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COUPLE OF THOUGHTS ON THE CONSEQUENCES OF CHANGES IN THE PENSION SYSTEM IN POLAND IN 2017

The article presents the rules of retirement in selected European countries and the consequences of lowering the retirement age in Poland from October 2017 for the finances, the labor market and pension level. In particular, examples of pension calculations are given with different initial capital levels and different retirement periods. According to the author, it will be necessary to raise the retirement age in the future, but it would require great political courage.

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Introduction

On the 1st of October 2017 the law from 16th November 2016 on the changes in the Law on retirement and other pensions provided by the Social Insurance Fund and some other laws (Journal of Laws 2017, item 38) comes into force in Poland. The most crucial is change in article 24, paragraph 1 of the Law from 17th December 1998 on retirement and other pensions from the Social Insurance Fund (Journal of Laws 1998, No. 162, item 1118), introducing a reduced retirement age. According to the new article insured people born after 31st December 1948 are entitled to retire after reaching a retirement age of at least 60 years for women and at least 65 years for

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men. It actually means coming back to the previous retirement age, which was gradually increased from 1st January 2013 (Journal of Laws 2012, item 637). This rise was criticized by part of the society (Zieleniecki, 2015), mainly because of lack of sufficient public consultations. It was probably one of the important reasons of losing the elections by PO and PSL in 2015. During the election campaign the opposition accused government of being arrogant and focusing only on economic aspects, but ignoring social consequences (Tkaczuk, 2014).

It is worth noting that reduction of the retirement age was the fulfillment of 2015 election promise given by PIS (currently governing in Poland). Significant influence on the decision to lower the retirement age had NSZZ 'Solidarność', whereas organizations of economists and employers (such as the WiseEurope, Association of Polish Economist) were protesting against the downturn (2016). In turn, A. Sieroń (2017), from the Ludwig von Mises Institute of Economics pointed out that reduction in retirement age would negatively affect the labor market, GDP, public finances and pension level (especially for women). The European Commission suggested similar effect, recommending in May 2017 professional activation of women, low-skilled and older people combined with raising the retirement age. Taking into account an additional 330 thousands of retired people at the end of 2017, the government is also wondering how to make the largest part of them remaining in the labor market. All the ideas considered so far to solve this situation are not satisfying. For example, the idea of adding 5 thousand PLN to the retirement account for every extra year of work is completely absurd for people who earn much below the national average, as they will receive minimum pension anyway.

M. Haponiuk (2016) in his analysis notes that:

- Introduced changes completely do not take into account financial situation of Poland, including the condition of Social Insurance Fund from which pensions are paid,
- The change will especially influence woman as their shorter professional experience means less accumulated pension contributions and longer pension period, resulting in lower pensions,
- The number of employees will be reduced and the number of inactive people will increase, thus fewer workers will have to maintain a larger group of retired people,
- The expected effect of reducing the retirement age which weakens the labor market in Poland, will be the growth of the shadow economy,

- Lowering the retirement age will lead to an increase in the number of people receiving minimal pensions even twice.

Malec and Tyrowicz (2017) also point out the negative effects of lowering the retirement age. The authors emphasize that the lower retirement age means lower retirement pensions, especially among women, which will result in higher fiscal burdens and will also lead to a decrease in national income.

The article attempts to draw attention to selected aspects of lowering the retirement age.

Retirement age in some European countries

To begin with, Table 1 presents retirement age in different European countries and the changes in it.

