THE AGE AT RETIREMENT IN POLAND

Abstract

According to a popular opinion, in today's Poland the age at retirement is a political category rather than an economic notion. It is so, because people using this term are excessively attached to laws defining the statutory pensionable age (60 years for women and 65 for men, respectively). They seem to forget that the actual retirement age, i.e. the age at first pension, rarely corresponds to its statutory level. The basic requirements that a person has to meet in order to receive a pension at some earlier or later date in the lifetime are more important than the statutory limits. It is the requirements – and a special treatment in some cases – that provoke a persistent and fierce struggle in the Parliament and sometimes even in front of it (see the miners' case).

This paper intends to examine the evolution of the actual retirement age in Poland over the last dozen or so years so, with respect to persons insured by the Social Insurance Institution (Zakład Ubezpieczeń Społecznych – ZUS) (thus part of country's population insured by the Agricultural Social Insurance Fund (Kasa Rolniczego Ubezpieczenia Społecznego – KRUS) and persons deriving pensions from special schemes (the military, police force members, clergymen) are left outside its scope).

1. THE ACTUAL RETIREMENT AGE - COMMENTS

The pensionable age is determined by many factors, among which laws operated in a country are certainly the most important. Laws typically break the pensionable age into three categories [Urbaniak, 1998]: the minimum retiring age that makes a person eligible for a usually reduced pension, the normal age, when an individual becomes fully entitled to a pension, and the maximum retiring age that makes withdrawal from the labour market mandatory. Legislation usually defines the first two age categories, but the third one sometimes remains unspecified.

The minimum and maximum age limits define an age interval, within which a worker may independently choose the moment of leaving economic

activity behind. This interval contains the actual retirement age at which workers in a given country typically become inactive.

The minimum age is fixed by laws that lay down the conditions for early retirement. They are linked to retirement privileges, which are conferred to certain groups of workers, to those related to workers' sex (women), to accomplishments in the working life and other (miners and veterans), or to the urge to attain ad hoc goals in the economic, or social policy (e.g. the combating of unemployment).

Today, in a growing number of cases the normal pensionable age becomes equivalent to the maximum retiring age. Most countries abide by the rule that the right time to make a worker retire is the moment, when the person becomes entitled to a full pension. Although several OECD countries (USA, Sweden, Japan, Canada, Spain, Finland, Greece) have implemented a system based on the actuarial calculus to encourage workers to postpone their withdrawal from the workforce beyond the normal retiring age, thus to enjoy higher pensions at older age(the new Polish pension system assumes the same solution), when life expectancy is shorter the applied adjustment rates do not ensure the solution's neutrality for the potential beneficiaries (higher pensions do not fully compensate for the shorter drawing period) [OECD, 1999].

2. BASIC DATA ON PENSIONERS IN POLAND² BETWEEN 1992 AND 2004

This study aims to discuss changes in the average retiring age and to examine the relationship between that age and the pension-drawing period based on data provided in the life expectancy tables. Accordingly, in the next

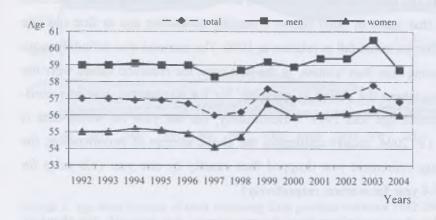
In the social security system, the actuarial approach relates the amount of pension to age at retirement, i.e. to the pension-drawing period derived from the life tables. The later the moment of final withdrawal from the workforce, the shorter the pension-drawing period. To encourage late retirement, a pension paid to a worker retiring at age x is higher than a pension paid to a person with the same professional career who decided to retire at age lower than x years.

² All data referred to below were derived from *Roczniki Ubezpieczeń Społecznych* (Social Insurance Yearbooks) published by ZUS, or from annual reports available on the institution's website *Ważniejsze informacje z zakresu ubezpieczeń społecznych* (Major Information on Social Insurance) [ZUS, 1997, 2002, 2004a, 2004b, 2005]

sections of the paper we shall present first how the age evolved over the period of dozen or so years and how its variations influenced the age distribution of all pensioners drawing benefits in a given period. Because men and women have to meet different criteria to be eligible for a pension (such as minimum age, minimal number of years worked), the investigated subject will always be treated separately for each sex.

