STUDIA OECONOMICA POSNANIENSIA 2017, vol. 5, no. 6

DOI: 10.18559/SOEP.2017.6.6

**Damian Walczak**
Nicolaus Copernicus University in Toruń, Faculty of Economic Sciences and Management, Department of Financial Management
dwalczak@umk.pl

# RETIREMENT SAVINGS IN AN AGEING SOCIETY: A CHALLENGE FOR SUSTAINABLE DEVELOPMENT

**Abstract**: Societies around the world are aging. Regardless of the adopted solutions within the mandatory pension system, the amount of future benefits depends on the ratio of the number of the unemployed to the number of the employed. Therefore, ensuring financial security in old age will increasingly depend on one's accumulated savings. According to a representative survey Social Diagnosis, Polish people still save little. It needs to be emphasised that the level of this type of savings determines the amount of future pension benefits. Without an adequate organization of the financial market, supported by relevant activities of public sector institutions, there will be no significant change in this regard. This change should have a positive present and future impact on the economic and social aspects of sustainable development. As long as the individual retirement security is deprived of support from the state helping financial institutions in creating incentives for Poles to save, the issue will remain unsolved.

**Keywords**: sustainable development, savings, ageing society, pension.

**JEL classification**: D14, D53, J32, G18, I22.

**OSZCZĘDNOŚCI EMERYTALNE W STARZEJĄCYM SIĘ SPOŁECZEŃSTWIE: W ASPEKCIE ROZWOJU ZRÓWNOWAŻONEGO**

**Streszczenie**: Społeczeństwa na całym świecie się starzeją. Bez względu na przyjęte rozwiązania w zakresie obowiązkowego systemu emerytalnego, wysokość przyszłych świadczeń – bezpośrednio lub pośrednio – będzie uzależniona od relacji liczby osób niepracujących do pracujących. Z tego powodu zapewnienie bezpieczeństwa finansowego na starość w coraz większym zakresie będzie uzależnione od samodzielnie zgromadzonych oszczędności. Zgodnie z reprezentatywnym badaniem Diagnoza Społeczna Polacy nadal oszczędzają niewiele. A to poziom tych oszczędności warunkuje wysokość przyszłych świadczeń. Bez odpowiedniego zorganizowania rynku finansowego, wspartego odpowiednimi działaniami instytucji sektora publicznego, nie nastąpi istotna zmiana w tym zakresie. Dopóki indywidualne zabezpieczenie emerytalne będzie pozbawione wsparcia za strony państwa, które swoimi działaniami nie wesprze instytucji finansowych w zachęcaniu Polaków do oszczędzania, dotąd kwestia ta będzie nierozwiązana.

**Słowa kluczowe**: rozwój zrównoważony, oszczędności, starzejące się społeczeństwo, emerytura.

## Introduction

Future pensions in Poland (the defined contribution system) will depend on the amount of the capital accumulated during the economic activity period [Chybalski and Marcinkiewicz 2016, pp. 102–103]. Therefore, they will be determined by factors that affect the accumulated capital – the number of years of service, levels of earnings, and the age at which the economic activity was finished. This leads to lowering the replacement rate, when compared to the current defined-benefit system [Krupa 2011, pp. 48–49; Pieńkowska-Kamieniecka 2014, pp. 357–367; Rutecka 2014, pp. 260–265]. At the same time it should be stressed that life expectancy has grown, and the dependency ratio is increasing rapidly [Kitao 2014, pp. 756–757; Attanasio, Kitao and Violante 2007, pp. 144–146].

The presented dependence means that persons thinking rationally about the level of their income after the end of their professional activity should begin additional saving for their retirement period much earlier.

Additional retirement security is too frequently perceived as the interest of specific individuals. However, leaving several million people with minimum pensions may create in the future a significant problem for the whole

economy, in particular when we consider that aging has a marked effect on the sustainability of public finances [de Groot 2007, p. 49]. Encouraging 'at least' several hundreds of thousands (or even several million) people to make additional and individual saving for their retirement may be an additional incentive not only to reach the financial security of these people, but also to stabilize the country's economic and social situation [Dziawgo and Dziawgo 2014, pp. 30–32; Gabrusewicz 2013, pp. 38–39]. Ensuring adequate incomes to a large proportion of the population will have a positive impact on sustainable development in the future. It will impact both the economic and social aspects. It will also have a positive impact on reducing poverty and income differences, on social order [Singh et al. 2009, pp. 189–212], and will strengthen the local economy and empower local communities [White and Lee 2007, p. 686].