Table 1. Retirement age for men and women in chosen European countries

No	State	Retirement age
1	Austria	Men: 65 years, Women: 60 years. Progressive increase of age limit for women until the same retirement age as for men will have been reached between the years 2024 and 2033.
2	Belgium	65 years.
3	Bulgaria	Men: 64 years of age and 38 years and 4 months of insurance; Women: 61 years of age and 35 years and 4 months of insurance. From 1/1/2017 the retirement age is being increased as follows: for women: by 2 months per calendar year until 31/12/2029 and by 3 months from 1/1/2030 until it reaches 65; for men: by 2 months per calendar year until 31/12/2017 and by 1 month from 01/01/2018 until it reaches 65. After 31/12/2037 the retirement age will be linked to the life expectancy. From 1/1/2017, the required period of insurance is being increased by 2 months per calendar year until it reaches 37 years for women and 40 years for men.
4	Croatia	Men: 65 years, Women: 61 years and 9 months in 2017 Men and women long-insured persons with 41 years of insurance or more: 60 years. The pensionable age for women is being gradually increased by 3 months per calendar year from 1 November 2010 onwards, to reach 65 in 2030. The pensionable age for both women and men will be gradually increased by 3 months per calendar year from 2031 onwards, to reach 67 in 2038.
5	Cyprus	65 years for men and women; 63 years for miners. Pensionable age will be revised every 5 years, starting from 2023 according to the change in life expectancy during 2018-2023.

Table 1. Continuation

No	State	Retirement age
6	Czech Republic	Men: 63 years and 2 months. Women: depends upon the number of children raised: no children: 62 years and 8 months, 1 child: 61 years and 8 months, 2 children: 60 years and 4 months, 3 or 4 children: 59 years and 8 months, 5 or more children: 58 years and 8 months. The legal retirement age for men is gradually increasing by 2 months each year. The legal retirement age for women is increasing by 4 months each year (6 months from 2018) until it equals that of men. After that, the increase will also be 2 months per year. There is no ceiling on the pensionable age increase.
7	Denmark	The pensionable age is 65 in 2016 and will be gradually increased from 65 to 67 in 2019-22 and to 68 in 2030. The pensionable age is linked to developments in life-expectancy at age 60. It is adjusted every 5 years (next adjustment will be in 2020 and will be effective 15 years, i.e. till 2035). Supplementary pension (arbejds-markedets tillægspension, ATP): 65 years.
8	Estonia	Men: 63 years Women: 63 years. From 2017 the gradual increase of the pensionable age will be continued and pensionable age will be 65 for men and women by 2026.
9	Finland	Statutory earnings-related pension (Työeläke): Old-age pension to one's own choice between the ages of 63 to 68. In the public sector there are lower individual retirement ages. National pension (Kansaneläke) and guarantee pension (Taku-eläke): 65 years.
10	France	General pension scheme for employees (Régime général d'assurance vieillesse des travailleurs salariés, RGA VTS): if minimum period of affiliation completed: 60 years for people born before 1st of July 1951. Increase of 5 months per year of birth to reach 62 years for those born starting from 1955. If minimum period of affiliation not completed: 65 years for people born before 1st of July 1951. Increase of 5 months per year of birth to reach 67 years for those born starting from 1955. Supplementary pension schemes for employees (ARRCO) and executives (AGIRC): Between 65 and 67 or upon receipt of the basic pension at a full rate.
11	Greece	67 years (if 15 years of insurance). 62 years (if 40 years of insurance).
12	Spain	65 years (with 36 years of contributions). 65 years and four months (with less than 36 years of contributions). Progressive increase until 2027: 65 years (with 38 years and 6 months of contributions); 67 years (with less than 38 years and 6 months of contributions). Increase of the legal age (in case of insufficient contributions) of one month per year until 2018 and 2 months per year from then on.
13	The Netherlands	65 years and three months in 2015. As of 2013, the legal retirement age will be gradually increased to 66 in 2018 and 67 in 2021. As of 2022, the legal retirement age will be linked to life expectancy
14	Ireland	State pension age for all at 66 years. State pension age will increase further to 67 in 2021 and 68 in 2028.
15	Iceland	National pension (lífeyrir almannatrygginga): 67 years. Employment pension (lög-bundnir lífeyrissjóðir): 65-70 years.
16	Liechtenstein	Women and men: 64 years old.