Let us examine then the evolution of the average age at first ZUS-paid pension over the last dozen or so years in the group of men and women, respectively (Graph 1)³.

Graph 1. Average age of person at first pension, years 1992-2004



The first striking feature of the data above is that the retirement age considerably diverged from the statutory limits (60 years for women and 65 for men, respectively) throughout the analysed period, notwithstanding certain changes in the values. That groups privileged by the lawmaker retired at definitely younger age than other persons⁴ did was not the only reason for this.

To supplement the data we need to add that between 1990 and 1992 the average age at first old-age pension was 52.4 years for women and 57.8 years for men, respectively [Szukalski, 1999: 76]. That low age expressed the government's belief that "older workers' withdrawal from the labour market is a key measure allowing to check unemployment growth." This policy turned out very costly and its abandonment very difficult for political reasons [UNDP, 1999: 78].

For instance, in 1996 the average age at first pension was 47.6 years for miners and 52.6 for teachers, respectively [Szukalski, 1999: 76].

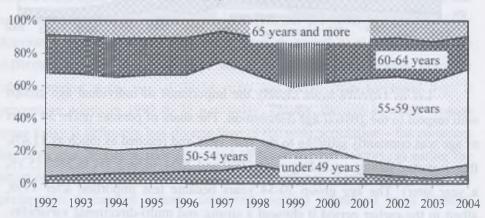
Another reason was that the early retirement option continues to be treated in Poland as a valuable privilege. Even though women decided earlier to swap their professional careers for ZUS benefits, which is quite obvious, the difference between the actual and statutory retirement age was typically 6 years for men and 4-5 years for women. Besides, in the retirement age evolution we can distinguish three subperiods. Subperiod 1 stretches from 1992 to 1996. It is marked by a stability of the moment in life, when one decides to withdraw from the workforce. In this subperiod, the retirement age oscillated around 55 years for women and around 59 years in the male population. The next subperiod is years 1997-1999, when the retirement age first slightly dropped (in 1997), to rise quickly (by two years for women and almost a year among men). The third subperiod that starts in 2000 shows a steadily ascending age at first old age pension, after its initial fall in relation to 1999. The increase was definitely more distinct among men than women; in the first case, the recorded values were the highest throughout the period in question, but for women the year of recordhigh retirement age was 1999. Unfortunately, the last year for which data is available, i.e. 2004, clearly challenges the above attempt at periodization; the total average retirement year dropped then exactly by one year (1.8 years for men and 0.4 year for women, respectively).

The above variations have diverse sources, but primarily the changing laws that in some years allowed one-time relaxation of the old age pension criteria, for instance, by providing so-called "bridge pensions" that encourage persons endangered by long-term unemployment to become regular pensioners after meeting some minimal criteria. Another important factor is demographic circumstances, namely the baby boom or baby slump generation reaching the typical retirement age. Even if the same retirement age distribution were assumed for every generation, the sizes of individual cohorts would produce variations in average age at first old age pension. Consequently, the reaching of a typical retirement age by the baby slump generation born during WWII will raise the average age at retirement (because generations born in the inter-war period are more sizeable and their still working representatives retire at older

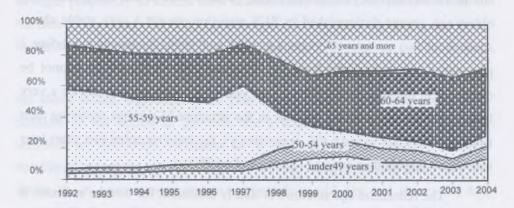
then the average age is automatically reduced by the post-war baby boomers' reaching the age of 55-60 years.

The change in the age distribution of persons becoming beneficiaries of the pension system is closely related to variations in the average age at withdrawal from the workforce due to becoming eligible for the ZUS pension (Graphs 2, 3 and 4).

