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Impact of Demographic Changes onto National Economy Development

Abstract. *The effects of population decline and their influence onto the national economy need to be analyzed with reference to modern demographic trends regarding society ageing process. The problem of demographic changes does not only concern the birth rate, life span and migration, but it also refers to economic phenomena and thus, the economic and demographic trend interrelation becomes quite obvious. Macroeconomic approach defines the relationship between the demographic and social and economic development of the country. This research gives a broad overview of the influence of demographic changes onto the national economy. The purpose of the following paper is to present the impact of demographic changes onto Polish economy. The research period covers the years 2004-2015. The scope of the study includes the subject literature overview together with the collection of source materials presented in the empirical part of the study.*

Keywords: *demographic structure, national economy, ageing, population*

Introduction

Global demographic changes are nowadays becoming more and more apparent. Demographic processes together with their consequences are now seen as challenges especially in terms of social and economic structure of the country.

Small demographic potential is, with reference to the economy, connected with a number of problems of functioning of the labor market, public finance or medical care. Insufficient number of individuals participating in the economy

leads to problems in economic development, and as a result of that, to the slowing down of economic growth.

The major factor which leads to changes in the demographic structure is the intensification of the ageing process together with the reduction in the number of births. Ageing is mostly manifested by the increase in the number of people who are at the post-working age. This influences the stability of the public finance due to the increase in the expenditure on social and medical care. The number of people at the production age is diminishing and the number of elderly people, who generate more spending, is rising. This expenditure comprises mostly pensions and health care [Pleśniak 2014: 44].

Nowadays Polish society is experiencing demographic transformation. Low number of births does not provide demographic renewal and the number of elderly people is constantly rising.

The fall in the population resulting from the decrease in the fertility rate (value at the level lower than 1.5 leads to difficulties connected with generation replacement), which, in turn, results in the decrease in the number of people of production age – from 25.9 million in 2010 to 21.8 million in 2035 [Central Statistical Office 2015], and is connected with the availability of labor force.

For Poland, this availability of labor force seen as reserve is a decisive factor for economic growth as it decreases the gap in work efficiency. Reduction in the labor force will be reflected in the labor market, which, in turn, will enforce changes in the structure of Polish economy.

Ageing of the society needs to be treated as a natural and inevitable process which is part of mechanisms of functioning of the economy. It is also a challenge which Poland needs to face as people are the most important resource of the economy and can determine its competitiveness.

The purpose of the following paper is to pinpoint the most important determinants concerning the role of elderly people in the society and to present the consequences of demographic changes that result from society ageing and their influence onto Polish economy.

1. Demographic changes – ageing of the society

The current demographic image of Polish society is the result of the Second Demographic Transition which has been present since the end of the 20th century. The major factors influencing the changes are the change in fertility pattern together with the transformation of family formation. These changes have been accompanied with prolonging human life. All these factors are reflected in the age structure of the population, in particular the acceleration of ageing of the society, diminishing numbers of people in productive age and labor force ageing.

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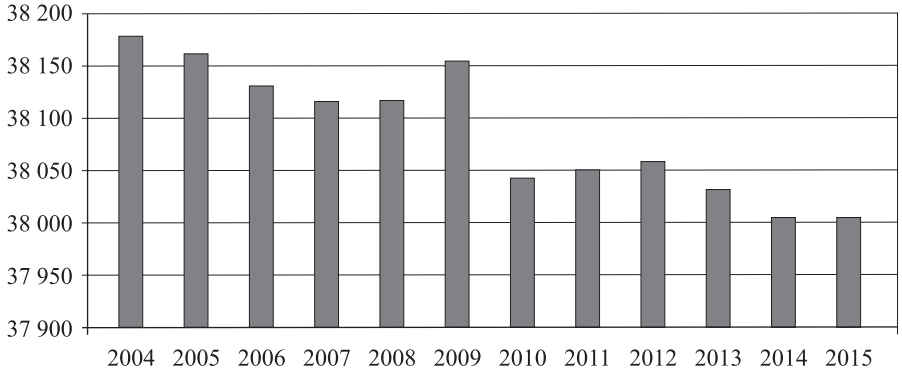
Population age structure depends on the past and current trends regarding death and birth rates and migration. The ageing of the society can be a consequence of shrinking percentage of young people connected with the decrease in the birth rate. One can observe a significant increase in the number of people at the age of 65 and older. By 2050 the percentage of elderly people will have increased to almost 35% (in 2010 this percentage was 13%). Additionally, the number of people over 80 is also increasing (approximately 1.4 million people), which results in the intensification of double ageing of the society, that is a sudden growth in the number of people aged over 75 [CSO 2015].