Table 1. Continuation

No	State	Retirement age
17	Lithuania	Men: 63 years and 4 months. Women: 61 years and 8 months. From 2012 onwards, the retirement age increases annually by 4 months for women and by 2 months for men until it reaches 65 for both women and men in 2026.
18	Luxembourg	65 years
19	Latvia	62 years and 9 months. The legal retirement age is gradually increased by 3 months per year until reaching 65 years in 2025.
20	Malta	For those born before 1952: Men: 61; Women: 60; Women have the option of retiring at 61 if they wish. For men and women born: in the years 1952 to 1955: 62; in 1956-1958: 63; in 1959-1962: 64; in 1962 and subsequent years: 65.
21	Germany	67 years (standard retirement age). The standard retirement age will be gradually increased to 67 years from 2012 to 2029, starting with those born in 1947. The first increase amounts to one month per year (65 to 66) and the following to two months per year (66 to 67). For all those born after 1963, the standard retirement age of 67 years shall apply.
22	Norway	The retirement age is flexible between 62 and 75. In order to draw an old-age pension before reaching the age of 67, special provisions apply, i.e. the person must be entitled to at least the minimum pension for persons with an insurance period of 40 years, when they reach 67.
23	Poland	From October 2017 65 years for men and 60 for women.
24	Portugal	66 years and 2 months for men and women in 2016 (after 2015, the normal age for access to a pension varies depending on the average life expectancy at the age of 65. 65 years for beneficiaries legally prevented from working beyond that age (e.g., pilots, drivers of heavy vehicles). When the beneficiary reaches the age of 65, the normal pensionable age is reduced by four months for each calendar year after the contribution period of 40 years, with a 65-year threshold.
25	Romania	Men: 65 years. Women: 60 years and 4 months on 1 July 2016, gradually increasing to 63 years by 1 January 2030.
26	Slovakia	62 years for all population groups (except for women with multiple children, for whom this retirement age will be reached in 2023). From 2017 onwards the legal retirement age will gradually increase depending on the increase in average life expectancy in the reference age (common for both men and women).
27	Slovenia	65 years.
28	Switzerland	Men: 65 years Women: 64 year.
29	Sweden	Flexible retirement age from 61 for earnings-related pensions and from 65 years for Guaranteed pension.
30	Hungary	Retirement age is increased by 6 months for each age cohort, from 62 for those born before 1952 to 65 for those born in 1957 and after (i.e. for those born in 1952, it is 62 plus 6 months, for those born in 1953, 63 and so on).

Table 1. Continuation

No	State	Retirement age
31	Great Britain	Men: 65 years Women: 60 years (up until 5 April 2010). From 6 April 2010 women's State Pension age is gradually rising until it reaches age 65 in November 2018. From December 2018 the State Pension age for both men and women will start to increase to reach 66 by October 2020. The government is planning further increases, which will raise the state pension age from 66 to 67 between 2026 and 2028. They will then review it every five years in line with life expectancy.
32	Italy	Male employees of the private sector, self-employed and para-subordinate workers: 66 years and 7 months; Male and female civil servants: 66 years and 7 months; Female employees of the private sector: 65 years and 7 months; Female self-employed and para-subordinate workers: 66 years and 1 month (see Annex on the social protection of the self-employed). The retirement age is being gradually increased according to the increase in life expectancy. As of January 2021, the retirement age cannot be lower than 67 (it will reach 69 and 9 months by the year 2050). The pension payment deferment scheme no longer applies except for certain duly certified categories of hard jobs to which the previous "Quota system" still applies. Such categories include: miners, workers engaged in asbestos removal, night-shift workers, public transport heavy-vehicles' drivers, etc.

Source: own work based on MISSOC, data from 2016 r., (<http://www.missoc.org/INFORMATIONBASE/informationBase.jsp>. Retrieved May 28, 2017).

Information presented in Table 1 shows that practically Poland has the lowest retirement age among European countries and there is no algorithm for its gradual increase after withdrawing reform from early 2013. The retirement age of women was significantly decreased, while in Europe the general trend is to make the retirement age of women and men equal. It is worth noting that European Commission suggests that retirement age in European Union should be gradually raised to 70 years of age.