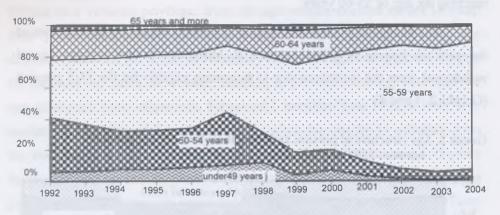
Graph 2. Age structure of persons receiving their first old age pension between 1992 and 2004 (%)



Graph 3. Age distribution of men receiving first pension between 1992-2004 (%)



Graph 4. Age distribution of women drawing first pensions between 1992 and 2004 (%)



Let us examine more closely the importance of individual age groups with respect to the general age distribution. The share of persons under 50 years of age was constantly growing to the year 1998 and reached as much as 11.4%, then it started falling, excluding years 2000 and 2004, to be 3.3% in 2003 (5.1%) a year later). The age group 50-54 years became less important after 1998, albeit in the earlier period it showed a strong and multi-directional variability. Throughout the period in question, the age group 55-59 years clearly dominated. Only between 1998 and 1999, the group made up less than 40%, and in the last several years most retiring persons were in this age group. Two oldest age groups distinguished in ZUS statistics present a very stable share. Apart from two exceptional years, i.e. 1997 and 1999, deviations exceeding 2 percentage points from the levels of 25% and 10%, respectively, cannot be observed. In the latter case, although the year 1997 was characterized by a very low proportion of the oldest persons in the structure of persons receiving their first pensions (18.6% and 6.4%, respectively), the level recorded two years later was clearly higher than average (25.9% and 14.7%).

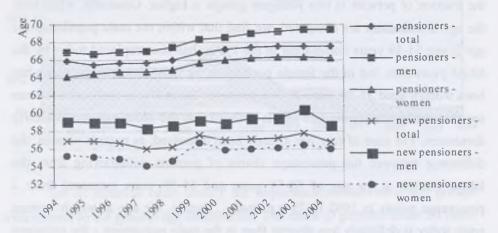
The retirement age structure is clearly dissimilar for women and men. It is due to the different basic statutory requirements regarding the minimum retirement age and years of service that both sexes have to meet. As a result, for the most part of the analysed period the fraction of persons in two younger age

groups was definitely higher among women, whereas in the population of men the percentage of individuals aged at least 65 years was invariably higher, initially several times higher and recently a dozen or so times. However, last years changed this commonsense structure - today it is the group of men, where the fraction of persons in two youngest groups is higher. Generally, when both the age distributions are compared, we find that within the male population the age group 55-59 years dominating in the 1990s, has been replaced today by the 60-64 years olds, but in the female population the most sizeable age group has been women aged 55-59 years at first pensions. Secondly, in both cases we can see that the typical retirement age is delayed, i.e. the older age group clearly dominates. The case of men has already been discussed; as regards women, the difference between the percentage shares of persons withdrawing from the labour market at the age of 50-54 years and 55-59 years increased from 2 percentage points in 1992 to 75 p.p. today. Thirdly, the age at which women retire today is definitely less diverse than in the male population – the comment has been true, however, only since mid-1990s of the last century, as earlier the situation was the other way round for two reasons. Firstly, the system of preferential retirement criteria favouring persons employed in a harmful working environment (e.g. miners) affected more strongly men than women and, secondly, self-employment was definitely more popular in the male population (company and farm owners working on their own account show a stronger propensity to extend their economically active life, partly because of the lack of superiors who might "encourage" them to retire and partly due to the higher satisfaction they derive from being active).

Obviously, the average age of all persons drawing pensions exceeded the above values, regardless of the year an individual had become entitled to a pension. In the period in question, the average age of pensioners was less sensitive to short-term variations, as it depended on the "inflow" of new beneficiaries only to a limited degree. Mortality changes taking place over the dozen or so years among persons approaching old age and those that had crossed the line affected the evolution of the average value definitely more strongly.

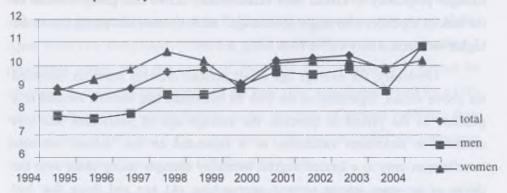
Let us first take a look at variations in pensioners' average age vis-a-vis average retirement age (Graph 5).