Figure 1. Total population in the years 2004-2015
(in thousands)



Source: own elaboration.

A significant characteristics of demographic situation in Poland is a continuous decrease in population. In the years 2004-2015 the number of inhabitants dropped from almost 39 million to 38 million (Figure 1). At the end of 2014 the population was 38.5 million, 8.5 million of whom were people over 60 (over 22% of the total population). In 2015 the number of Polish inhabitants was only 38 million [CSO 2015].

The decrease in the population is the result of the unfavorable tendency which is a low population growth rate. The birth rate has decreased, which, together with the simultaneous increase in the number of deaths, has resulted in the decrease in the population growth. Currently this ratio has dropped to the level of 1.25. The biggest loss of the population was observed in 2013, when the decrease in the birth rates was combined with the simultaneous increase in the number of deaths. In 2014 the population growth rate was 0.0% (Figure 2), which means that the population lost its ability of reproduction by means of population growth, that is maintaining the balance between birth and deaths numbers.

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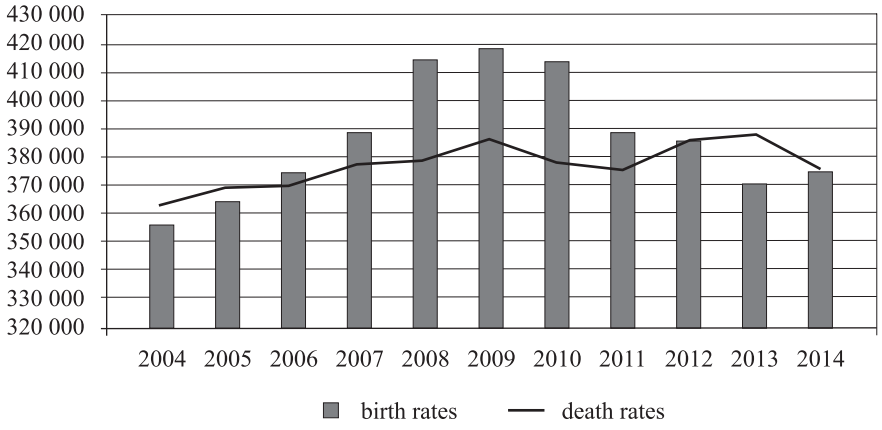
Figure 2. Population growth versus death rates in Poland in the years 2004-2014



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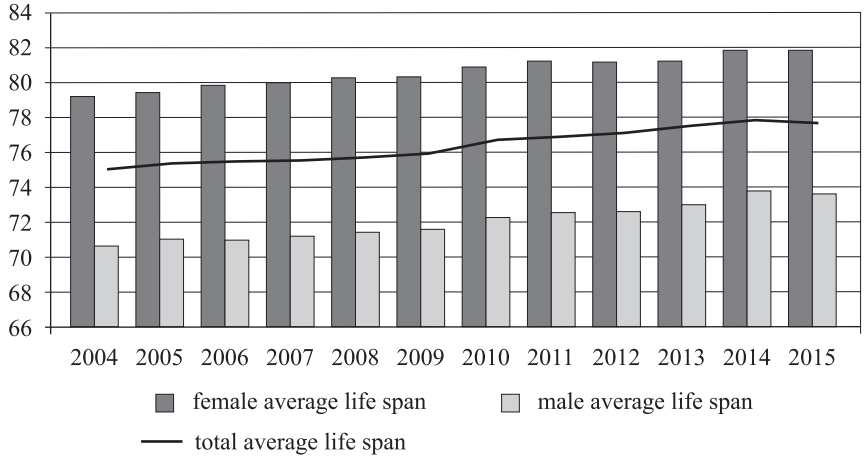
The process of ageing of the society initiated by so called demographic transition was connected with the shift in the population reproduction regime from the traditional to the modern one which is characterized by the small number of deaths and births. These changes have resulted in the change in the age structure of the population of Poland.

