

# Diagnosis of the behavioural basis of decisions made in the area of pension provision and application in stimulating additional savings for old age

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The paper draws attention to the behavioural aspects of decisions in the area of supplementary pensions and indicates the use that can be made of behavioural economics achievements in stimulating long-term savings for old age. The types of cognitive errors that affect the retirement savings decisions are presented and discussed, as well as automatic enrolment options and saving rules applicable in occupational pension plans conducive to increasing retirement savings.

**Key words:** automatic investment strategies, automatic pension scheme, behavioural economics, cognitive errors, escalation of contribution

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## Introduction

Achieving and maintaining an adequate living standards in retirement is the problem for many people in the world. This also applies to Poland, where this problem will continue to grow in the face of the ageing of the population and a reduced retirement age. There is a clear increase in the number of people receiving benefits in the defined-contribution system at an increasingly lower level, which is reflected in a decrease in the ratio of average pension to average wage<sup>1</sup> (from 59.8% in 2014 to 52.9% in 2018).<sup>2</sup> In view of these changes, additional savings for retirement are becoming increasingly important in relation to the basic security itself.<sup>3</sup>

Different factors affect both retirement planning decisions and decisions on retirement age. While the most common emphasis is placed on institutional, economic or fiscal barriers to savings,<sup>4</sup> the behavioural economics trend indicates that there are other equally important obstacles to accumulating savings for old age.

Classical economic theory assumes that when making decisions, people maximise the utility function. During this process, they analyse and properly balance all the possible constraints and preferences.<sup>5</sup> They efficiently consider all possible options and choose the one that is best for them. What is more, everything takes place with fully accessible and complete information,<sup>6</sup> where informed and financially competent consumers act in their own best interest.<sup>7</sup> On the other hand, proponents of behavioural economics believe that people do not behave exactly as predicted by conventional knowledge, in particular in the context of complex decisions, including retirement decisions.<sup>8</sup> Richard H. Thaler claims that if we want to develop useful theories about how people save for retirement, we should not assume that they behave as if they were experts.<sup>9</sup> However, one should undoubtedly note and agree with Marek Szczepański that

1 Average monthly wage in the national economy reduced by pension and sickness insurance contributions deducted from insured persons' earnings.

2 S. Buchholtz, A. Chłoń-Domińczak, M. Góra, *The Polish NDC Scheme: Success in the Face of Adversity*, "Social Protection & Jobs. Discussion Paper" 2019, No. 1904, pp. 32–33.

3 J. Rutecka, *Dodatkowe zabezpieczenie emerytalne – charakterystyka i czynniki rozwoju*, "Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu" 2014, No. 342, p. 256.

4 M. Szczepański, *Badanie możliwości wykorzystania ekonomii behawioralnej w reformowaniu systemów emerytalnych*, "Finanse, Rynki Finansowe, Ubezpieczenia" 2017, No. 5 (89), Part 1, p. 424.

5 M.A. Knoll, *The Role of Behavioral Economics and Behavioral Decision Making in Americans' Retirement Savings Decisions*, "Social Security Bulletin" 2010, No. 70 (4), pp. 1–23.

6 *The Individual's Saving Decision*, London 2007, p. 8.

7 *Improving Financial Education Effectiveness Through Behavioural Economics. OECD Key Findings and Way Forward*, 2013, p. 7.

8 A. Fertig, J. Lefkowitz, A. Fishbane, *Using Behavioral Science to Increase Retirement Savings. A New Look at Voluntary Pension Contributions in Mexico*, 2015, p. 6, [https://www.ideas42.org/wp-content/uploads/2015/11/142\\_571\\_MexicoPensionsReport\\_ENG\\_final\\_digital.pdf](https://www.ideas42.org/wp-content/uploads/2015/11/142_571_MexicoPensionsReport_ENG_final_digital.pdf) (online access: 19.10.2019).

9 R.H. Thaler, *Zachowania niepoprawne. Tworzenie ekonomii behawioralnej*, Poznań 2018, p. 71.

behavioural economics has not replaced mainstream economics with its assumption of the rationality of the managing entity, but it complements it and opens up new, interesting cognitive perspectives.<sup>10</sup>

The behavioural perspective draws attention to the fact that psychological, institutional, cultural and biological factors also influence the way individuals behave.<sup>11</sup> Brigitte Madrian<sup>12</sup> also points out that sociology, anthropology and even cognitive neuroscience can enrich standard economic models with their ability to understand and predict human behaviour, shape public policies, and achieve better economic results for businesses.

The aim of the study is, on the one hand, to present the behavioural aspects of decisions in the area of supplementary pensions and, on the other hand, to indicate how the achievements of behavioural economics can be used to stimulate long-term savings for old age.

As an example, one could mention automatic enrolment schemes, which are of particular interest to behavioural economists and which have been recently implemented in many countries around the world, including Poland.

Under the provisions of the Act on Employee Capital Plans,<sup>13</sup> which entered into force on 1 January 2019, employers are obliged to establish Employee Capital Plans (ECP) [pracownicze plany kapitałowe, PPK]. However, the order in which ECPs must be created depends on the size and type of the enterprise. At the earliest (from 1 July 2019), the Act applies to the largest enterprises, *i.e.*, those with more than 250 employees, and at the latest (from 1 January 2021) to other employing entities, *i.e.*, entities other than those employing more than 20 people, including too public finance sector entities. This is an automatic enrolment scheme based on the experience of other countries. Employees enrolled may resign from saving in the plan.