Graph 5. Average age of old age pensioners and "new" pensioners (persons drawing their first pensions) by gender, years 1994-2004



As we have already mentioned, even though the average age at first pension was changeable and subject to considerable variations (albeit generally showing a slight growth trend), the other variable being compared here presented a steady, but gradual rise in the age, except for the last three years of the 20th c.

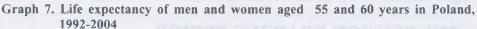
Graph 6. Difference between average age of old age pensioners and average age at first pension, years 1994-2004

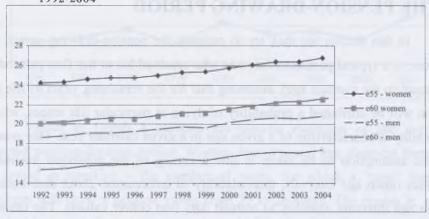


Because the two changes, not always unidirectional, coexisted, the difference between the average age of pensioners and the average age at first pension showed a considerable variability. However, in the analysed period the difference was marked by a clearly upward trend, despite the aforementioned generally growing retirement age as a result of changes in older persons' mortality.

3. CHANGES IN OLDER PERSONS' MORTALITY

As we have said, the actual retirement age was definitely lower (at least by several years) throughout the analysed period than its statutory limit, and relatively constant. To identify how changes in mortality affect the period of drawing the life-granted pension, let us start by presenting changes in life expectancy of men and women aged exactly 55 and 60 years (Graph 7). There are two reasons for this approach. Firstly, in the examined period the average age at first pension was close to these numbers. Secondly, only the abbreviated life expectancy tables are available for early 1990s of the last century, as full life tables have been calculated and published on an annual basis since 1996 only. Our source of data represented in Graph 7 is values published by the GUS in the abbreviated and full life expectancy tables covering the last dozen or so years.





Between 1992 and 2004, life expectancy at birth generally increased from 75.7 to 79.23 years for women and from 66.71 to 70.67 years for men, i.e. ca 3.5 and 4 years, respectively. The reason was declining mortality at each age (although not in every successive year), including the population of old persons and those approaching old age. Because of that, the life expectancy of persons aged 55 years and 60 years largely extended – by ca 2-2.5 years. Although male life expectancy at birth increased more, among older persons a larger growth in the number of years still to live was found for women (for the 55 years olds the growth was higher by 0.33 year and for those aged 60 years it was 0.47 years).

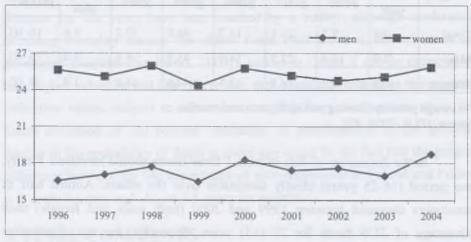
Generally, mortality declining among old persons because of the extended old age – assuming other changes – automatically and considerably lengthened the pension-drawing period. Among the 60 years olds, the period increased 30.4 months for women, but only 26.1 months for men. This means that the explicitly positive mortality trends (related to the fast growing life expectancy and falling mortality at each age, after almost three decades of stagnation in this area) increase the burden resting on the pension system in two ways. Firstly, because of the growing number of individuals expected to survive the whole period of economic activity (lower mortality at young age, middle age and prior to old age). Secondly, the pension-drawing period is becoming longer, because of the progress in reducing old persons' mortality.

4. THE PENSION-DRAWING PERIOD

In this section we shall try to estimate the pension-drawing period for the case of a typical pensioner (i.e. one who received his or her first pension at age equal to the average age), assuming that for the remaining years of life the person will be attributed a probability of dying at particular life stages, which probability is characteristic of a given age in a given calendar year. One reason for the assumption to be taken is low accuracy of the published insurance statistics (open age intervals, unavailability of information about distributions within age intervals, inability to convert data into cohort values). The other is that the generation life tables are not available in Poland, only the period life

tables are obtainable, based on cross-sectional data derived from a given calendar year.