Multigenerational family in which all the members had to work was seen as the necessity without which one could not function. It was dominated by tradition

Figure 3. Average life span in Poland in 2004-2015



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and culture, not by the economic system [Toffler 1985: 272]. The State from the social and economic point of view did not play then a significant role.

The development of the economy was a direct impulse for family transformation. The role of the woman was totally changed as she gained independence. The reconciliation between the woman's role within the family and her professional aspirations led to the change of procreational behavior, which, in turn resulted in the drop in the number of births. A child has started to be seen as "consumer good" and the fertility pattern has changed. In 2015 the fertility rate was at the level of 1.28.

The ageing of the society caused by the decrease in the fertility rate together with the lengthening of the human life (Figure 3) determines the generation structure of the society.

The progress of civilization, including the development of medicine and health prophylaxis results in the growing numbers of people at the post-productive age. [Kijak 2013: 6].

The process of ageing of the society, although often perceived as human success, is very costly for the country's economy, as it requires changes in the structure of health care system and public finance.

2. Pension scheme and health care and ageing of the society

Demographic issues are becoming the most significant problems that the economy is now facing. The social, cultural and moral changes have resulted in a number of demographic negative changes. The improvement of demographic ratios used to be perceived as the sign of improvement of health and life conditions. However, neglecting the possible consequences of this phenomenon turned out to be a serious mistake as we will have to face them in the near future. Therefore, the problem needs to be considered thoroughly in terms of economy development as it relates directly to strategic developmental issues. The barriers to keeping the proper level of development are related to public finance and public expenditure which determine the economy's ability for further development. [Michalski 2015].

Thus, unfavorable changes in the demographic structure are the obstacle to the country's sustained development, which will definitely lead to cross-generation tension and will also limit the opportunities for the quality of life improvement as the fiscal burdens will be impossible to tolerate by the people at the productive age. Impeding economic development will directly result in hindering economy competitiveness, which will, in turn, lead to smaller generation of work places.

The most significant demographic challenges should make one consider the problems of insufficient numbers of working people whose earnings would need to be redistributed. That would be the major income source for the growing group

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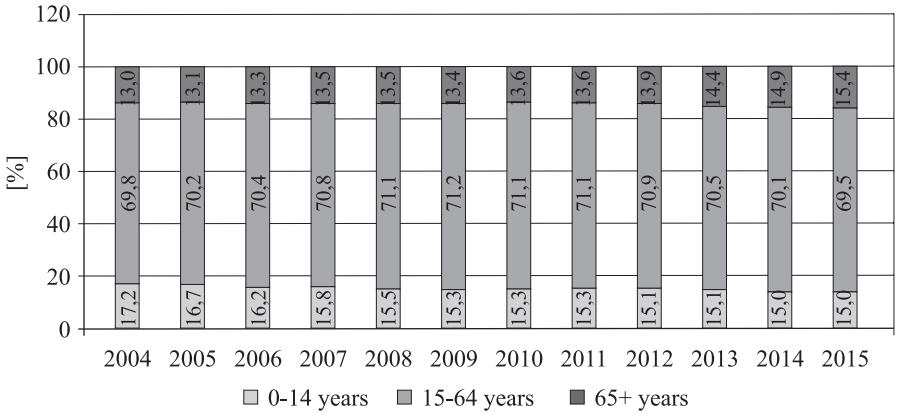
Figure 4. Demographic structure in Poland in 2004-2015



Source: own elaboration.

of beneficiaries of public finance due to the phenomenon of ageing of the society. This group benefits from pension schemes, health and social care and nursing insurance. One also needs to bear in mind that the growing fiscal burden influences the young generation's decisions concerning leaving the country in search of better life and work conditions. That is why financing science and R&D cannot be considered an opportunity for the country's economic development as the economy based on modern technology cannot function properly without sufficient labor resources.

The process of ageing of the society in Poland is clearly related to the increase in the demographic burden with people at the post-productive age.

This will inevitably hinder proper functioning of the pension system which is based on the principle of intergenerational solidarity. The result of the increase in the numbers of elderly people is the intensified demographic burden with the people at the post-productive age.