## Behavioural aspects of the decision on supplementary retirement savings

Personal finance is an interesting and common area of interest for behavioural economists. Consumer choices and decisions regarding financial products, including pension products, are particularly vulnerable to numerous behavioural biases. Classified in the area of preferences, beliefs and decision-making, they are influenced by various factors (Figure 1).

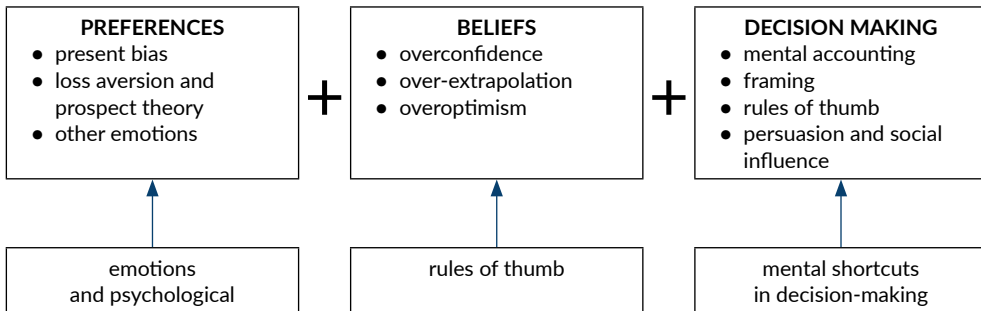
<sup>10</sup> M. Szczepański, *op. cit.*, p. 426.

<sup>11</sup> *Handbook of Contemporary Behavioral Economics. Foundations and Development*, ed. M. Altman, New York 2015, p. XVII.

<sup>12</sup> B. Madrian, *Lessons from Behavioral Economics for Promoting Retirement Income Security*, Washington DC 2018, p. 2, <http://www.nber.org/2018rrc/slides/1/2.5%20-%20Lunch%20Speaker%20-%20Madrian.pdf> (online access: 22.6.2019).

<sup>13</sup> Act of 4 October 2018 on Employee Capital Plans (Journal of Laws item 2215).

**Figure 1.** The most common behavioural biases in the process of choosing pension products and factors affecting them



Source: K. Erta, S. Hunt *et al.*, *Applying Behavioural Economics at the Financial Conduct Authority*, “Occasional Paper” 2013, No. 1, pp. 15–19

The present bias, also expressed in terms of short-sightedness (myopia), manifests itself in excessive attempts to obtain an advantage now, *i.e.*, preferring present consumption to future consumption.<sup>14</sup> In behavioural economics, much attention is focused on the time (temporal) discounting theory, which involves investigating differences in values (*e.g.*, of money or goods) at different points of time.<sup>15</sup> It turns out that people show a preference for rewards that arrive sooner rather than later. Robert Strotz<sup>16</sup> was the first in the world to prove that only when some advantages can be obtained at two points in time in the future, are people willing to choose the more distant, greater advantage. In short points of time, we prefer even lower, but faster to gain advantages (profits). An important conclusion from studies by Gopi Goda, Matthew Levy *et al.*<sup>17</sup> is that less preference for the *status quo* leads to higher regular contributions to the pension plan, greater wealth and a greater propensity to invest in more liquid assets. Therefore, time plays a significant role in pre-retirement decisions, especially as most people are characterised by a high discount rate of time<sup>18</sup> (with excessive attachment to profits “here and now”).

In their prospect theory, Daniel Kahneman and Amos Tversky<sup>19</sup> refer to the question of profit and loss assessment in relation to the reference point, which is usually zero profit/loss.<sup>20</sup> Since from a psychological point of view, losses are felt more strongly than

14 F. Chybalski, E. Marcinkiewicz, *Myopic Behaviour and State Involvement in a Pension System: A Cross-section Study for OECD Countries*, “*Ekonomista*” 2018, No. 1, pp. 68-88.

15 S. Frederick, G. Loewenstein, T. O’Donoghue, *Time Discounting and Time Preference: A Critical Review*, “*Journal of Economic Literature*” 2002, No. 40, pp. 351-401.

16 R.H. Strotz, *Myopia and Inconsistency in Dynamic Utility Maximization*, “*Review of Economic Studies*” 1956, No. 23, pp. 165-180.

17 G.S. Goda, M. Levy *et al.*, *Predicting Retirement Savings Using Survey Measures of Exponential-Growth Bias and Present Bias*, “*IZA DP*” 2018, No. 11762, pp. 34-35.

18 N. Goodwin, J. Harris *et al.*, *Microeconomics in Context. Fourth Edition*, New York 2018, p. 149.

19 D. Kahneman, A. Tversky, *Prospect Theory. An Analysis of Decisions under Risk*, “*Econometrica*” 1979, Vol. 47, No. 2, pp. 263-292.

20 B. Dzik, *Daniel Kahneman i Amos Tversky*, “*Decyzje*” 2004, No. 1, p. 131.

profits,<sup>21</sup> even twice as strong,<sup>22</sup> paradoxically, people with a loss aversion risk increasing potential losses. At the same time, people are too “slow” (showing inertia and procrastination) to stop loss accumulation. Our behaviour may be also affected by emotions, such as stress, anxiety or fear that in the future we will regret missed opportunities, not seized in the past.<sup>23</sup> The emotionality of decisions is certainly an undervalued area, which can be influenced both in order to suppress them – for suboptimal actions taken under their influence (*e.g.*, in the case of buying insurance cover, which is excessive in relation to the needs for peace of “mind”<sup>24</sup>), and to stimulate them – to induce an individual to accumulate retirement savings, if he/she did not have them earlier, also for behavioural reasons.