Such limitations impair the quality of the calculations below, as we need to bear in mind that references to the cross-section data make calculations more vulnerable to errors produced by some extraordinary legislative events (affecting mainly the average retirement age) and by natural events (that exert certain influence, although limited and declining in the recent years, on the evolution of mortality). The values arrived at must always be given conditional interpretations – they indicate the number of years for which a "new" pensioner, typical of a given year, may draw a benefit, assuming that mortality in the next years of the person's life will be the same as in a given calendar year. Calculations presented below are broken down into men and women, because they have different probabilities of survival at old age and different retirement age limits.



Graph 8. Expected pension-drawing period, years 1996-2004

Values in Graph 8 indicate sex-specific evolution of the average expected pension-drawing period. Women do not reveal any clear-cut trend in the period in question — the number of years, for which a "new" female pensioner will draw a pension varies from 25 to 26 years. The reason is, as it has already been indicated, the upward trend of the female retirement age in the

recent years. The life expectancy increase is thereby "consumed" by older retirement age. As for men, although the average age at final economic deactivation has been growing in the recent years as well, the process has been definitely less dynamic. Consequently, longer life expectancy more than compensated for the increase in the actual retirement age, with the resulting distinct lengthening of the expected pension-drawing period. It is easy to guess that the declining average age at first pension observed in 2004 rapidly stretched the period in which pensions are drawn.

To complete the above data, we are presenting the 1999-2000 information on the duration of the pension-drawing periods calculated on the basis of death statistics on persons with ZUS pensions (table 1).

Table 1. Length of the pension-drawing periods for persons deceased between 1 Oct. 1999 and 30 June 2000 (%) and the average pension-drawing period

Category	Less than a year	1-5 years	6-10 years	11-15 years	16-25 years	26-35 years	36 years plus	Average period *
Total	0.9	8.7	21.1	14.2	44.0	10.3	0.8	16_03
Men	0.9	10.0	23.5	14.9	43.7	6.6	0.4	15_02
Women	0.8	6.5	16.8	13.1	44.6	16.8	1.4	18_02

^{*} Average pension-drawing period in years and months. Source: [ZUS, 2004: 49]

In the discussion of data in table 1 three issues should be raised. Firstly, one period (16-25 years) clearly dominates over the others. Almost half of pensioners deceased between 1999 and 2000 (both male and female) took advantage of ZUS funds for 20 (±5) years. Secondly, the age distribution definitely favours women over men. Men show a distinct overmortality in the first age groups of pensioners, whereas in the group of women a clear overmortality only appears, when the pension is drawn for at least 26 years. Thirdly, albeit the second observation is directly linked to the fact that the average pension-drawing period is three years longer for women than men, the

difference is smaller than that between average retirement ages noted in the period in question. The latter difference takes values in the interval 3.3-4.2 and usually oscillates around 4 years except for 1999 and 2004, when it was 2.5 and 2.7 years, respectively.

It should be remembered, however, that the above values are inherently different – the above estimates of the pension-drawing period are based upon periodical tables describing population whose age corresponds now to the average retirement age, that is persons born some 55 years ago (women) or 59 years (men). The population of the deceased, however, includes individuals who retired 15, 20 and 25 years ago and were at different ages at first pension. Therefore, it comprises persons belonging to different generations that, generally speaking, showed lower probabilities of living through the old age than those recorded in the recently published life tables, because of the aforementioned evolution of mortality.

Also the expected pension-drawing period estimated in this section is burdened by an error resulting from the reference to the cross-section life tables. Because the last years have been marked by a visibly, although moderately declining mortality among the oldest Poles (this trend is distinctive in all developed countries [Szukalski, 2003]), values in Graph 8 can be expected to take higher values in real life. Therefore, they should be treated as the minimal indicative values subject to adjustments arising from assumptions about the future evolution of old persons' mortality. A manifestation of the possible decline in the probability of death at older age might be the fact that the present difference between the life expectancy of sixty-years-olds in Poland and France is 3 years for men and almost 3.5 years for women.

5. FINAL COMMENTS

This study aimed to present basic information about the retirement age of the ZUS-insured persons in Poland over the last dozen or so years and the related changes in the pension-drawing periods and in the age structure of pensioners.