Lowering retirement age and Burden on workers

Decreasing retirement age in Poland may be surprising, especially if we compare it with data from recent years on average life length and the indicator of economic burden - the ratio of number of pre-working (0-17) and post-working (60/65 +) people to the number of people in production age (18-59 / 64). Table 2 contains the numbers:

Table 2. Indicator of economic Burden and average life length in Poland

Year	2000	2010	2011	2012	2013	2014	2015	2016
Indicator of economic burden in percent	64	55	56	57	58	59	60	62
Average length of life – men and women together in years	73.7	76.2	76.5	76.7	77.0	77.6	77.6	77.9

Source: <http://stat.gov.pl/wskazniki-makroekonomiczne/>. Retrieved July 23, 2017.

The data presented in Table 2 show that in the last few years, on the one hand, the economic burden was rising steadily (in 2016 there were 6.2 people in non-production age for every 10 people in production age) and on the other hand, the average life length is steadily increasing. Taking into account the fact that Polish pension system is participative - in the long term it must lead to increased tax burden on the working population. Even more pessimistic are forecasts until year 2060 published by the Social Insurance Institution (ZUS), which are presented in Table 3.

Table 3. Population of Poland forecasts – data after lowering retirement age

Year	2015	2020	2030	2040	2050	2060
Total population (in thousands):	38 490	38 346	37 403	36 108	34 696	33 126
In this:						
In pre-production age	6 959	6 954	6 223	5 561	5 499	5 230
In production age	24 020	22 818	21 569	19 976	17 427	16 029
In post-production age	7 511	8 573	9 610	10 570	11 769	11 867
Indicator of economic burden in percent	60.2	68.0	73.4	80.8	99.1	106.7

Source: Forecast of receipts and expenses... (2016): p. 13.

Table 3 presents the forecasts of Polish population by economic category by 2060. Practically in 2050 year there will be one unemployed per worker. At the same time, it doesn't seem that 500+ program significantly changed the proportions. Some action is needed to radically change the situation, as it can lead to break down of public finances. If the increase in retirement age was not reversed, the data would look as in Table 4.

Table 4. Population of Poland forecasts– data before lowering retirement age

Year	2015	2020	2030	2040	2050	2060
Total population (in thousands):	38 490	38 346	37 403	36 108	34 696	33 126
In this:						
In pre-production age	6 959	6 954	6 223	5 561	5 499	5 230
In production age	24 414	23 843	22 926	22 385	19 834	17 759
In post-production age	7 117	7 584	8 253	8 162	9 362	10 137
Indicator of economic burden in percent	57.7	61.0	63.1	61.3	74.9	86.5

Source: Forecast of receipts and expenses... (2016): p. 13.

According to data in Table 4 at least till 2040 the situation seems to be stable. Unfortunately, fulfillment of some electoral promises, although gives some short-term benefits to the government, in the long term might kill the economy and the working people. It will be necessary in the coming years to raise the retirement age again, but it will be a very difficult political decision and at the moment there is no party that could do it.

Financial implications of lowering retirement age

The financial implication of lowering retirement age is mainly additional expense of around 55 billion PLN between 2017 and 2021, as shown in Table 5, plus an additional 714 thousands retirees.

Table 5. Model 1: Panel OLS estimation using 126 observations 16 cross-sectional data units are included. Time series length: minimum 7, maximum 8. The dependent variable (Y): PKB_{it}

Year	2017	2018	2019	2020	2021	Suma
Revenue (in thousand PLN)	1 377 800	985 500	-640 100	-1 707 200	-2 715 200	-2 69 9200
Costs (in thousand PLN)	2 182 400	10 448 000	11 798 200	13 457 200	14 313 300	52 199 100
Total (in thousand PLN)	-804 600	-9 462 500	-12 438 400	-15 164 000	-17 028 500	-54 898 000
Additional potential retirees (in thousands of people)	330	148	90	92	54	714

Source: ZUS data

It is possible that forecasts presented in Table 5 are somewhat too pessimistic, especially on the side of revenue. It might be higher due to increased employment of foreigners and positive migration rate.

Lowering retirement age will worsen the balance of Social Insurance Fund, as illustrated by the next two tables. Table 6 is based on forecasts for a higher retirement age, and Table 7 illustrates forecasts after the retirement age was lowered in October 2017. Those two tables include three scenarios: basic, pessimistic and optimistic.