Behavioural economists also draw attention to overconfidence or overoptimism in decision-making. People tend to overestimate their own opportunities and abilities. For example, the research of Patrick R. Heck, Daniel J. Simons, Christopher F. Chabris<sup>25</sup> shows that 65% of Americans, especially men and better educated people, believe that they are smarter than everyone else. Overconfidence in finance may relate to financial knowledge (subjective knowledge higher than objective knowledge<sup>26</sup>) or to retirement investments, resulting in underestimation of the amount of capital needed for old age.<sup>27</sup> In addition, as pointed out by John Turner,<sup>28</sup> it can result in overestimation of the investor’s ability to choose the right investment portfolio, as well as in too aggressive investments. If this is also linked with over-extrapolation, there is a good chance that overoptimistic estimates will be made as to the level of capital that a person concerned will have in his or her old age. Most people do not know statistics, and make decisions based on insufficient experience and observations, *e.g.*, covering too short a time horizon. This can be reflected, for example, in the case of an intention to invest in certain long-term investment funds based on the rates of return achieved by them in too short a period of time.

Moreover, people are guided in their beliefs and decisions by heuristics, *i.e.*, rules that control mental processes, through which they find solutions to problems encountered.<sup>29</sup> In the case of retirement decisions it is usually the so-called rule of

21 N. Sirven, T. Barnay, *Expectations, Loss Aversion, and Retirement Decisions in the Context of the 2009 Crisis in Europe*, 2016, p. 2, <https://halshs.archives-ouvertes.fr/halshs-01374462> (online access: 24.6.2019).

22 M. Rabin, R.H. Thaler, *Anomalies. Risk Aversion*, “Journal of Economic Perspectives” 2001, Vol. 15, No. 1, p. 226.

23 K. Erta, S. Hunt *et al.*, *Applying Behavioural Economics at the Financial Conduct Authority*, “Occasional Paper” 2013, No. 1, p. 5.

24 *Ibid*, p. 17.

25 P. Heck, D.J. Simons, C.F. Chabris, *65% of Americans Believe They Are Above Average in Intelligence: Results of Two Nationally Representative Surveys*, “PLoS ONE” 2018, No. 13 (7), pp. 1-11.

26 S. Białowąs, *Subjective vs. Objective Assessment Of Financial Literacy – Do Beliefs Meet Reality?*, “Journal of Insurance, Financial Markets and Consumer Protection” 2018, No. 29 (3), pp. 27-36.

27 S. Pieńkowska-Kamieniecka, *Wybrane aspekty dodatkowego oszczędzania emerytalnego – perspektywa behawioralna*, “Studia Oeconomica Posnaniensia” 2017, Vol. 5, No. 10, p. 16.

28 J. Turner, *Designing 401(K) Plans That Encourage Retirement Savings: Lessons from Behavioral Finance*, “Issue Brief” 2006, No. 80, p. 12.

29 A. Buczek, *Heurystyka* [in:] *Powszechna encyklopedia filozofii*, Vol. 3, Lublin 2002, p. 418.

thumb, which consists in making often even the most important choices in life in a simple way. As an example we may mention ending professional activity at the minimum statutory retirement age or as soon as the individual replacement rate reaches the assumed level (*e.g.*, 75% of the current remuneration).<sup>30</sup> In terms of pre-retirement decisions, the rule of thumb may manifest itself, *e.g.*, in the choice of the “first better” pension product.<sup>31</sup>

Behavioural economics also focuses on the way people process the information they receive. People may behave differently even in two identical situations, depending on how the information or problem is presented to them (from a profit or loss perspective).<sup>32</sup> Morris Altman points out that the framing effect can be positively used in prospectuses and documents forming the content of investment products (including pension products) in such a way as to help people understand this content (*e.g.*, easily accessible and understandable key terms; appropriate letter size in the document).

On the other hand, Alain Samson<sup>33</sup> refers to the social environment and claims that our preferences are shaped by altruism, reciprocity, fairness or trust, *e.g.*, in financial advisers and the pension products and solutions that they propose.

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## Justification for automatic supplementary retirement saving schemes

In terms of behavioural economics, automatic occupational pension plans play their role in increasing participation in supplementary pension provision increasingly strongly in the world. Paul Secunda<sup>34</sup> claims that schemes based on the achievements of behavioural economics are a more effective solution compared to completely voluntary pension schemes. Their design takes into account heuristics and the mistakes made by individuals, which means that the employee is “pushed” towards well-diversified and low-cost default pension funds, organised and regulated by the state. Numerous studies show that even if people are aware of the low level of benefits they will receive in retirement and declare their intention to save, inertia, procrastination or loss aversion effectively discourage them or make it difficult for them to do so. It is enough to read the results of the study by the Organisation for Economic Co-operation and Development International Network on Financial Education (OECD/INFE), which shows that only

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<sup>30</sup> G. Burtless, *Social Norms, Rules of Thumb, and Retirement: Evidence for Rationality in Retirement Planning*, 2004, pp. 2–17, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.504.791&rep=rep1&type=pdf> (online access: 26.6.2019).

<sup>31</sup> K. Erta, S. Hunt *et al.*, *op. cit.*, p. 19.