The presented data indicates that throughout the period in question the actual age at withdrawal from the workforce was definitely below the statutory age. The typical difference was 4-5 years and 5-6 years for women and men, respectively. The difference was partly due to the fact that some persons among the retiring population were privileged by the legislation, because of the conditions they had worked in, or due to the power of their political pressures (miners, teachers). The second reason was the labour market condition – persons at risk of long-term unemployment and already eligible for an old age pension viewed this option as an unbeatable alternative and the state agencies many a time treated the pension system as a safety valve releasing the social pressure, when unemployment of young persons was growing high⁵. The third reason was the popular belief that the right to early retirement was a privilege paid for by the long years of service for low wages.

Continuation of as low actual retirement age as that in Poland today is related to the high-cost pension system. The costs are even growing, because since 1993 we have witnessed decreasing mortality at each age, which translates into longer pension-drawing periods. Between 1992 and 2004 life expectancy of persons at typical retirement age extended by 2-2.5 years. With unchanged number of years worked, the ratio of the number of years worked to the expected pension-drawing period is deteriorating. This phenomenon actually took place in the case of men, but in the case of women – because of the escalating economic activity of women in 1970s and 1980s – the number of years worked by those retiring today is around 2 years longer compared with their counterparts' in early 1990s.

The building up fear of excessive pension systems' operational costs gave rise to the reform of 1999 that introduced the element of actuarial fairness.

⁵ It should be remembered though that the opinion about young unemployed workers taking over jobs abandoned by early pensioners is an illusion. Empirical surveys conducted in the West European countries indicate that jobs done by older workers typically show low compatibility with other jobs in an enterprise (in terms of the "capital to labour ratio") and thus they are doomed to be liquidated once a worker quits [Gesano, 1999].

It is difficult to give a straight assessment of how the Polish society, attached to the early retirement privilege, judged the reform's assumptions. There are many indications though that at least in some European countries societies are becoming increasingly aware that the pensionable age must be raised, even if in the recent years the countries have lacked effective measures designed to delay the actual retirement age⁶.

Although Poles themselves believe that the early retirement option is partly a merited and valuable privilege, and partly a necessity arising from the unfavourable labour market developments that require more room to be made for the younger workers, some researchers investigating social phenomena claim that early and final retirement is a reason for social exclusion of old Poles. For instance, B. Szatur-Jaworska [2004] openly stated that half-forced and half-voluntary early withdrawal from the workforce – additionally compelled by workers' low level of education and thus insufficient background to operate technologically advanced tools in the workplace – is among the main reasons for the exclusion of older persons. Low average retirement age makes the number of years worked relatively shorter, which directly affects the amount of pension to be drawn and thus old persons' value as consumers.

Data presented in this study concerns only persons insured by the Social Insurance Institution (ZUS). If the uniformed services members were added, subject to special treatment, the actual retirement age would slightly drop. On the other hand, if data on persons employed in agriculture and covered by the Agricultural Social Insurance Fund were included, the age would go up,

⁶ Austria can be a case in point here. In 2001, 20% of respondents agreed to raise the pensionable age and 36% to tighten up the early retirement option; the shares were much higher than in the 1991 survey. At the same time, when the actual retirement age in Austria changed only slightly between 1991 and 2001 (generally from 57.6 to 58.0 years; from 58.3 to a 58.7 for men and from 57.3 to 57.5 years for women, respectively), values of the desirable age grew considerably (from 56.1 to 57.0 years, from 57.3 to 58.1 years and from 54.7 to 55.4 years, respectively), but mainly the expected age values (from 60.7 to 61.8 years, from 62.3 to 63.0 years, and from 58.0 to 60.1 years, respectively) [Schimany, 2003].

because of the definitely more intense economic activity of older persons working in agriculture [Kosturbiec, 2004].

For obvious reasons, the 1999 reform did not affect the retirement age. Its major goal was introduction of strong incentives encouraging a possibly late economic deactivation. Hopefully, when the post-war baby boomers still entitled to the old legal solutions (translating into a relatively low actual retirement age) reach the normal pensionable age over the next several years, the trend to raise the age will appear. Such a trend would be favourable for both the long-term balance of public finance and the living standard of individuals retiring after an extended period of working life, in which they saved for a decent old age.

