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DEMOGRAPHIC RISK AGAINST INSURANCE SYSTEMS IN SELECTED EU COUNTRIES

1. Introduction

In the time of common union aspiration aiming at legal standardization within the scope of various administrative actions, the attempt to create a homogenous insurance market in the area of social insurance seems to be proper. The basics for functioning of such an insurance market would be, above all, common rules for pension and old-age- pension payment. These rules are now dictated by the countries' financial resources, traditions of working-class movements aiming at assuring employees' proper life standard in the period of occupational discontinuation as well as by the dynamics of demographic changes. Currently alternating structure of population age, clearly indicating the advancing process of their ageing and disappearance of generations' replaceability extorts, in a sense, a need for immediate reforms of pension systems in many countries. Currently performed reforms of functioning pension systems mainly consist in changing the principle of payments as a part of repartition systems to payments (at least partial) being a part of capital systems. Arising capital systems payments may be a germ of homogenous insurance market within the scope of social insurance.

To support the need for creation of such an insurance market it seems necessary to review currently functioning pension systems and to indicate already existing common features of these systems, as well as to minutely analyze the dynamics of population age structure changes in selected EU countries with a particular focus on adverse directions of changes concerning demographic factors that characterize **demographic risk**. Demographic analyses concerning formation of demographic risk are, above all, change dynamics of demographic factors describing population ageing process in various aspects as well as the process of population recreation (it means parity process). Demographic risk defined for social insurance purposes

means in fact disturbance of the balance between the number of insurance premium payers' subpopulation and the system beneficiaries' subpopulation.

2. The basics for functioning of pension systems in selected EU countries

For the purposes of comparative analyses in the scope of functioning of already existing pension systems in the first stage of studies following EU countries, apart from Poland, have been selected: France, Germany, Sweden, Italy and Ireland. The selection of these countries was not random. France and Germany were chosen in view of their economic power, Sweden is in many analyses regarded as a model country. Ireland is a country with a decidedly distinct demographic structure and in respect of many demographic factors changes it constitutes a contrast to European countries. The selection of Italy was dictated by a typical Polish sentiment towards this country and a decided similarity of social insurance system functioning there to the one binding in Poland. Diversity of insurance systems functioning in selected countries created the need for broadening the scope of analysis with further countries, namely, in following analyses Finland, Denmark, England, Greece and Spain were also included. Consideration of a larger group of countries enabled specification of certain similarities in functioning of pension systems.

Usually the grounds for functioning is a system based on operation of two or three pillars. It embraces following risks: old age risk, disability to work risk and breadwinner's death risk. Two-pillar-systems are as follows:

- **base system** – it means a public pension system with a guaranteed financial benefits as a part of repartition or from taxes,
- **supplementary pension system** (intracompany) – with a capital or mixed financing method; two-pillar- systems function in Sweden, Italy, Denmark and Ireland; systems based of three pillars function on the basis of three pillars and they include:
- **public pension system** (obligatory),
- **intracompany pension programme** (voluntary),
- **individual pension programmes** (voluntary),

The three pillar principle operates in Germany, Finland, England and Spain. The least ordered pension system function in France and Greece.

French insurance system is divided into four basic categories including several hundred various regimes: common system (private sector employees), special system (public system employees), non-employees non – farmers system (craftsmen, professions), agricultural system. These are equivalents of branch insurance companies. Their number equals 120 but only 15 still accept members, while the other merely pay insurance. Each of these systems functions according to distinct principles and each maintains its own privileges.

Greek pension insurance system was previously characterized by incoherence, fragmentation and chaotic structure, diversity of pension plans depending on employment sector, to the extent of offered protection and participation rules dependent on the date of acceding to a system.

In some countries there is also a kind of 'citizen' pension (Sweden, Finland, Denmark) or 'national' pension, which is paid to a person entitled to receive it on the basis of a respectively long period of inhabiting a given country (at least 3 years in Nordic countries) or after a respective period of paying premium by a working person (at least 11 years in England). Entitlement to full benefits is gained after, respectively, 40 years of inhabiting a country (Denmark, Sweden and Finland) or after paying premium for 44 years by men or for 39 years by women (England).