Table 6. Social Insurance Fund balance in 3 variants of forecasts of receipts and expenditures for years 2017–2021

Specification	2017	2018	2019	2020	2021
Variant number 1 (basic)					
Balance in billion PLN	-56.5	-58.5	-61.5	-64	-68.5
Balance in % GDP	-2.82%	-2.75%	-2.71%	-2.67%	-2.68%
Variant number 2 (pessimistic)					
Balance in billion PLN	-65	-71	-78	-83	-90.5
Balance in % GDP	-3.32%	-3.44%	-3.56%	-3.67%	-3.84%
Variant number 3 (optimistic)					
Balance in billion PLN	-50	-50	-49	-49	-50.5
Balance in % GDP	-2.48%	-2.30%	-2.10%	-1.95%	-1.89%

Source: Forecast of receipts and expenses... (2015): pp. 19–30.

Table 7. Social Insurance Fund balance in 3 variants of forecasts of receipts and expenditures for years 2018–2022

Specification	2018	2019	2020	2021	2022
Variant number 1 (basic)					
Balance in billion PLN	-56.5	-60	-63.5	-68.5	-73.5
Balance in % GDP	-2.72%	-2.72%	-2.71%	-2.75%	-2.77%
Variant number 2 (pessimistic)					
Balance in billion PLN	-65	-72	-79.5	-88.5	-96.5
Balance in % GDP	-3.22%	-3.39%	-3.56%	-3.76%	-3.93%
Variant number 3 (optimistic)					
Balance in billion PLN	-48.5	-49.5	-51	-53	-55.5
Balance in % GDP	-2.28%	-2.17%	-2.08%	-2.03%	-1.98%

Source: Forecast of receipts and expenses... (2015): pp. 16–27.

It seems that the most likely scenario is the basic one, but it should be noted that it assumes ambitious indicators (eg annual real GDP growth of 3.6-3.9% and unemployment at the end of 2022 at 6%). In a short term, the situation presented in both tables are not significantly different, but in all variants the deficit of the Social Insurance Fund is significantly increasing in 2022. We can suppose that situation will deteriorate in the following years.

Impact of lowering retirement age on level of pension

According to GUS data - in 2015 year 1.357 million people employed in the national economy received gross wages not higher than the minimum wage (1750 PLN), which was about 13% of the total number of employed people (similarly as in previous years). We should assume that this number will not change significantly in subsequent years. If we assume that the minimum wage worker will work for 35 years (from 26 to 60 years), receiving a minimum wage of 2000 PLN (year 2017) and not taking into account the change in the value of money over time, we can calculate that when retiring he will have fund of PLN 163,968, giving pension PLN 643 – so the minimum one. If such a person retires at the age of 67 – calculated number slightly exceeds the amount of the minimum pension (PLN 1000). It means that the recipients of the minimum wage should retire as early as possible, since the transition time will not affect the amount of benefits received. Therefore, people who receive the lowest wages will not lose on lowering their retirement age. Their retirement benefits, despite early retirement, will not change. The vast majority will therefore use this opportunity which might also rise the temptation to continue work in the shadow economy. This is the result of a jump increase in the minimum pension in March 2017 to PLN 1000. Ratio between the lowest pension and the minimum and average wage in the years 2002–2017 is illustrated in Table 8, which shows a sharp improvement in the ratios in 2017.

The age of retirement will affect pension level if the worker salary exceeds about 1.5 minimum wage in the period of employment (in 2017 – 3 000 PLN). In such case each additional year of work means an increase in pension level by about 8%. Approximate level of future pension, depending on the retirement age, the amount of revalued initial capital and updated contributions to the Social Insurance Fund at the end of 2017, and annual contribution in various variants is presented in Table 9. For the calculations, it was assumed that future annual revaluation index is equal to 3%. It was also assumed that employee will have 60 years on June 1, 2018.