Balancing the pension system itself (understood as income and expenditure of the Social Insurance Fund – FUS [1]) is not the same thing as providing benefits at an appropriate level to future retirees. To balance the pension system it is sufficient, for instance, to eliminate the so-called minimum pensions or, which may result in increasing benefits, raise dramatically the retirement age (shorten the period of receiving benefits and extend the period of work) or to raise pension contributions [Kitao 2014, pp. 776–777; Gonzalez-Eirasa and Niepelt 2007, pp. 198]. However, the mandatory raising of contributions for all working affects labour costs, and as a consequence increases the number of people working in the grey economy.

Each of these solutions has significant drawbacks, therefore, in order to ensure retirees adequate benefits in the future, the role of individual retirement savings should be strengthened [Bloom et al. 2007, pp. 93–95]. In addition, as emphasized by Hondroyiannis [2006, p. 565], regulating financial markets may increase the popularity of additional saving for old age. Rutecka [2014, p. 263], in turn, emphasizes the role of the replacement rate and income received in increasing the popularity of supplementary pension plans. However, in this case both factors, similar to the regulation of the financial markets, are dependent on government policies. Informing citizens about such a subtle issue as the future replacement rate (and about the consequences resulting from it) should be a merit of responsible authorities. Undoubtedly, with a view to encouraging citizens to have additional savings, it would be necessary to have the above-mentioned regulations in

[1] Both in its insurance and non-contributory parts (e.g., the uniformed services).

place as well as to create appropriate instruments, or even a pension financial market, which would facilitate this process.

At the same time it is worth noting the role of the pension system based on, unfortunately, small pensions stemming from accumulated contributions and, as proposed in the present work, on voluntary savings. On the one hand, the basic mandatory system would provide, though relatively small, still some pension. On the other hand, however, the state would have to encourage and support – to a greater extent than at present – those investing voluntarily in their old age. As presented by Adamiak and Walczak (2014, pp. 11–17), these solutions will not only be compatible with sustainable development but also with solidarity and catholic social teaching. The existing system provides all pensioners but minimally, however, it also supports and encourages individuals to take precautionary measures.

The objective of the study is to present retirement saving in Poland in the light of the need of its support from the state.

## 1. Methodology and data

The presentation of retirement saving is possible through the presentation of the abundant available information. Undoubtedly, the most comprehensive overview of the volume of the accumulated scarce resources can be made by an analysis of the number of people and the amounts collected on the Individual Retirement Account and on the Individual Retirement Security Account [Rutecka et al. 2014]. However, these amounts do not inform precisely who is in possession of the savings. With a view to presenting the amounts more broadly, we should base on research showing not only the amount of savings, but also considering the characteristics of households that have decided to save. For this reason, the article presents the results obtained from a representative survey – Social Diagnosis 2015. The article presents the results originating from an individual study (Table 1) and from household surveys (Tables 2–4). Analysis of the presented data was made using a logit regression model (using IBM SPSS Statistics 22.0), which will allow determining the impact of individual characteristics of households on the propensity to save. In the work we hypothesized that:

H1: Due to the characteristics of persons saving, making savings for old age requires support from the state.

The research presented in this article is based on a representative survey 'Social Diagnosis' conducted in Poland in 2015. Within this study the following were examined: 11,740 households with 35,279 members, and 24,324 individual members of these households aged 16 and over the age of 16[2].

As regards the three independent variables (the number of families forming the household, the total number of people in a household, and the level of income), due to the occurrence of such a possibility, they were expressed by means of a continuous scale. The other variables are of different types and are shown in table 1.