Bibliography

- Gesano G., 1999, Who is working in Europe?, [in:] European populations: Unity in Diversity, vol. I, European Population Conference 1999, EAPS, Kluwer Academic Publishers, Dordrecht–Boston–London, 77-139
- Kostrubiec S., 2004, Czynniki różnicujące aktywność zawodową osób starszych (Factors Varying Economic Activity of Older Persons), [in:] PTG OM (Polskie Towarzystwo Gerontologiczne Oddział Mazowiecki), Samodzielność ludzi starych z perspektywy medycyny i polityki społecznej. Dotychczasowe doświadczenia UE i Polski. Materiały konferencyjne (Independence of Old Persons in Medical and Social Policy Terms. Present EU and Polish Experience. Conference Proceedings), Warsaw, 203-211
- OECD (Organization for Economic Cooperation and Development), 1999, A quel moment partir a la retraite?, "Problemes economiques", no. 2.608
- Schimany P., 2003, Attitudes to Policy on Ageing, paper presented at the European Population Conference, Warsaw, 26-30 August 2003
- Szatur-Jaworska B., 2004, Czy ludzie starzy są w Polsce zbiorowością zmarginalizowaną? (Are Old People in Poland a Marginalized Population?), [in:] PTG OM (Polskie Towarzystwo Gerontologiczne Oddział Mazowiecki), Samodzielność ludzi starych z perspektywy medycyny i polityki społecznej. Dotychczasowe doświadczenia UE i Polski. Materiały konferencyjne (Independence of Old Persons in Medical and Social Policy

- Terms. Present EU and Polish Experience. Conference Proceedings), Warsaw, 153-168
- Szukalski P., 1999, *Zmiany wieku przechodzenia na emeryturę* (Changes in the Retirement Age), Gospodarka Narodowa", no. 10, 69-78
- Szukalski P., 2003, *Trwanie życia osób starych w Europie na przełomie XX i XXI wieku* (Life Expectancy of Old People in Europe at the Turn of the 20th and 21st c.), "Gerontologia Polska", vol. 11, no. 2, 55-62
- UNDP (United Nations Development Programme), 1999, Raport o rozwoju społecznym. Polska 1999. Ku godnej, aktywnej starości (Report on Social Development. Poland 1999. Toward a Decent and Active Old Age), Warsaw, 130 pages.
- Urbaniak B., 1998, *Praca zawodowa po przejściu na emeryturę* (Economic Activity After Retirement), Wyd. UŁ, Łódź, 399 pages.
- ZUS (Zakład Ubezpieczeń Społecznych), 1997, Rocznik Statystyczny Ubezpieczeń Społecznych. System pozarolniczy, 1990-1995 (Social Insurance Statistical Yearbook. The Non-Agricultural System, 1990-1995), Warsaw, 214 pages.
- ZUS (Zakład Ubezpieczeń Społecznych), 2002, Informacja statystyczna o systemie ubezpieczeń społecznych. System pozarolniczy, 1996-1998 (Statistical Information on the Social Insurance System. The Non-Agricultural System, 1996-1998), Warsaw, 233 pages.
- ZUS (Zakład Ubezpieczeń Społecznych), 2004a, Rocznik Statystyczny Ubezpieczeń Społecznych. System pozarolniczy, 1999-2002 (Social Insurance Statistical Yearbook. The Non-Agricultural System, 1999-2002), Warsaw, 202 pages.
- ZUS (Zakład Ubezpieczeń Społecznych), Departament Statystyki, 2004b, Ważniejsze informacje statystyczna z zakresu ubezpieczeń społecznych (Fundusz Ubezpieczeń Społecznych), 2003 r. (Major Statistical Information on Social Insurance (the Social Insurance Fund) 2003), Warsaw, 45 pages.
- ZUS (Zakład Ubezpieczeń Społecznych), Departament Statystyki, 2005, Ważniejsze informacje statystyczna z zakresu ubezpieczeń społecznych (Fundusz Ubezpieczeń Społecznych), 2004 r. (Major Statistical Information on Social Insurance (the Social Insurance Fund) 2004), Warsaw, publication available on the website www.zus.pl on 13 September 2005.