Table 8. Ratio between the lowest pension to minimum and average wage during 2002–2017 in Poland

Year	The lowest pension	Minimum wage	Ratio between the lowest pension and minimum wage	Average wage	Ratio between the lowest pension and average wage	Ratio between minimum and average wage
2002	532.91	760	70.12%	2 133.71	24.98%	35.62%
2003	552.63	800	69.08%	2 201.47	25.10%	36.34%
2004	562.58	824	68.27%	2 289.57	24.57%	35.99%
2005	562.58	849	66.26%	2 380.29	23.63%	35.67%
2006	597.46	899.1	66.45%	2 477.23	24.12%	36.29%
2007	597.46	936	63.83%	2 691.03	22.20%	34.78%
2008	636.29	1 126	56.51%	2 943.88	21.61%	38.25%
2009	675.10	1 276	52.91%	3 102.96	21.76%	41.12%
2010	706.29	1 317	53.63%	3 224.94	21.90%	40.84%
2011	728.18	1 386	52.54%	3 399.52	21.42%	40.77%
2012	799.18	1 500	53.28%	3 521.67	22.69%	42.59%
2013	831.15	1 600	51.95%	3 650.06	22.77%	43.83%
2014	844.45	1 680	50.26%	3 783.43	22.32%	44.40%
2015	880.45	1 750	50.31%	3 899.78	22.58%	44.87%
2016	882.56	1 850	47.71%	4 060.00	21.67%	45.57%
2017	1 000.00	2 000	50.00%	4 263.00	23.52%	46.92%

Source: Review of the pension system, Information of the Council of Ministers for the Polish Parliament about the effects of the Law from 11 May 2012 on the changes in Law on pensions from the Social Insurance Fund (Journal of Laws, No. 637), together with proposals for amendments. P. 78, Warsaw 2017.

It should be emphasized that these are approximate calculations, assuming for example the life expectancies published by GUS on March 24, 2017. Those indicators will be changed in 2018 (like each year). The annual premium contribution of PLN 4 685 corresponds to the minimum wage, whereas PLN 6 000 is the effect of monthly wage of PLN 2 560, similarly the contribution of PLN 9 000 is the wage PLN 3840, the contribution of PLN 12000 – the wage PLN 5 123 and contribution PLN 15 000 – the wage PLN 6 404.

Table 9. Approximate level of future pension, depending on the retirement age, the amount of revalued initial capital and contributions to the Social Insurance Fund