Due to the small value of the income variable (given in Polish zloty – PLN), which originally ranged from 4,000 PLN to 40,000 PLN, the amounts received were divided by 1,000. This results from the need to determine the impact of this variable on the possessed savings for old age in excess of six monthly incomes, and in the case of the unit equivalent to one PLN, the impact of a one-unit change is too scarce. Therefore, the interpretation will apply to changes based on the new unit that is equal to 1,000 PLN.

## 2. Results

Moving on to the analysis of the results, firstly it must be emphasized that the undisputed element is the need to ensure future retirees additional security. G. Ancyparowicz [2012, p. 93] states that the inevitable consequence of capital pensions will be poverty.

A report prepared under the supervision of J. Rutecka [2014, p. 50] for the Polish President – Bronisław Komorowski highlighted the role of incentives, mostly fiscal ones, applied in order to promote participation in voluntary pension schemes. It also stressed the role of the state in the organization of these programs. Undoubtedly, the role of the state should not be reduced solely to the introduction of the aforementioned tax reliefs at different stages of investment (depositing savings, gaining income from investments, payment of benefits), but it should also consist in supervising, regulating, and organizing this market. Taking single and uncoordinated action to promote supplementary pension schemes may turn out to be ineffective. In this case, similar to many other policies (including significant in this regard family policy), taking coordinated action aimed at the final

[2] The number of respondents varies according to individual questions.

result (increasing in the number of people saving for their old age) is essential. Therefore, the state should support the development of appropriate instruments of supporting people saving for their old age, and at the same time regulate this market adequately.

One of the forms to guarantee a decent life in old age may be care provided by younger people, most often a person's children and grandchildren [Afek, Krupa and Walczak 2015, pp. 22–34]. However, as shown by the results stemming from the Social Diagnosis survey, only (or as much as) 11.0% of respondents declared their responsibility for providing care to the elderly. The most important, however, is to relate this above number to the number of people who did not declare any support to be given to the elderly, which is 18.8%. Puzzling in the context of the presented results is the indication by 38.8% of the fact that the question does not apply to them, since they have no elderly parents, parents-in-laws, or even elderly relatives. A thorough analysis of the responses shows that such an answer was also given by young people (e.g., in their twenties). Unfortunately, also due to the results presented, we should avoid a situation where Poles would remain condemned to low pensions paid by the Social Insurance Institution (ZUS) and the uncertain support of younger people.

In connection with the research presented in Table 1, the author conducted a survey on persons who decide to make savings for their old age. To emphasize the importance of this study the aim of saving was extended by an extra element – amounts of savings. Based on the survey, it can be stated that out of more than 11,000 of the surveyed households, only 651, that is only a few per cent, save for their old age and the volume of the savings can be considered significant (in the author's opinion), since they

**Table 1. Answers to the question 'Would you take responsibility for providing care to elderly persons?'**

| Specification | Number | Share (in %) |
|---|---|---|
| Often | 2.440 | 11.0 |
| It happens | 7.064 | 31.9 |
| Never | 4.037 | 18.3 |
| Does not apply (it means a lack of elderly parents, parents-in-law, or relatives) | 8.575 | 38.8 |
| Total | 22.116 | 100.0 |

Source: Own study based on [Social Diagnosis 2015].

exceed the household's half-yearly income[3]. It needs to be noted that few households save for retirement, despite the fact[4] that according to research results, for example, conducted by CBOS [2010, p. 5], Poles rightly believe that their future payments received from pillars I and II will be insufficient for them.

**Table 2. Answers to the question 'What is the household's approximate total value of savings made by persons saving for their old age?'**

| Specification | | The purpose of your household savings: old-age security | | Total |
|---|---|---|---|---|
| | | yes | no | |
| Household savings? | Savings in terms of household income for: | | | |
| | < 1 month | 231 | 1,927 | 2,158 |
| | (1–3 month > | 579 | 1,438 | 2,017 |
| | (3–6 month > | 539 | 705 | 1,244 |
| | (6–12 month > | 410 | 357 | 767 |
| | (1–3 years > | 161 | 85 | 246 |
| | < 3 years | 80 | 39 | 119 |
| Total | | 2,000 | 4,551 | 6,551 |

Source: Own study based on [Social Diagnosis 2015].