In some countries base benefits are supplemented with a variety of special bonuses, for example for a spouse, child, for electricity, license fee, discounts on journeys, health care, stay in foster home and holiday travels (Ireland, Denmark, England). In English pension system entitlement to pension benefits is also gained by a pensioner's spouse, which equals 60% of the benefits or 100% of the benefits after the pensioner's death. A new insurance product offered as a part of pension insurance is share insurance. It is flexible in view of premium amount paid by a member and at the same time in view of later received benefits amount.

An innovative solution in comparison with other systems is pension for the unemployed introduced in Finland, paid to at least 60-aged-person who receives unemployment benefit for not less than 500 days.

In respect of many weaknesses in functioning pension systems and in relation to the advancing process of population ageing, a decided increase of budget expenses for pension purposes is expected. Thus, there occurred a need to reform existing systems.

The reform implemented in 1999 in Sweden introduced a solution that makes pension strictly dependent on income, system rules of a defined premium were accepted and a category of guaranteed pension was considered. The new system assumes a fully flexible threshold of pension age (since being 61 years old), while work prolongation till reaching 70 years causes almost 100% increase of pension (annual 9% increase). It is to encourage people to stay longer on labor market.

In Italy a new system is highly dependent on the time of retirement- there occurs the so-called flexible retirement age. It may equal, irrespective of gender, 57 to 65 years, while an employee gains entitlement to pension if his/her pension equals not less than 120% of the minimum pension guaranteed by the country for the age of 65 years. There is also possibility to postpone retirement for about 5 years, which brings additional profits in pension amount. Pension amount is a quotient of pension capital and an average following life period at the time of retirement.

Finland introduced a range of reforms aiming at improvement of functioning insurance system. The most important are as follows:

1. Raise of actual pension age from 63 to 65.
2. Possibility of earlier retirement as well as its postponement. Earlier retirement, possible after completing 60 years old, permanently decreases pension amount, and postponement of retirement causes gradual increase in benefits amount.
3. Lower limit of earlier retirement was changed from 55 to 58 years, which decreased the number of people using this facility.

In Denmark public pension system is supplemented with a public supplementary pension system depending on pensioner's previous income. All employees pay premium in equal amounts and, similarly, benefits are of equal value. Obligation to participate in this system embraces all people between 16-66 years who work more than 9 hours a week. To stop a tendency to decrease the actual retirement age (63 years), a range of reforms concerning the functioning of previous voluntary pension system was introduced in Denmark in 2003. They aimed at maintaining as many people as possible on labor market because Denmark has a very high (one of the highest in European Union) employment rate, which is equal to low labor force resources.

Insurance system currently functioning in Great Britain does not need deep reforms. British pension insurance market is specified by a strict connection between national, intracompany and individual insurance. There is no form of earlier retirement, but it is possible to postpone it for 5 years. Retirement postponement causes its increase by about 1,7% a week, which means 7,5 % annually.

Entitlement to receive pension from public system in Greece is gained after a properly long period of participation in the system (minimum 4500 days). An employee is entitled to full benefits after working for 35 years (premium period), which means 10500 days.

Demographic changes point to Greek population ageing. Load factor is also significantly growing, which should be an impulse to take proper actions. One of these action can be increasing the percentage of employed women by means of the so called 'liberation of inactive labor force' (women raising children).

In Spanish pension system a range of new reforms aiming at improvement of this system was introduced. Main changes, worth focusing on, are as follows:

- premium surpluses are intercepted by Reserve Pension Fund, guaranteeing the cover for financial shortage in future,
- people over 65 years still continuing their work will be exempted from social insurance premium,
- the rule limiting pension benefits to 100% of the measure base was abolished for people who are over 65 years and pay premium for more than 35 years.

Average replacement rate in base system binding in currently functioning Spanish pension system is quite high and equals approximately 75% at an average pension age of 65 years.

Average replacement rate in general base systems, however, is diverse, depending on the country where it is in force:

- in Spain and Sweden it equals about 70-75% at an average pension age of 65 years,
- in Italy, according to an old system, it equaled 80% at an average pension age of 65 years,
- in England and Ireland it equals approximately 55-58%,
- in France it is highly diverse depending on the branch category from which it is paid.

