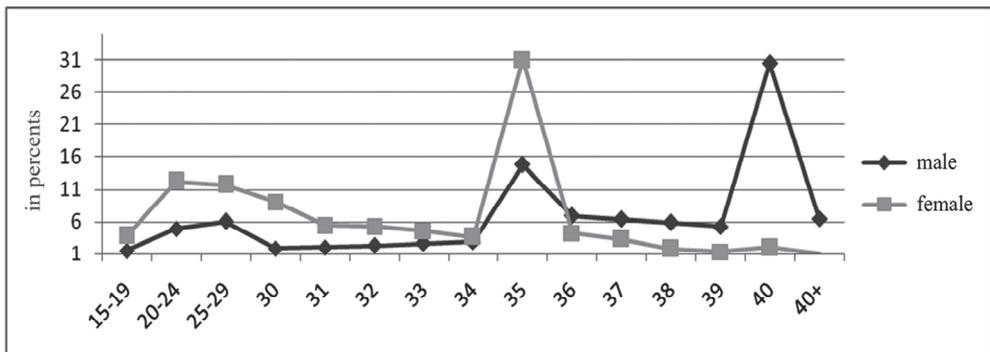


Figure 7. Structure of old-age pensioners by years of service, 2008 <sup>2</sup>

The share of those who have retired as old-age pensioners with 15 to 19 years of service is very low for both men and women, while there is a significant difference between the sexes when it comes to the range of 20-24 years of

<sup>2</sup> The data for the fund of farmers and fund of self-employed are not included, which applies to the following two graphs.

pension insurance, in favor of women (a similar situation is with retirees who worked 25 to 29 years). Proportion of pensioners who worked 30 years is 18% for men and 9% for women. From 30 to 34 years of service, the proportion of women decreases, while the proportion of men who worked a given number of years increases. The biggest share of women who are eligible for retirement is 35 years of service as much as 31%, where their share notes a sharp increase, which corresponds with the legal age for obtaining the old-age pension. Very few women worked between 36 and 40 years and their share is insignificant, while the situation is opposite for men. Unlike the women whose peak of working years is 35, for men it is 40 years, which corresponds to the legal limit for retirement, and agrees with the fact that men work 5 years longer than women. Strikingly high proportion of women who worked for 35 years and men with 40 years of service, with difference of 5 years, clearly correspond with the legal framework related to old-age pensions.

#### **The average use of pension and indicators of growth in the number of old-age pensioners**

A very important characteristic for the financial sustainability of the Pension and Disability Insurance Fund is the average years of retirement. Given the fact that the life expectancy of the elderly is in a slight increase, it is realistic to expect more years one spends in retirement as old-age pensioner. Survivor pensioners are excluded from the analysis because of methodological problems, the fact that a survivor's pension is sometimes used by more than one of the insured. Average years of retirement for the fund of employees in 2009. were 16 for men, and 19 years for women, which suggests that these differences will exist in the future or possibly increase. Men and women who were self-insured are using their pension on average of 11 years, while insured male farmers spend on average 12 years as pensioners, and women 14 years. Observing the average annual years of retirement, differences between men and women exist in all funds and the difference is in favor of women.

Proportion of retirees who used pension for 5 years during the period 2002-2008 is in steady decline, which indicates an increase in the share of pensioners with longer pension use. In the same period, the proportion of those who use retirement 6-10 years slightly increased. There is a reduction in the share of pensioners who use the pension 11-15 years, while the percentage of those who have retired 16-20 years ago is increasing. This is a consequence of aging old-age pensioners, but also the fact that there are more women pensioners. The share of those used pension from 21 to 25 years has increased. The biggest change in this indicator refers to the range of 26 to 30, where in the last five

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years it has increased from 2.8% (2003) to 7% (2008), which indicates a significant increase in the number of those who use pension for very long time. Disability male pensioners on average use their pension for 17 years and women for 21 years, while in the fund of self-employed situation is somewhat different, years spent in retirement for man are same as for the old-age male pensioners (11) while for women are one year less (10). In the fund of disabled farmers, insurers on average use the pension shorter – 9 years for men and 8 years for women.