Demographic prognoses indicate explicitly that the number of working people in Poland will diminish from 7 million to 4.3 million (by 40%) by the year 2060. Inverse relationship will be observed in the group of elderly people as their numbers will grow to 9.5 million by the year 2060 [CSO 2015]. The data indicate that it is the demographic burden with elderly people that is the major obstacle to the economic development of the country. One should especially take into consideration the pension scheme as it is the contributions of the working people that are used to make payments for the retired. This means that public expenditure on elderly people is higher than the expenses on the young. The expenditure on the retired is getting higher and higher every year (Figure 5).

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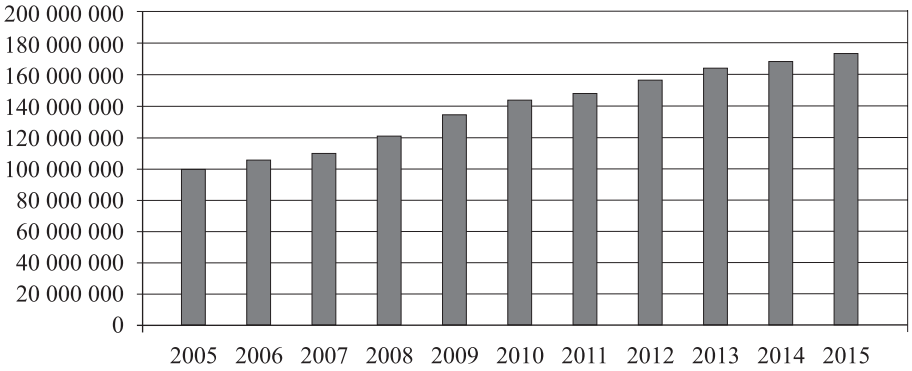
Elderly people use public finance to a large extent as they "consume" social benefits (one needs to bear in mind that the benefits they use are really costly).

Figure 5. Pension expenditure in Poland in 2004-2015 (PLN)



Source: own elaboration.

At the very moment when a person retires he or she stops being active in professional terms. Prior to that they earned money and paid taxes. Now they are dependent on social benefits. All this makes budget income fall and public expenditure rise [Jurek 2012].

Social expenditure constitutes the highest share in the public expenditure and within the social expenditure the biggest share is formed by pensions – 52.6% and health care – 25.3%. It is predicted that in the following years, that is by the year 2020, this expenditure will systematically grow and will be, respectively, 53.8% and 25.4% [CSO 2014], which is connected with the ageing of the society, that is the growing numbers of retired people.

Table 1. Structure of social expenditure in 2014-2020 (%)

Country	2014	2016	2018	2020
Total social expenditure	100.0	100.0	100.0	100.0
Pensions	52.4	52.6	53.1	53.8
Health care	25.1	25.3	25.3	25.4

Source: own elaboration on the basis of *Projekcja wydatków socjalnych na lata 2014-2020*.

It is necessary for the proper functioning of the economy that the costs of social care are financed with the current budget revenue. However, in the country in which the population is getting older the expenditure is growing much faster than the income from taxes and contributions. Under these circumstances it is

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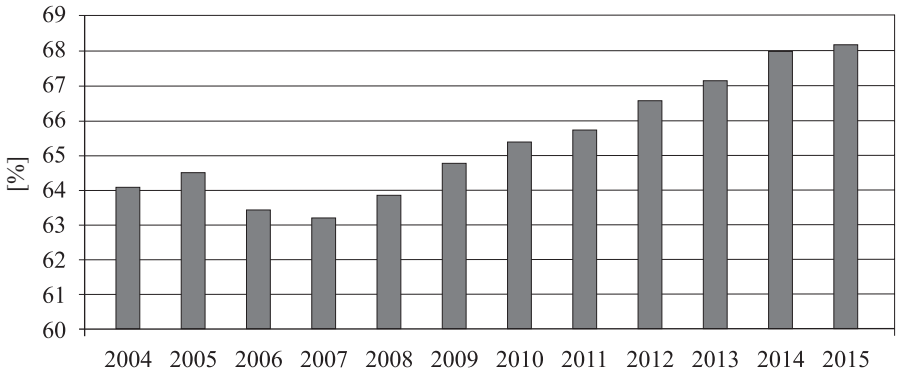
necessary to use public debt.[1] Demographic part of this debt refers to the fact that pension scheme is burdened with the growing number of elderly people when compared to the diminishing numbers of young people.