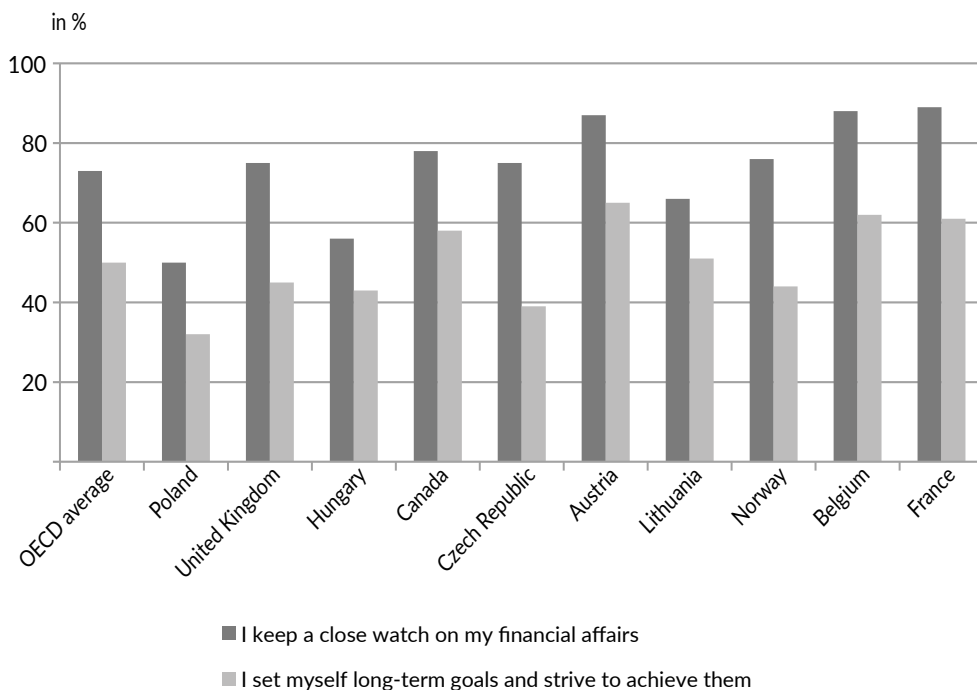
<sup>32</sup> A. Tversky, D. Kahneman, *Rational Choice and the Framing of Decisions*, “The Journal of Business” 1986, Vol. 59, No. 4, Part 2, p. 257.

<sup>33</sup> A. Samson, *Behavioral Science: Theory And Practice* [in:] *The Behavioral Economics Guide 2015*, ed. A. Samson, 2015, p. 1, <http://www.behavioraleconomics.com/BEGuide2015.pdf> (online access: 26.6.2019).

<sup>34</sup> P.M. Secunda, *The Behavioral Economic Case for Paternalistic Workplace Retirement Plans*, “Indiana Law Journal” 2016, Vol. 91, Issue 2, Article 8, p. 505.

50% of persons set long-term goals (including those related to retirement) and strive to achieve them. In Poland, this result is at the lowest level among all OECD countries (Diagram 1).

**Diagram 1.** Approach to long-term financial planning in selected OECD countries [in % of responses]



Source: own study based on *OECD/INFE International Survey of Adult Financial Literacy Competencies*, Paris 2016, p. 37

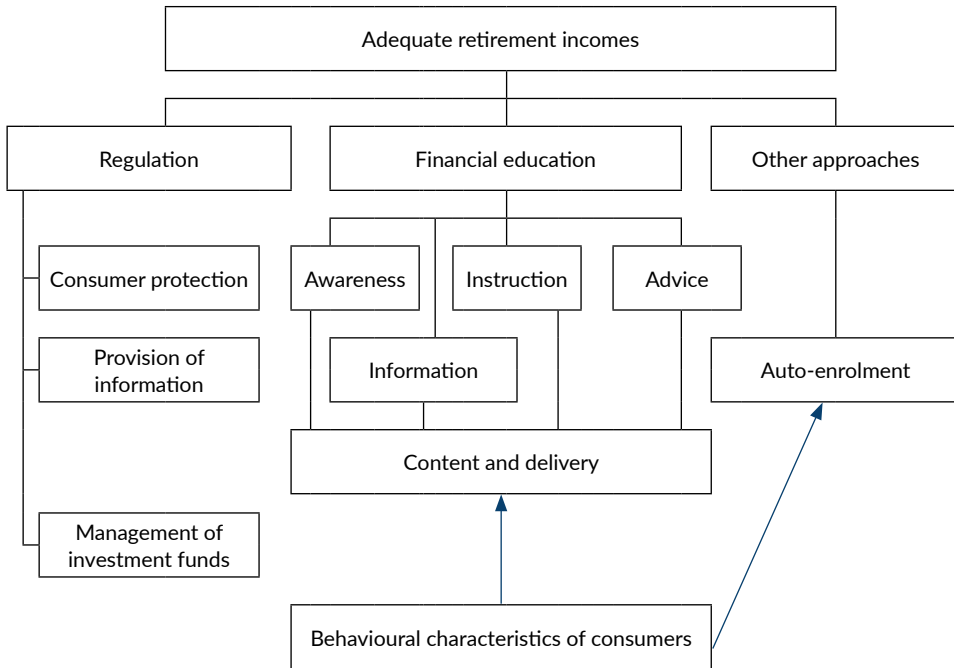
It should be noted that most employees do not have sufficient knowledge of financial markets and investments.<sup>35</sup> Although financial education programmes are undoubtedly needed to raise financial awareness they have, however, a limited impact on appropriate financial market behaviour. Knowledge alone proves to be insufficient to improve the results of a significant part of the population in achieving better financial security in old age.<sup>36</sup> Financial education should be supported by other measures, such as consumer protection regulations.<sup>37</sup> The effectiveness of pension schemes referred to as auto-enrolment schemes, is also mentioned (Diagram 2).