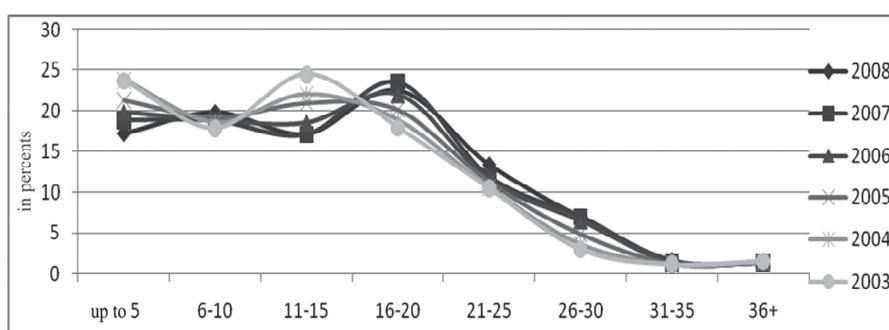


Figure 8. The average retirement years of old-age pensioners, 2003-2008

What can serve for a more detailed study is the data on permanent loss of pension benefits caused by death of insurers and their age distribution, which approximately indicates their health status and extent of aging.

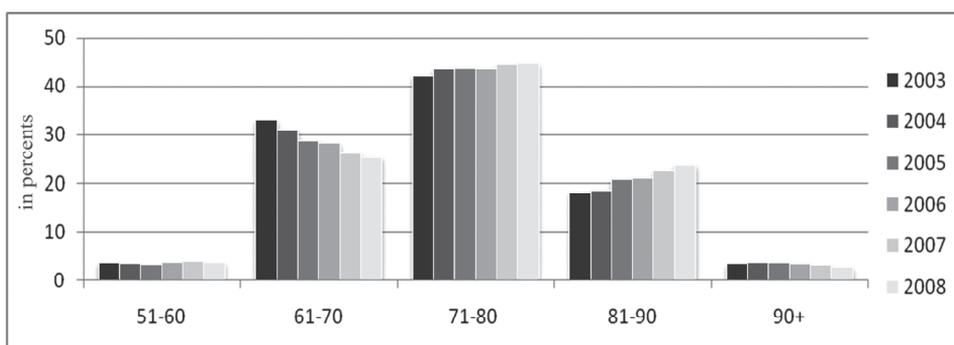


Figure 9. Permanent lost of pension benefits caused by death of insurer, 2003-2008.

Proportion of old-age pensioners aged 51-60, who permanently lost pension benefits due to death in period 2003-2008 is very low, which is logical, because

the share of this age group in the total number of old-age pensioners is negligible. However, in the age group 61-70, in the observed five years, we note the successive decline of old-age pensioners (from 33% to 25%). Even these data, the fact that proportion of 51 to 60 years old pensioners is unchanged and that the share of those who are 61 to 70 years decreased by 8%, show the progressive aging of older groups of pensioners. Stable share of pensioners aged 71 to 80 years in the total number of pensioners lead us to conclude that in the given five years, we have an increase in the share of old-age pensioners older than 80 years. We can notice successive increase in the share of pensions aged between 81 and 90 years, while the proportion of those over 90 years in the period is constant.

Evidence that this is not an isolated phenomenon is age distribution of disability pensioners, that has the same tendencies as those in old-age pensioners (decline in the share of pensioners aged 61-70 years and an increasing proportion of pensioners aged 81-90 years). An extension of years in retirement as well as an increased proportion of people older than 80 years that use the pension are the economic challenges that every developed society, including our country, faces. Response to these new challenges, which are a consequence of demographic changes in age structure of the population, must have a unified approach because all processes analyzed so far have an impact on all social systems, the political, economic, cultural, educational, etc.

### **Conclusion**

Improvements in life expectancy, after the negative processes during the 1990s caused by war and crisis, indicate future changes in the number of old population and increasing the number of pensioners, as part of the old population. This very accurate indicator mainly applies to the total population, but can also be used for understanding the processes that can be expected in the number of pensioners (particularly old-age). Changes in the structure of pensioners who use pension in the last half century are sufficient to point to greater number of older pensioners, because share of disability and survivor pensioners decreases while the proportion of old-age pensioners is constantly increasing. Pension benefits use increasing number of elderly, but this situation is not final, and we could expect further changes in certain tendencies, as numerous *baby boom* generation massively acquire pension rights and thus affect the "rejuvenation" of pensioners. Problems that will cause imbalance in inactive and active population, will not be solely experienced by our country. Most countries in the region, as well as developed countries, have the same or similar difficulties to cope with demographic aging. The challenge of modern

society will present the definition and implementation of solutions that could mitigate the negative consequences of increased number of pensioners, and adjustment of the burden imposed on working age population and financial security for economically inactive.

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