Retirement age		60	61	62	63	64	65	66	67	68	69	70
Life expectancies		255	246.1	237.3	228.8	220.3	212	203.7	195.6	187.6	179.6	171.8
Revalued initial capital and updated contribu- tions (on 31 XII 2017)	annual contri- bution (in PLN)	Pension level (in PLN)										
283 253 zł	4685.0	1118.5	1212.5	1314.6	1424.6	1545.0	1675.4	1818.7	1974.5	2145.1	2333.7	2539.7
	9000.0	1125.5	1237.3	1359.1	1490.8	1635.1	1792.0	1964.6	2152.7	2359.3	2587.8	2838.1
	12000.0	1130.4	1254.6	1390.1	1536.8	1697.7	1873.0	2066.0	2276.7	2508.1	2764.4	3045.6
	15000.0	1135.3	1271.8	1421.0	1582.7	1760.4	1954.0	2167.4	2400.6	2657.0	2941.1	3253.1
450 000 zł	6000.0	1774.5	1917.9	2073.7	2241.1	2424.3	2622.8	2840.6	3077.3	3336.4	3622.5	3935.1
	9000.0	1779.4	1935.2	2104.6	2287.1	2487.0	2703.8	2942.0	3201.2	3485.2	3799.2	4142.5
	12000.0	1784.3	1952.5	2135.5	2333.1	2549.6	2784.8	3043.4	3325.1	3634.1	3975.8	4350.0
	15000.0	1789.2	1969.7	2166.5	2379.1	2612.3	2865.9	3144.8	3449.0	3783.0	4152.5	4557.5
500 000 zł	6000.0	1970.6	2127.2	2297.2	2479.9	2679.8	2896.2	3133.7	3391.7	3674.0	3985.8	4326.2
	9000.0	1975.5	2144.5	2328.2	2525.9	2742.4	2977.2	3235.1	3515.6	3822.8	4162.4	4533.7
	12000.0	1980.4	2161.7	2359.1	2571.9	2805.1	3058.2	3336.5	3639.5	3971.7	4339.1	4741.1
	15000.0	1985.3	2179.0	2390.0	2617.9	2867.7	3139.3	3437.9	3763.4	4120.6	4515.7	4948.6
550 000 zł	6000.0	2166.7	2336.4	2520.8	2718.7	2935.2	3169.6	3426.8	3706.1	4011.6	4349.0	4717.3
	9000.0	2171.6	2353.7	2551.7	2764.7	2997.9	3250.6	3528.2	3830.0	4160.5	4525.7	4924.8
	12000.0	2176.5	2371.0	2582.6	2810.7	3060.5	3331.7	3629.6	3953.9	4309.3	4702.3	5132.3
	15000.0	2181.4	2388.3	2613.5	2856.7	3123.2	3412.7	3731.0	4077.8	4458.2	4879.0	5339.7
600 000 zł	6000.0	2362.7	2545.7	2744.3	2957.5	3190.7	3443.0	3719.9	4020.4	4349.2	4712.2	5108.5
	9000.0	2367.6	2563.0	2775.2	3003.5	3253.3	3524.0	3821.3	4144.4	4498.1	4888.9	5315.9
	12000.0	2372.5	2580.3	2806.2	3049.5	3316.0	3605.1	3922.7	4268.3	4647.0	5065.6	5523.4
	15000.0	2377.5	2597.5	2837.1	3095.5	3378.6	3686.1	4024.1	4392.2	4795.8	5242.2	5730.8
650 000 zł	6000.0	2558.8	2755.0	2967.8	3196.3	3446.1	3716.4	4013.0	4334.8	4686.9	5075.5	5499.6
	9000.0	2563.7	2772.2	2998.8	3242.3	3508.8	3797.5	4114.4	4458.7	4835.7	5252.1	5707.0
	12000.0	2568.6	2789.5	3029.7	3288.3	3571.4	3878.5	4215.8	4582.7	4984.6	5428.8	5914.5
	15000.0	2573.5	2806.8	3060.6	3334.3	3634.1	3959.5	4317.2	4706.6	5133.5	5605.5	6122.0
700 000 zł	6000.0	2754.9	2964.2	3191.4	3435.1	3701.6	3989.8	4306.1	4649.2	5024.5	5438.7	5890.7
	9000.0	2759.8	2981.5	3222.3	3481.1	3764.2	4070.9	4407.5	4773.1	5173.3	5615.4	6098.2
	12000.0	2764.7	2998.8	3253.2	3527.1	3826.9	4151.9	4508.9	4897.0	5322.2	5792.0	6305.6
	15000.0	2769.6	3016.1	3284.2	3573.1	3889.5	4232.9	4610.3	5021.0	5471.1	5968.7	6513.1

Source: Own computations.

Table 10. Percent growth in the pension level while retiring in specific age comparing to the age of 60