<sup>35</sup> M. Szczepański, *op. cit.*, p. 426.

<sup>36</sup> S. Vernon, *Beyond Defaults: Using Behavioral Economics to Improve Retirement Outcomes*, “Benefits Magazine” 2019, Vol. 56, No. 3, p. 44.

<sup>37</sup> See T. Szumlicz, *Świadomość ryzyka społecznego jako podstawa wiedzy o systemie ubezpieczeń społecznych*, “Ubezpieczenia Społeczne. Teoria i praktyka” 2017, No. 1 (132), pp. 3–16.

**Diagram 2.** Tools for achieving adequate retirement incomes



Source: Organisation for Economic Co-operation and Development, *Financial Education and Saving for Retirement*, p. 12, <http://www.oecd.org/finance/privatepensions/39197801.pdf> (online access: 26.6.2019)

Automatic pension schemes are based on the concept of paternalism, although they do not exist in a pure form. Gerald Dworkin understands paternalism as the interference with a person’s liberty or actions justified by his/her well-being, interest, values, happiness and needs.<sup>38</sup> Perceiving unfavourable connotations of paternalism in legal and public discourse, Nicolas Cornell<sup>39</sup> points out that it assumes that the person concerned is not able to make decisions favourable to themselves, that they acts irrationally. On the other hand, David Birks claims that paternalism is harmful only when it undermines the autonomy (independence) of the individual.<sup>40</sup> Richard H. Thaler and Cass R. Sunstein refer to a situation when the state tries to improve the welfare of society by influencing the choices of its members in a non-invasive manner, as “libertarian paternalism.”<sup>41</sup> Automatic pension schemes are, in principle, the opt-out schemes, *i.e.*, the employer usually organises the scheme on a mandatory basis, and the employee is automatically enrolled and participates therein until they decide to stop saving. This means that some freedom of action is maintained for the participants. For this reason, such schemes are

38 G. Dworkin, *Paternalism* [in:] *Morality and the Law*, ed. R.A. Wasserstrom, Belmont 1971, p. 181.

39 N. Cornell, *A Third Theory of Paternalism*, “Michigan Law Review” 2015, Vol. 113, pp. 1296-1297.

40 D. Birks, *How Wrong is Paternalism*, “Journal of Moral Philosophy” 2018, No. 15, p. 136.

41 R.H. Thaler, C.R. Sunstein, *Libertarian Paternalism*, “The American Economic Review” 2003, Vol. 93, No. 2, p. 176.



classified as voluntary,<sup>42</sup> because they give employees an opportunity to “do what they want.” Thus, the libertarian paternalism of R.H. Thaler and C.R. Sunstein, built on the concept of Milton Friedman, according to the principle that people “should be free to choose,<sup>43</sup>” refers, on the one hand, to the direct or indirect influence of the state on people’s choices (“paternalism”), and on the other hand to the fact that the final choice belongs to the individual (“libertarian”).

## Functioning of automatic solutions in occupational pension plans

Behavioural economists point out that decisions and choices can be influenced by using so-called choice architecture.<sup>44</sup> The way in which solutions in the pension scheme are designed and presented is of great importance for the results achieved in the scheme.<sup>45</sup> Automatic entry and saving in the plan is one of the solutions based on choice architecture.

Automation in the supplementary occupational pension scheme concerns three main areas: automatic enrolment of employees into the pension plan, automatic investment strategy and automatic increase in the contribution rate. In addition, a default scheme provider is proposed to facilitate the choice. Not all of these mechanisms always come together. The basic solution is the automatic enrolment of employees to the plan, which for employers may be mandatory under law (*e.g.*, New Zealand, the United Kingdom, Poland) or voluntary (the United States, Canada, Germany).

The basic<sup>46</sup> characteristics of automatic pension schemes in the world are presented in Table 1.

Auto-enrolment schemes also use automatic transfer of funds from the remuneration to a pension fund account, which helps to enforce the employee’s self-control and causes that their potential loss aversion ceases to be an obstacle to saving for old age. The lower net remuneration, which includes automatic deductions for the pension plan, becomes the *status quo*, a new benchmark. According to the simple rule “If you don’t have something, you don’t lose it,” an employee has no sense of losing money, when deductions for future retirement are included in the remuneration that he or she receives,<sup>47</sup> while out-of-pocket expenses are usually more often felt.

42 *Private Pensions: OECD Classification and Glossary*, Paris 2005, p. 52.

43 M. Friedman, R. Friedman, *Free to Choose: A Personal Statement*, New York 1980.

44 W. Siczekowski, *Behawioralne aspekty decyzji dotyczących dodatkowego zabezpieczenia emerytalnego (wnioski dla Polski)*, “Wiadomości Ubezpieczeniowe” 2018, No. 4, p. 22.

45 M.M. Kane, *Overcoming Obstacles to Retirement Plan Success. Inertia, Myopia and Loss Aversion*, “Journal of Pension Benefits” 2014, p. 2, <http://plansponsorconsultants.com/wp-content/uploads/2014/01/Article-Jan-2014.pdf> (online access: 26.6.2019).