Within the work a study was conducted to determine who is saving for their old age and has savings in excess of half-year earnings. For this purpose, a logit regression was applied. The logit analysis conducted covered both factors that can affect the possession of significant savings for old age (*e.g.*, income) and the characteristics of such households (e.g., the number of owned books). The description of the independent variables is contained in Table 3.

Out of eleven dependent variables of the study, seven variables proved to be significant (the insignificant ones were Families, Bank, Dishwasher, and Child education). Despite the fact that the Nagelkerke's R-squared is only 0.137 (the power of explanation of the model), and also due to the nature of the independent variables, the model has a descriptive value. The

[3] If savings in excess of three-year income were considered significant in securing retirement, then only 80 households could be categorized as ones having old-age security.

[4] The work results may not be complete as many people do not treat a mortgage as a retirement saving. However, an owned flat, due to reverse mortgage instruments, may in the future become a source of income.

**Table 3. Descriptive statistics for the independent variables**

| Variable | Nature of the variables | MIN | MAX |
|---|---|---|---|
| Families (number of families in a household) | continuous variable | 0 | 7 |
| People (number of people in a household) | continuous variable | 0 | 17 |
| Income<br>(What was the average monthly net income (in PLN) of your household in 2014?) | continuous variable | 0 | 40 |
| Bank (Does your household use any bank services?) | 0 – no; 1 – yes, | 0 | 1 |
| Loans (Does your household have to pay off loans or credits?) | 0 – no; 1 – yes, | 0 | 1 |
| Dishwasher (Does your household have a dishwasher?) | 0 – no; 1 – yes, | 0 | 1 |
| Insured house (Do you have house insurance?) | 0 – no; 1 – yes, | 0 | 1 |
| Borderlands (Has anyone from your family lived in the Borderlands?) | 0 – no; 1 – yes, | 0 | 1 |
| Place of residence | 0 – rural areas, 1 – towns | 0 | 1 |
| Books (How many books – approximately – are there in your home?) | 1 – none, | 1 | 6 |
| | 2 – up to 25 volumes, | | |
| | 3 – 26–50, | | |
| | 4 – 51–100, | | |
| | 5 – 101 – 500, | | |
| | 6 – more than 500 volumes | | |

Table 3 – cont.

| Variable | Nature of the variables | MIN | MAX |
|---|---|---|---|
| Child education (What level of education would you like your children to attain?) | 1 – basic vocational school, | 1 | 5 |
| | 2 – profiled secondary school, | | |
| | 3 – technical or vocational secondary school, | | |
| | 4 – higher education (Bachelor's degree), | | |
| | 5 – higher education (Master's degree) | | |

Source: Own study based on Social Diagnosis 2015.

**Table 4. Estimates of the logit model after dropping out insignificant variables – the analysed dependence: saving for old age in the amount exceeding the total of six-month savings**

| Specification | B | S.E. | Wald | df | Sig. | Exp (B) | 95% C.I. for Exp (B) | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower | Upper |
| People | –.274 | .039 | 49.046 | 1 | .000 | .761 | .704 | .821 |
| Income | .178 | .016 | 127.224 | 1 | .000 | 1.195 | 1.159 | 1.233 |
| Loans | –.942 | .122 | 59.860 | 1 | .000 | .390 | .307 | .495 |
| Insured house (base = no) | .549 | .113 | 23.669 | 1 | .000 | 1.731 | 1.388 | 2.159 |
| Books (none) | | | 46.858 | 5 | .000 | | | |
| 2 – up to 25 volumes, | .175 | .251 | .490 | 1 | .484 | 1.192 | .729 | 1.947 |
| 3 – 26–50, | .374 | .244 | 2.357 | 1 | .125 | 1.454 | .902 | 2.345 |
| 4 – 51–100, | .823 | .238 | 11.960 | 1 | .001 | 2.278 | 1.429 | 3.632 |
| 5 – 101 – 500, | .885 | .240 | 13.608 | 1 | .000 | 2.423 | 1.514 | 3.878 |
| 6 – more than 500 volumes (base = none) | 1.120 | .267 | 17.656 | 1 | .000 | 3.066 | 1.818 | 5.170 |
| Borderlands (1) (base = no) | .349 | .117 | 8.946 | 1 | .003 | 1.417 | 1.128 | 1.781 |
| Place of residence (base = rural areas) | .269 | .108 | 6.251 | 1 | .012 | 1.309 | 1.060 | 1.616 |
| Cons | –3.274 | .251 | 170.807 | 1 | .000 | .038 | | |
| N = 5940; Log likelihood = 3467.204; Nagelkerke's R-squared = 0.137; Cox–Snell's R-squared = 0.066; Chi-square (11) = 403.563 (0,000); HL test = 8.68 (0.370) | | | | | | | | |