3. Analysis of selected demographic factors

As mentioned above, one of the factors that significantly influences the need for changes of already existing pension systems is the change in population age structure in particular countries. As far as the issue of insurance risk, especially demographic risk, is concerned, the measures of ageing process as well as of population recreation process, which means demographic old age factors, seem to be the most important. In view of financial state of insurance entities, demographic load factors, work resources load factors, and also synthetic measure important in respect of generation replaceability, which means ratio of grandchildren to grandparents, are very important measures. Each of these listed measures is defined as a ratio of respective subpopulation number. Further factors are as follows:

- demographic old age factor:

$$W_{SD} = \frac{L_{65+}}{L_{og}},$$

- work resources load factor:

$$W_{OZP} = \frac{L_{60+}}{L_{20-59}},$$

- demographic load factor:

$$W_{OD} = \frac{L_{0-14} + L_{65+}}{L_{15-64}},$$

- synthetic measure important in view of generations' replaceability, which means ratio of grandchildren to grandparents:

$$W_{WD} = \frac{L_{0-14}}{L_{65+}}.$$

Symbols L_{m-k} , L_k indicate population number in respective age ranges or in a respective age group.

On the basis of data concerning age structure in the specified EU countries in years 1991-2005 values of mentioned factors were determined in each of the analyzed years and, basing on empirical trend lines, a range of conclusions concerning similarities and differences in formation of these measures' changes in selected countries was formulated. Geometric interpretations of particular trend lines are presented in fig. 1-4.

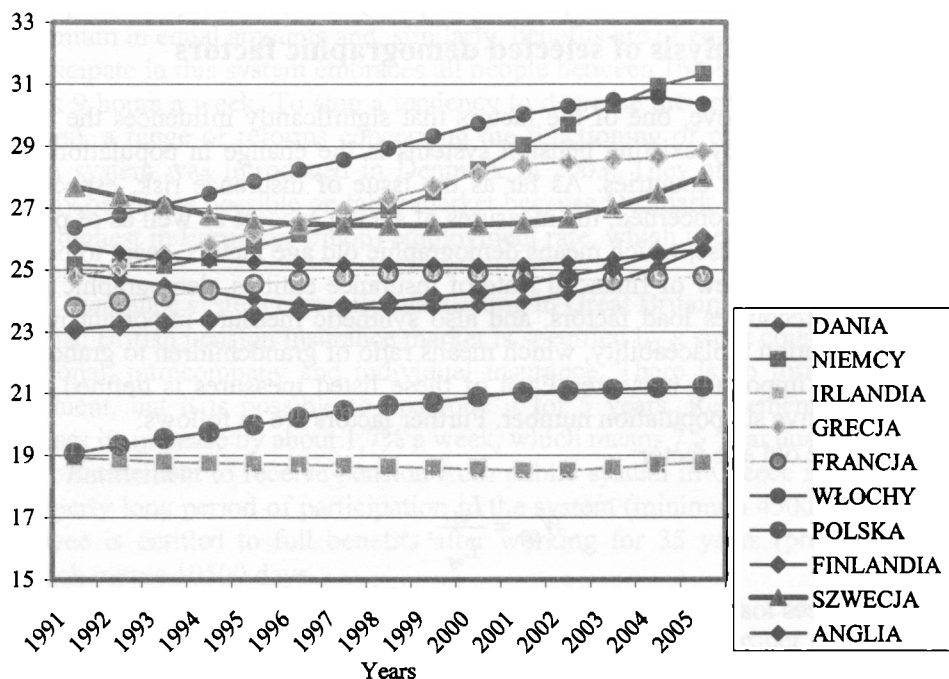


Fig. 1. Demographic old age factors in years 1991-2005 for selected EU countries
Source: Own calculations.

Dynamics of these factors' changes visible in the graph indicates a gradual increase of these factors' value for all countries, while the increase tempo is diverse. The quickest is the increase of measure value for Germany, Italy, Greece, Poland and Sweden; the slowest tempo of age measure increase is apparent for France and Ireland. Poland, in spite of intensively increasing age factor value, is included into the so-called 'young European countries' as the measure value is relatively low in comparison with other countries.