46 For more, see *e.g.*, S. Pieńkowska-Kamieniecka, *Rola... op. cit.*, pp. 295-296.

47 M.A. Knoll, *op. cit.*, p. 11.

**Table 1.** Synthetic characteristics of automatic pension schemes in the world

Country (implementation date)	Degree of freedom of creation	Contribution – employer	Contribution – employee	Surcharge – state	Opt-out
Chile (2012)	compulsory	10% of the assessment basis (payments to individual pension accounts)		-	at the time of submitting tax returns
Canada (2012)	creation possible only in some provinces (in Quebec – compulsory)	voluntary	voluntary	-	60 days
New Zealand (2007)	compulsory	3% to choose (“default contribution”), 4%, 8% as well as 6% and 10% (from 1.4.2019)	min. 3%	welcome surcharge 1,000 NZD – to 2015; subsidies to employee contributions 50 cents to each 1 NZD – maximum 521.43 NZD/year	between 2nd and 8th week
Germany (2018)	voluntary	depending on collective agreements, max. 4% assessment basis	depending on collective agreements	-	at any time
Poland (2019)	compulsory	compulsory, min. 1.5%, max. 4%	compulsory, min. 2%, max. 4%	welcome surcharge 250 PLN, annual welcome surcharge of 240 PLN	at any time, re-enrolment every 4 years
The United States	1998 – voluntary (occupational plans)	depending on the rules set	depending on the rules set	-	90 days
	2017 – auto-IRA, compulsory in some states	none	depending on the state	-	depending on the state
The United Kingdom (2012)	compulsory	from 6 April 2019, 3% on eligible income, i.e., in the range from 6,136 GBP and 50,000 GBP (2019/2020).	from 6 April 2019, 5% on eligible income, i.e., in the range from 6,136 GBP and 50,000 GBP (2019/2020).	1% (in the form of a tax credit in the contribution financed by the employee)	1 month, re-enrolment every 3 years
Italy (2007)	compulsory	6.91%	voluntary	-	6 months
Turkey (2017)	compulsory	3% of gross wage/salary	voluntary	25% as matching contribution; welcome surcharge TRL 1,000; 5% state surcharge in the case of benefits in the form of an annuit (longer than 10 years)	2 months, re-enrolment every 3 years

NDA – No Data Available

Source: own study based on S. Pieńkowska-Kamieniecka, *Rola i zakres udziału pracodawców we wspieraniu długoterminowych oszczędności emerytalnych – przykład programów automatycznego zapisu* [in:] *Długoterminowe oszczędzanie. Postawy, strategie i wyzwania*, ed. J. Rutecka-Góra, Warszawa 2016, pp. 295-296; S. Pieńkowska-Kamieniecka, *Automatyczne plany emerytalne w systemie dodatkowego zabezpieczenia emerytalnego – przesłanki tworzenia i funkcjonowania* [in:] *Doubezpieczenie społeczne. Idea i kontynuacja*, ed. M. Kawiński, Warszawa 2015; *OECD Pension Outlook 2018*, Paris 2018, p. 148; *OECD Economic Survey 2016 – Germany*, Paris 2016, p. 101; N. Paklina, *Role of Pension Supervisory Authorities in Automatic Enrolment*, “IOPS Working Papers on Effective Pensions Supervision” 2014, No. 22; IOPS Countries Profiles – Turkey, June 2017

The experience of countries that have introduced automatic enrolment schemes shows that participation rates in supplementary pension schemes are definitely higher in a situation where inertia (inactivity) leads to participation in the scheme than in the reverse scenario.<sup>48</sup> As early as 2001, Brigitte Madrian and Denis Shea<sup>49</sup> showed that the introduction of automatic enrolment in 401(k) occupational plans in the United States increased the participation rates of newly hired employees in these plans from 49% to 86%. Also the introduction of the KiwiSaver scheme in New Zealand in 2007 (with automatic enrolment) resulted in a sharp increase in the supplementary pension coverage rate from 15.2% (end-2007) to 64.4% (end-2013). In turn, in the United Kingdom, where auto-enrolment schemes were introduced in 2012, the rate of participation of private sector employees in supplementary pension schemes increased from 26% in 2011 to 35% in 2013.<sup>50</sup>

An analysis of the solutions used in auto-enrolment to occupational pension plans shows that employees who have to be enrolled to the plan (*e.g.*, according to an age or income criterion) automatically become its participants until, at any or specified time (*e.g.*, several weeks) they make a declaration of withdrawal from the plan. At this point, an important issue needs to be highlighted. Although the Polish solution adopted within the framework of employee capital plans seems to function similarly as in other countries, it is based however on the principle of the possibility of “withdrawing” from the plan, *i.e.*, resigning from saving in ECP, *de facto* before the employee is automatically enrolled to the plan by the employer. The employer has been obliged to conclude an ECP management agreement, on behalf of and for all persons employed, on specific dates (*e.g.*, at entities employing at least 250 persons as of 31 December 2018 – until 12 November 2019), unless they submit a declaration of resignation from making payments to ECP before that date.<sup>51</sup> Therefore, contrary to the solutions adopted in other countries, an automatic choice of the default option, which is saving in ECP, may not materialise at all if an active choice – not to make savings – is made before the conclusion of the ECP management agreement, on behalf of and for a given employee. The percentage analysis of employees’ resignation from saving in ECP in Poland before the automatic enrolment will certainly be an interesting area of comparative research in relation to other countries.