Source: Own study based on [Social Diagnosis 2015].

likelihood ratio test (Chi-square (d.f. = 11) = 403,563, probability 0.000) rejects the null hypothesis of no relationship between the independent variable and savings, and the Hosmer & Lameshow test of the goodness of fit suggests the model is a good fit to the data as $p = 0.370$ (>.05).

A negative impact on accumulating savings for old age is exerted by the possession of any loan and a big number of people in the household. The indicated variables impact significantly the level of savings being made for old age. The occurrence of savings in indebted households is 61% lower. Every additional person in the household reduces the probability of having savings for old age by 23.9%. The influence of both variables is obvious; having a loan can indicate a difficult financial situation of the household, and therefore saving for old age becomes less important. A higher number of inhabitants of a household, usually resulting from a larger number of children, results in increased current consumption spending.

Primarily the level of income and living in a city has positive effects. The increase in income of 1,000 PLN means the likelihood of having savings referred to within the work of more than 19.5%. In cities people are 30.9% more likely to have savings than in rural areas. Over six-month savings for old age have also those with more books and those characterized by risk aversion, *i.e.*, those who have taken out house insurance. In the case of the number of books owned, the impact is significant, since the likelihood of having savings for the last group (more than 500 volumes) increases by 242.3% compared with households without books.

At the end it should be mentioned that having a family member coming from the Borderland is statistically significant and its impact on having savings is positive. Why? Maybe it is correlated with the experiences of family members, called 'family foresight' [di Giulio et al. 2013].

## Conclusions

In Poland the level of support obtained from close relatives is not high, a large proportion of people do not declare the willingness and readiness to help the elderly. Therefore, due to the likely low level of future pensions, the remaining solution is independent saving, which in Poland is not very common.

The State's duty is to balance the budget of the country each year. Also, caring for the household budgets of citizens in the future is the responsibility of the authorities. Increasing Poles' individual retirement savings could

result in the reduction of future state spending, as well as in an increase in the income and consumption of households in the future. Therefore, the creation of rational principles of supporting savers and the entire market with a view to allowing an appropriate level of saving is a duty but also ought to be a priority of the state. A state that approaches future budgets responsibly for sure should take into account future incomes of its citizens [Auerbach, Gokhale and Kotlikoff 1994, pp. 73–93].

When thinking about sustainable development throughout the country, both in economic and social terms, the state should support voluntary and additional saving for old age. At the moment, savings are being made primarily by higher-income individuals who are financially aware and living in cities. Thinking of sustainable development, including the financial security of future retirees, Poles definitely need to be encouraged to save. Incentives should be directed especially to those who remain unconvinced: low-income individuals, those living in rural areas and with a lower level of knowledge, including financial knowledge.

The state should also create effective financial instruments, which will allow making investments in old age. Can the not very popular Individual Retirement Account (IKE), Individual Retirement Security Account (IKZE), or Employee Pension Scheme (PPE) in their current shape solve this situation? – probably not. There is probably a need to implement a different instrument (instruments) that in an appropriate manner, on the one hand, would compel, and on the other hand, encourage Poles to save – in particular those with low incomes.

## References

Adamiak, S., Walczak, D., 2014, *Catholic Social Teaching, Sustainable Development and Social Solidarism in the Context of Social Security*, Copernican Journal of Finance and Accounting, vol. 3, iss. 1, pp. 9–18.