Lengthening human life span means that one can live to the very old age, for the country, however, that means increasing expenditure on health and long-term care. All that results from the change in the family model, in which due to the low fertility rate, it is the state that needs to take care of the senior citizens. The data gathered by the Polish Central Statistical Office indicate that the number of nursing homes and hospices is still growing, which results from the growing social demand connected with the process of ageing of the society.

Figure 6. Professional activity rate in Poland in 2004-2015



Source: own elaboration.

Because of the observed and forecasted unfavorable changes in the demographic structure of the population it is high time to pay full attention towards the lengthening of the working life, especially of the people at the mobile age and in this way prepare labor resources and the economy for the future changes. Therefore, one should consider the professional activity rate changes.

Professional activity rates in all the considered periods never exceeded 70%. This confirms the necessity of changes in the attitudes towards increasing professional activity, as the current situation has a very unfavorable effect onto Polish economy. In the near future companies might face the lack of well-prepared and sufficient labor resources.

[1] The term "pension liabilities" is also found in the subject literature. It comprises demographic, political and pension elements.

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Conclusion

The dynamics of the changes in the demographic structure of the population are justified by the changes in the family structure and longer life span together with the lack of intergenerational solidarity.

These demographic changes influence to a much bigger extent the public expenditure when compared to the public income. Elderly people generate much higher costs when compared to the young. This implies that the period during which pensions are paid is longer and the health care expenditure is higher. In the near future this will lead to introducing restrictions on other public expenditure and to the increase in the sums paid as pensions.

Changes significant to the economy stemming from the transformation of the demographic structure of the population have been observed in Poland. Demographic changes have a significant influence onto the labor market and require undertaking activities that would lead to the increase in the professional activity. Lengthening the period of professional activity seems to be inevitable and such actions should be taken into consideration in the country's macroeconomic policy. Current demographic changes influence both the labor market and social security system.

Changes in the demographic structure of Polish population began together with the system transformation in the last decade of the 20th century, however, their peak was observed at the beginning of the new century. That was the emergence of a totally new demographic structure of the country characterized by the low birth rate ratio and lengthening of the average life span.

The mentioned above changes influence the country's economic development to a great extent. Information on the population age structure is the basis for determining future potential labor resources. Forecasts prepared by the Polish Central Statistical Office (CSO) indicate explicitly that after 2025 elderly people will constitute more than 30% of the population [CSO 2015] and this number will continue to increase to the level of almost 35% in 2050 [CSO 2015], which might have an unfavorable effect onto functioning of Polish economy.

The growing number of people over 65 is connected to the public finance inefficiency and the growing consumption by senior citizens. On the other hand, however, the process of ageing of the society can have a positive effect and develop as a new strategy aimed at satisfying the needs of the elderly by means of creating special products and services designed for this age group.

In the ageing society, elderly people should be considered as a productive social group that can be useful for the rest of the population. Therefore, exploiting the elderly people's experience is so significant. Economy needs to be prepared for the challenge of presence of the elderly on the labor market both as work-

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ers and as major consumers. The stereotype of an elderly person will need to be changed as this group will soon constitute a significant group of consumers with growing possibilities and needs.

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Wpływ zmian demograficznych na rozwój gospodarki narodowej

Streszczenie. *Współczesne trendy demograficzne odnoszące się do zjawiska starzenia się społeczeństwa skłaniają do analizy skutków zapaści ludności i ich wpływu na gospodarkę narodową. Problem zmian demograficznych nie dotyczy jedynie obserwacji związanych z przyrostem naturalnym, trwaniem ludzkiego życia czy migracją, dodatkowo odnosi się do zjawisk ekonomicznych, gdzie wzajemne powiązania o charakterze demograficzno-ekonomicznym stają się oczywiste. Ujęcie makroekonomiczne definiuje bowiem związki zachodzące między rozwojem demograficznym i społeczno-gospodarczym państwa. Badania w tym zakresie przedstawiają szeroką bazę informacji na temat wpływu zmian demograficznych ludności na rozwój gospodarki narodowej. Celem niniejszego opracowania jest przedstawienie wpływu zmian demograficznych na gospodarkę Polski. Okres badawczy obejmuje lata 2004-2015. Zakres opracowania to przegląd literatury oraz zgromadzenie materiałów źródłowych, które zaprezentowane zostały w części empirycznej.*

Słowa kluczowe: *struktura demograficzna, gospodarka narodowa, starzenie się, ludność*

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