To overcome problems with self-control and other behavioural prejudices, Richard H. Thaler and Shlomo Benartzi<sup>52</sup> proposed, as a supplement to the auto-enrolment in the pension plan, a mechanism of automatic increase in the contribution rate, thus aiming at an automatic increase in savings adequate to the achieved income. In their

48 *Ibid*, p. 7.

49 B.C. Madrian, D.F. Shea, *The Power of Suggestion: Inertia in 401(k) Participation and Saving Behavior*, “Quarterly Journal of Economics” 2001, No. 116, pp. 1149-1225.

50 *Increasing Private Pension Coverage and Automatic Enrolment Schemes: Evidence From Six OECD Countries* [in:] *OECD Pension Outlook 2014*, Paris 2014, p. 152.

51 See Art. 134(2) of the ECP Act and *Niezbędnik pracodawcy. Pracownicze Plany Kapitałowe*, p. 19, [https://www.mojepk.pl/dam/jcr:9da660c8-9859-429b-b23b-481d68fe6a47/Niezbędnik\\_pracodawcy\\_v.1.1.pdf](https://www.mojepk.pl/dam/jcr:9da660c8-9859-429b-b23b-481d68fe6a47/Niezbędnik_pracodawcy_v.1.1.pdf) (online access: 16.7.2019).

52 R.H. Thaler, S. Benartzi, *Save More Tomorrow™: Using Behavioral Economics to Increase Employee Saving*, “Journal of Political Economy” 2004, No. 112, pp. 164–187.

proprietary SMarT (Save More Tomorrow) plan, the contribution rate increases with each increase in the remuneration until it reaches the set maximum. At that time, despite the nominal increase in contribution charges, the employee still does not leave the plan, because from a behavioural point of view, the inertia and tendency to maintain the *status quo* effectively prevent them from doing so. The plan proved to be already a success in the first companies in which it was been implemented. 78% of participants in the 401(k) plans agreed to an automatic escalation of the contribution, and 98% of them, after a two-fold increase in the contribution rate, still remained in the plan.

The Callan Institute study of the US market shows that in 2018, about 71% of private sector employers offered supplementary automatic pension schemes for their employees. Most of them also offered an option of automatic increase in the contribution (70.8% in 2018; compared to 52.8% in 2014).<sup>53</sup> Also, in response to the low level of savings in auto-enrolment schemes in the United Kingdom, the two-fold increase in the minimum rate of contribution paid to these schemes, here introduced by the government,<sup>54</sup> did not affect the market of supplementary pension security. Moreover, the opt-out scale was even smaller after the increase in the contribution rate than before. The opt-out rate among persons included in the scheme in the months April-June 2018 amounted to 4.7% compared to 5.6% for the previous four years of scheme operation.<sup>55</sup>

The problem of low payments concerns not only compulsory contributions, but also additional contributions. In New Zealand, additional payments by KiwiSaver participants in 2018 accounted for less than 1% of the total contributions of employees and employers.<sup>56</sup> The situation is similar in Poland, where in 2018 additional contributions accounted for only 3% of total payments<sup>57</sup> to employee occupational pension schemes (OPS). Based on experience with the operation of automatic schemes in the United States and the United Kingdom, it cannot be excluded that also in Poland the minimum rates of contributions to ECP will increase in the future.

Another automatic solution based on the achievements of behavioural economics is the use of default investment strategies. This is also widely used in automatic occupational pension plans in the world. S. Benartzi and R.H. Thaler<sup>58</sup> justify the introduction of default investment options by the fact that employees left alone, having a choice of many funds in which they can invest their savings, most often follow the strategy of “naïve” diversification. Relying on the rules of thumb and heuristics, they allocate their resources evenly between the available funds (according to the 1/n rule) and achieve

53 *2018 Defined Contribution Trends*, p. 18, <https://www.callan.com/wp-content/uploads/2018/01/Callan-2018-DC-Survey.pl> (online access: 16.7.2019).

54 With a total of 2% for employee and employer in 2012 and subsequent years up to 5% from April 2018 and 8% from April 2019, see J. Cribb, C. Emmerson, *What Happens When Employers Are Obligated To Nudge? Automatic Enrolment and Pension Saving In The UK*, “IFS Working Papers” 2016, No. W16/19, p. 11.

55 *Automatic Enrolment Evaluation Report 2018*, London 2018, p. 59.

56 <https://www.kiwisaver.govt.nz/statistics/annual/contributions/> (online access: 22.8.2019).

57 *Pracownicze programy emerytalne w 2018 roku*, Warszawa 2019, p. 18.