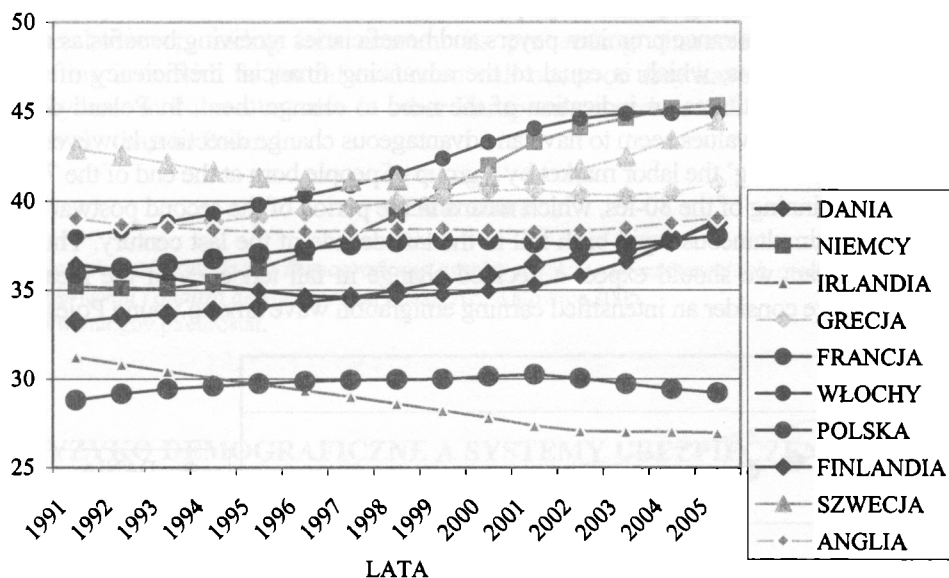


Fig 2. Work resources load factors in years 1991-2005 for selected EU countries
Source: Own calculations.

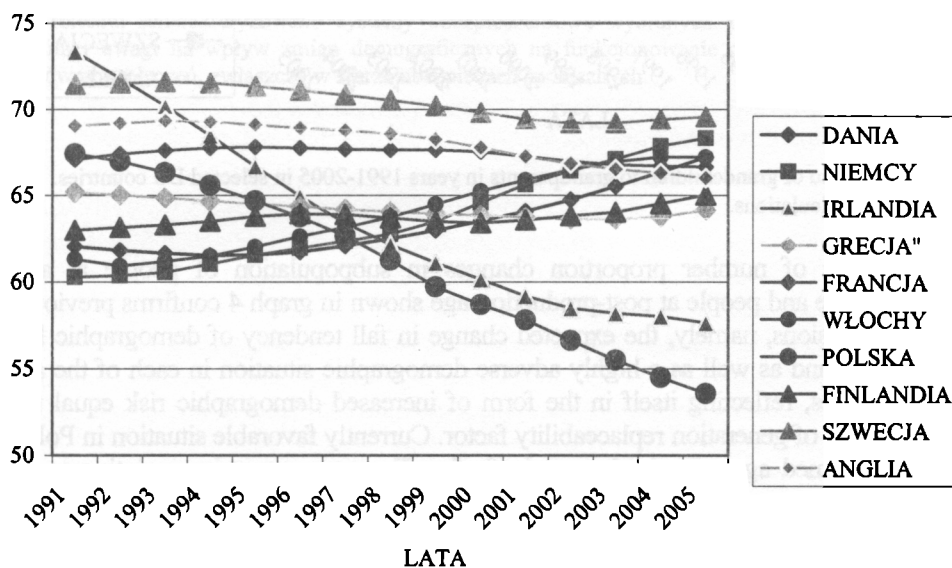


Fig. 3. Demographic load factors in years 1991-2005 for selected EU countries
Source: Own calculations.