Retirement age		60	61	62	63	64	65	66	67	68	69	70
Revalued initial capital (in PLN)	Yearly contribution	Pension level	Percent growth in the pension level while retiring in specific age comparing to the age of 60									
283 253	4 685	1118.5	8.4	17.5	27.4	38.1	49.8	62.6	76.5	91.8	108.6	127.1
	9 000	1125.5	9.9	20.8	32.5	45.3	59.2	74.6	91.3	109.6	129.9	152.2
	12 000	1130.4	11.0	23.0	36.0	50.2	65.7	82.8	101.4	121.9	144.6	169.4
	15 000	1135.3	12.0	25.2	39.4	55.1	72.1	90.9	111.5	134.0	159.1	186.5
450 000	6 000	1774.5	8.1	16.9	26.3	36.6	47.8	60.1	73.4	88.0	104.1	121.8
	9 000	1779.4	8.8	18.3	28.5	39.8	52.0	65.3	79.9	95.9	113.5	132.8
	12 000	1784.3	9.4	19.7	30.8	42.9	56.1	70.6	86.4	103.7	122.8	143.8
	15 000	1789.2	10.1	21.1	33.0	46.0	60.2	75.8	92.8	111.4	132.1	154.7
500 000	6 000	1970.6	7.9	16.6	25.8	36.0	47.0	59.0	72.1	86.4	102.3	119.5
	9 000	1975.5	8.6	17.9	27.9	38.8	50.7	63.8	78.0	93.5	110.7	129.5
	12 000	1980.4	9.2	19.1	29.9	41.6	54.4	68.5	83.8	100.6	119.1	139.4
	15 000	1985.3	9.8	20.4	31.9	44.4	58.1	73.2	89.6	107.6	127.5	149.3
550 000	6 000	2166.7	7.8	16.3	25.5	35.5	46.3	58.2	71.0	85.1	100.7	117.7
	9 000	2171.6	8.4	17.5	27.3	38.1	49.7	62.5	76.4	91.6	108.4	126.8
	12 000	2176.5	8.9	18.7	29.1	40.6	53.1	66.8	81.7	98.0	116.0	135.8
	15 000	2181.4	9.5	19.8	31.0	43.2	56.4	71.0	86.9	104.4	123.7	144.8
600 000	6 000	2362.7	7.7	16.2	25.2	35.0	45.7	57.4	70.2	84.1	99.4	116.2
	9 000	2367.6	8.3	17.2	26.9	37.4	48.8	61.4	75.0	90.0	106.5	124.5
	12 000	2372.5	8.8	18.3	28.5	39.8	52.0	65.3	79.9	95.9	113.5	132.8
	15 000	2377.5	9.3	19.3	30.2	42.1	55.0	69.3	84.7	101.7	120.5	141.0
650 000	6 000	2558.8	7.7	16.0	24.9	34.7	45.2	56.8	69.4	83.2	98.4	114.9
	9 000	2563.7	8.1	17.0	26.5	36.9	48.1	60.5	73.9	88.6	104.9	122.6
	12 000	2568.6	8.6	18.0	28.0	39.0	51.0	64.1	78.4	94.1	111.4	130.3
	15 000	2573.5	9.1	18.9	29.6	41.2	53.9	67.8	82.9	99.5	117.8	137.9
700 000	6 000	2754.9	7.6	15.8	24.7	34.4	44.8	56.3	68.8	82.4	97.4	113.8
	9 000	2759.8	8.0	16.8	26.1	36.4	47.5	59.7	73.0	87.5	103.5	121.0
	12 000	2764.7	8.5	17.7	27.6	38.4	50.2	63.1	77.1	92.5	109.5	128.1
	15 000	2769.6	8.9	18.6	29.0	40.4	52.8	66.5	81.3	97.5	115.5	135.2

Source: Own computations based on table 9.

Based on calculation from table 10 it is clear that decision to retire at the age of 65 instead of 60 results in an increase in the pension level for more than 50%. If we retire at the age of 67 (instead of 60), the average pension will increase by more than 75%. From this point of view, the employee should decide at the latest retirement, it especially refer to women. Let's notice that

their pensions will be very low and will range between 18 and 45% of the last wage. It means that retiring at the minimum age would lead to very low pension.

Conclusions

Analyzing the data presented in the article, both about the level of future pensions and the situation of the Polish Security Fund it is hard to see any positive effect of lowering the retirement age, except the benefit for the least earners – they will not lose on the early retirement because they would still receive a minimum pension. It is therefore hard to disagree with M. Szczepanski's conclusions (2016): „It seems that in the longer term it will be necessary to extend the retirement age, because of demographics and economic calculations, which in social policy will sooner or later pave the way.”. The retirement benefits for miners, uniformed services should be reduced, while the opposite trend is observed. It was recently expanded to customs officers and border guards. It is worth noting that the political situation in upcoming years (including upcoming local and parliamentary elections) will definitely not be help in resolving this issue. Attempts to block future changes in the retirement age, by for example resolving this issue in a referendum without necessary educational action, should be treated as irresponsible and calculated only for immediate political purposes. About the probable need of future increase of the retirement age mentions even ZUS in the White Paper (2016). It is however hard today to pinpoint any party that could decide to do this, no matter on the political costs.

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