Afek, J., Krupa, D., Walczak, D., 2015, *Opieka nad osobami starszymi w Chinach w kontekście solidarności międzypokoleniowej*, Roczniki Humanistyczne, t. LXIII, z. 9, pp. 21–36.

Ancyparowicz, G., 2012, *Kapitałowe emerytury i renty a ryzyko ubóstwa w Polsce*, in: Hrynkiewicz, J. (red.), *O sytuacji ludzi starszych*, Rządowa Rada Ludnościowa, Warszawa, pp. 83–97.

Attanasio, O., Kitao, S., Violante, G.L., 2007, *Global Demographic Trends and Social Security Reform*, Journal of Monetary Economics, vol. 54, iss. 1, pp. 144–198.

Auerbach, A.J., Gokhale, J., Kotliko, L.J., 1994, *Generational Accounting*: *a Meaningful Way to Evaluate Fiscal Policy*, The Journal of Economic Perspectives, vol. 8, iss. 1, pp. 73–94.

Bloom, D.E., et al., 2007, *Demographic Change*, *Social Security Systems*, *and Savings*, Journal of Monetary Economics, vol. 54, iss. 1, pp. 92–114.

CBOS, 2010, Polacy o dodatkowym oszczędzaniu na emeryturę, http://www.cbos.pl [access: 25.01.2015].

Chybalski, F., Marcinkiewicz, E., 2016, *The Replacement Rate*: *An Imperfect Indicator of Pension Adequacy in Cross-Country Analyses*, Social Indicators Research, vol. 126, iss. 1, pp. 102–103.

de Groot, O.J., 2007, *Generational Accounting in Latvia*: *Time for Action*, Baltic Journal of Economics, vol. 7, iss. 1, pp. 35–51.

di Giulio, P. et. al., 2013, *A Family-related Foresight Approach*, *Families and Societie*,. Working Paper Series 5/2013, The European Union's Seventh Framework Programme (FP7/2007–2013).

Dziawgo, D., Dziawgo, L., 2014, *Społeczna ewolucja rynku finansowego. CSR i IR – wybrane aspekty*, Nauki o Finansach, nr 1(18), pp. 29–39.

Gabrusewicz, T., 2013, *Sustainability Accounting – Definition and Trends*, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, nr 302, pp. 37–46.

Gonzalez-Eiras, M., Niepelt, D., 2008, *The Future of Social Security*, Journal of Monetary Economics, vol. 55, iss. 2, pp. 197–218.

Hondroyiannis, G., 2006, *Private Saving Determinants in European Countries*: *A Panel Cointegration Approach*, The Social Science Journal, vol. 43, iss. 4, pp. 553–569.

Kitao, S., 2014, *Sustainable Social Security*: *Four Options*, Review of Economic Dynamics, vol. 17, iss. 4, pp. 756–779.

Krupa, D., 2011, *Fundusze inwestycyjne w zabezpieczeniu emerytalnym w państwach UE*, Polityka Społeczna, numer specjalny: Problemy zabezpieczenia emerytalnego w Polsce i na świecie, cz. II, pp. 48–50.

Pieńkowska-Kamieniecka, S., 2014, *Market of Equity Release Services in Poland*, Olsztyn Economic Journal, pp. 357–367.

Rutecka, J., Bielawska, K., Petru, R., Pieńkowska-Kamieniecka, S., Szczepański, M., Żukowski, M., 2014, *Dodatkowy system emerytalny w Polsce – diagnoza i rekomendacje zmian*, Towarzystwo Ekonomistów Polskich, Warszawa.

Rutecka, J., 2014, *Dodatkowe zabezpieczenie emerytalne – charakterystyka i czynniki rozwoju*, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, nr 342, pp. 256–266.

Singh, R.K., et al., 2009, *An Overview of Sustainability Assessment Methodologies*, Ecological indicators, vol. 9, iss. 2, pp. 189–212.

Social Diagnosis, 2015: database, http://www.diagnoza.com [access: 25.01.2016].

White, L., Lee, G.J., 2009, *Operational Research and Sustainable Development*: *Tackling the Social Dimension*, European Journal of Operational Research, vol. 193, iss. 3, pp. 683–692.