Factors presented in graph 2 and graph 3 indicate a clear disturbance in number proportions between insurance premium payers and beneficiaries receiving benefits as a part of repartition systems, which is equal to the advancing financial inefficiency of these systems and it constitutes an indication of the need to change them. In Poland demographic load factors values seem to have an advantageous change direction, however, this is caused by 'entering' the labor market by a group of people born at the end of the 70-ies and at the beginning of the 80-ies, which means in the period of the second postwar birth height at the simultaneous rapid birth fall in the last decade of the last century. Thus, in the nearest years we should expect a decided change in fall tendency of the measure, especially if we consider an intensified earning emigration wave among young Poles.

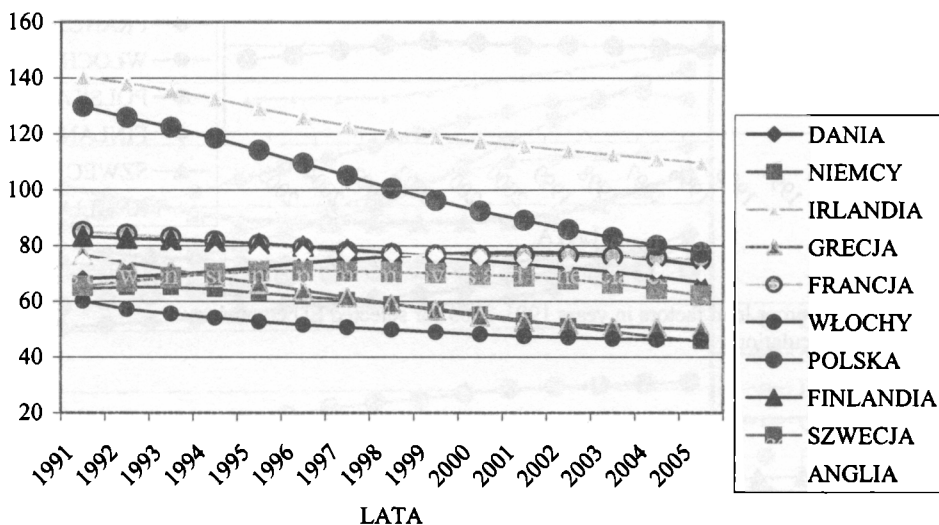


Fig 4. Ratio of grandchildren to grandparents in years 1991-2005 in selected EU countries.
Source: Own calculations.

Dynamics of number proportion changes in subpopulation of people at ante-production age and people at post-production age shown in graph 4 confirms previously drawn conclusions, namely, the expected change in fall tendency of demographic load factor for Poland as well as a highly adverse demographic situation in each of the analyzed countries, reflecting itself in the form of increased demographic risk equal to a lowered value of generation replaceability factor. Currently favorable situation in Poland is also confirmed against a background of other European countries, pointing to our country as a country of relatively 'young' inhabitants.

4. Summary

To sum up the above considerations we can state that demographic risk, which significantly influences social insurance system, is visible not only in the scale of

our country but it also occurs in other European countries. Intensity of this risk is diverse, however, taking into account its proceeding character, problems with weakening it or with its partial exclusion will occur or they have already occurred not only here in Poland but also in other European countries, and many a time more intensively than in Poland.

Literature

- [1] Balcerowicz-Szkutnik M., *Demograficzne aspekty ryzyka w ubezpieczeniach społecznych. Uwarunkowania i analiza demoekonometryczna*. AE, Katowice 2005.
- [2] www.stat.gov.pl/eurostat.

RYZIKO DEMOGRAFICZNE A SYSTEMY UBEZPIECZENIOWE W WYBRANYCH KRAJACH UE

Streszczenie

W referacie przedstawione zostały wyniki analiz statystyczno-demograficznych dotyczących szeroko rozumianego ryzyka demograficznego przejawiającego się w zmiennej dynamice podstawowych współczynników demograficznych, a mianowicie współczynników starzenia zarówno demograficznego, jak i zasobów pracy oraz zmiany proporcji liczebnościowych wybranych subpopulacji ludności. Analizy przeprowadzono zarówno dla Polski, jak i dla wybranych krajów UE. W uzupełnieniu referatu scharakteryzowano systemy ubezpieczeniowe wybranych państw ze zwróceniem szczególnej uwagi na wpływ zmian demograficznych na funkcjonowanie obecne i przyszłe tych systemów ubezpieczeń, zwłaszcza w sferze ubezpieczeń społecznych.