58 S. Benartzi, R.H. Thaler, *Naïve Diversification Strategies in Defined Contribution Saving Plans*, “The American Economic Review” 2001, Vol. 91, No. 1, pp. 79-98.

perverse (other than intended) investment effects. Default investment strategies are a response to the low financial and investment knowledge of future pensioners, as well as to their low involvement in the management of their investment portfolio. They may take a balanced form, with equally distributed (allocated) contribution to specific funds throughout the entire saving period, or the form of investment in life-cycle funds. The latter has also been the main trend in recent years, particularly in the United States, in the default investment strategy in automatic pension schemes. A variation of the life-cycle strategy are defined-date funds where the investment portfolio is based on an expected retirement date with gradual reduction of investment risk. The investment structure is automatically adjusted to the current age of the participant.<sup>59</sup> In the opinion of experts, an automatic reduction of exposure to risky assets when the saver approaches retirement age best serves the function of capital protection, taking into account the assumptions of behavioural economics.<sup>60</sup>

As regards the ECP market in Poland, the key question nowadays is what will be the scale of withdrawals from the scheme. Undoubtedly, it is difficult to estimate, but based on the experience of countries that were the first in the world to introduce mandatory auto-enrolment in a pension scheme, the forecasts in this respect may be optimistic. In New Zealand, in the first six years after the introduction of KiwiSaver, the opt-out rate dropped by about 20% (to about 30% in 2013). Also in the United Kingdom it is lower than initially assumed (about 25%<sup>61</sup>). In the years 2014–2018, only about 5.5% of participants of the auto-enrolment scheme made an active decision to leave the scheme on an average annual basis, although the opt-out percentage was the highest among the top earners (7.4% in 2017/2018).<sup>62</sup> Similarly, and here also in Poland, people with the highest incomes may be more often interested in leaving the scheme, especially as in occupational capital plans, unlike in the public system, there is no limitation as to the contribution assessment base.<sup>63</sup> Therefore, payments to ECP will come from every remuneration from which contributions for the universal pension insurance are calculated.

According to preliminary government calculations, approximately 11.5 million employees will be enrolled to the ECP, with a participation rate of about 50% deemed a success.<sup>64</sup> This result is theoretically confirmed in one of the first surveys on automatic pension plans<sup>65</sup> in Poland, which shows that about 65% of respondents declare that they

59 Organisation for Economic Co-operation and Development, *OECD Pension Outlook*, Paris 2018, p. 164.

60 A. Soldek, *Polityka inwestycyjna dobrowolnych funduszy emerytalnych – analiza i rekomendacje* [in:] *Współczesne zabezpieczenie emerytalne. Wybrane aspekty ekonomiczne, finansowe i demograficzne*, ed. F. Chybalski, E. Marcinkiewicz, Łódź 2013, pp. 223–224.

61 D. Thurley, *Pensions: Automatic Enrolment – Current Issues*, “Briefing Paper” 2019, No. CBP-06417, p. 6.

62 *Automatic...*, *op. cit.*, pp. 62–64.

63 Up to the amount corresponding to thirty times the projected monthly earning in the national economy for a given year (PLN 142,950 in 2019).

64 *PPK będą sukcesem, jeśli 50 proc. uprawnionych pozostanie w programie*, 30 November 2018, <https://www.pit.pl/aktualnosci/ppk-beda-sukcesem-jesli-50-proc-uprawnionych-pozostanie-w-programie-941765> (online access: 22.8.2019).

65 *Monitor rynku pracy. Wyniki 34. edycji badania*, 2019, p. 63.

will remain in the scheme. It should be borne in mind, however, that the living conditions and savings behaviour standards of Poles are different than in other countries, so the ECP opt-out rate may be significantly higher still.

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## Summary

The achievements of behavioural economics indicate that even in conditions of excellent knowledge and information, consumers do not act according to their own needs and for their own good. Since many decisions are made rather intuitively and automatically, this assumption has become the basis for proposing such solutions in the capital accumulation phase, which use the known mechanisms of consumer behaviour. As a result, in recent years more and more countries in the world are implementing or are interested in introducing automatic pension plans. Although they undoubtedly increase the degree of participation in the supplementary pension provision, their impact on the amount of accumulated capital and on a higher standard of living in old age is, however, not so clear. When analysing the potential impact of ECP on improving pension adequacy, Tomasz Jedynak<sup>66</sup> argues that even the maximum contributions to the scheme paid in over the entire working life of an individual will not ensure the pensions gap be covered. Auto-enrolment should therefore be supplemented and supported by other programmed mechanisms, such as automatic contribution escalation corresponding to the increase in the saver's remuneration.

It should also be noted that the use of behavioural mechanisms is not always universally justified for the general public. Along with the increase in financial literacy, the presented behavioural aspects of pension behaviour are less frequently observed, because individuals with greater financial knowledge and awareness are more likely to think about their future financial situation by analysing the effects of their decisions. Actions in the area of improving consumer knowledge cannot therefore be replaced by solutions developed within the framework of behavioural economics.

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66 T. Jedynak, *Wpływ wprowadzenia pracowniczych planów kapitałowych na wysokość przyszłych świadczeń emerytalnych w Polsce*, "Ubezpieczenia Społeczne. Teoria i praktyka" 2018, No. 2 (137), pp. 33-54.

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## **Podstawy behawioralne decyzji w obszarze zabezpieczenia emerytalnego – diagnoza i zastosowanie w stymulowaniu dodatkowych oszczędności na starość**

W artykule zwrócono uwagę na behawioralne aspekty decyzji w obszarze dodatkowego zabezpieczenia emerytalnego oraz wskazano, jakie może być zastosowanie dorobku ekonomii behawioralnej w stymulowaniu długoterminowego oszczędzania na starość. Przedstawiono i omówiono rodzaje błędów poznawczych, które mają wpływ na podejmowanie decyzji o oszczędzaniu na emeryturę, oraz zaprezentowano opcje automatycznego wejścia i zasady oszczędzania w zakładowych programach emerytalnych sprzyjające zwiększaniu oszczędności na starość.

**Słowa kluczowe:** automatyczne strategie inwestycyjne, automatyczny program emerytalny, ekonomia behawioralna, błędy poznawcze, eskalacja składki