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How Employee Capital Plans qualify under the IORP II Directive

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Abstract

Motivation: The pension system in Poland is undergoing another major reform. Between 2019 and 2021 Employee Capital Plans (ECP) are being implemented. This common system of voluntary pension savings schemes is a new element of the third pillar. The purpose of the ECP is to cover the majority of employees and to provide additional pension security for the large part of the labour force in Poland. Since Poland is still implementing the reform, and the system is still quite young, the research background is limited.

Aim: This article tries to provide deeper, both legal and economic, analysis of the ECP. On the legal ground, it considers whether ECP provide "cover against biometric risk" or "guarantees a given level of benefits" for the purposes of Article 13(2) of EU Directive 2016/2341 (the "IORP II Directive"). If no such cover and no such guarantee are provided, then an ECP scheme is not required to comply with the technical provisions, buffer, and other funding requirements applicable to an IORP which is classified as a "regulatory own fund" in Article 15 of the IORP II Directive. From the economic perspective, the purpose of the article is to answer the question of how much the ECP members are covered against the risk of longevity. To achieve the research objective the method of critical legal dogmatics and the economic analysis of law method are employed.

Results: The article explores how the ECP schemes are classified under the IORP II Directive. It also answers the question of how much the ECP members are covered against the risk of longevity. The main finding of this analysis is that the ECP, as a defined contribution plan, does not protect participants from either biometric risk or asset value declines.

Keywords: employee capital plan; individual pensions; occupational pensions; pension JEL: G11; G23; J32; J26



1. Introduction

The regulatory landscape of the Polish pension market has just become more complex. The Employee Capital Plans (ECPs) were introduced on the 1st of July 2019. This is a new system of voluntary pension saving schemes. The official purpose of the ECP system is to cover the majority of employees in Poland and to provide them with additional pension security. The purpose of this article is to provide a legal and economic analysis of the ECP. On the legal ground, the article considers whether ECP provides "cover against biometric risk" or "guarantees a given level of benefits" for the purposes of Article 13(2) of UE Directive 2016/2341 on the activities and supervision of institutions for occupational retirement provision (2016) (the "IORP II Directive"). If no such cover and no such guarantee are provided, and other funding requirements applicable to an IORP which is classified as a "regulatory own fund" in Article 15 of the IORP II Directive. From the economic perspective, the purpose of the article is to answer the question of how much the ECP participants are covered against the risk of longevity. To achieve these objectives the normative legal methods and the economic analysis of law method are employed.

The first part of the article describes the goals and aims of the IORP II Directive. Additionally, it provides a legal analysis of obligation to funding sufficient "technical provisions" by IORPs. This part also assesses the importance of ECP introduction in Poland together with grounds for analysing this new system.

The section "Archetypes of Pension Frameworks" describes the main ideas behind each archetype. Also, the pros and cons of each archetype are presented. The section "ECP as a Pension Scheme" consists of detailed legal analysis of ECP. Additionally, it provides an answer to the question of how much ECP participants are covered against the risk of longevity. Finally, it proves that ECP schemes do not protect participants from biometric risks or guarantee a given investment performance or a given level of benefits. The results and findings of the article are presented in the conclusions. This part also includes implications and recommendations for practice. Finally, this part includes suggestions for future research.

2. Literature review

Institutions for occupational retirement provision and their functioning have been subject of several analyses over a number of years. The milestones of this discussion are the works of Barr and Diamond (2006), Blommestein et al. (2009), Orenstein (2008) and Uścińska (2011). One of the main problems of pension economics is intergenerational risk-sharing and fairness. This problem is constantly debated by researchers from this field i.e., Autenne (2017), Šebo et al. (2015) and Zhu et al. (2020). More recent research is focused on the consequences of the IORP II Directive introduction. The works of Bennet (2019),

van Meerten and Schmidt (2018), van Meerten and van den Brink (2015) are particularly important.

In Poland, debate is focused on the introduction and implementation of Employee Capital Plans. Since this system is quite a novelty, the research background is limited. The most important analyses on the ECP were conducted and published by the members of the Pension Institute: Blaszczyk (2020), Filiczkowska (2020) Jedynak (2020), Kolek and Sobolewski (2020), Szczepański and Kołodziejczyk (2020), and. Also, works of Dawidowicz (2020), Ociepa-Kicińska (2019) and Wrzesiński (2019) shall be mentioned. Nevertheless, these analyses do not evaluate the ECP system from the European regulatory perspective. This article aims to fill this gap. The originality of this article results from applying both legal and economic analysis of the ECP. This enables the author to reach brand-new findings e.g., the main limitations of the ECP system.

3. Methods

The normative legal methods are the most classical in the theory of legal science. They are used to describe the set of rules that belong to a legal system, and to its further systematization. In this analysis, the methods are used to construe legal norms of IORP II Directive and contrast them with the legal norms shaping ECP schemes' construction. This is followed by economic analysis of law and application of the tools of microeconomic theory to legal constructs. This part of the analysis is focused on the ECP participant's right to dispose of participation units or accounting units accumulated on his or her ECP account. It assesses the scope of ECP participants protection against the biometric risks. Both methods are necessary to analyze legal provisions of IORP II Directive and the Act on Employee Capital Plans (2018) (the "ECP Act") and to check how ECP schemes are classified under the IORP II Directive. This is essential to verify the hypothesis — if the ECP participants are covered against the risk of longevity.

4. Results

4.1. IORP II Directive and ECP introduction

The IORP II Directive is the reform of pension fund legislation in the European Union (Petelczyc, 2016). The final text of the IORP II Directive was published in the Official Journal of the European Union on 23 December 2016, but it came into force on January 13th, 2019. It added 43 new articles to the Directive 2003/41/EC the activities and supervision of institutions for occupational retirement provision (2003) (the "IORP I Directive") and put a renewed focus on governance and communication standards. Institutions for occupational retirement provision (IORPs) must invest according to prudent person principles, improve

their internal risk management functions, hold sufficient technical provisions, and make more data and information available to members.

The goal of the IORP II Directive is to facilitate the development of occupational pension plans and to provide sustainable and adequate occupational pensions to EU citizens. The IORP II Directive sets common standards ensuring the soundness of occupational pensions and better protects pension scheme members and beneficiaries, by means of among others:

- new governance requirements;
- new rules on IORPs' own risk assessment;
- new requirements to hold sufficient technical provisions;
- new requirements to use a depositary;
- enhanced powers for supervisors (Bennett & van Meerten, 2019, pp. 15–18). The European Commission declares the will to "carefully examine" how each member state has implemented the directive "to make sure that they fully deliver the new standards set at the EU level" (EIOPA, 2018).

According to art. 15 of IORP II Directive IORPs operating pension schemes, where the IORP itself, and not the sponsoring undertaking (i.e., the employer), underwrites the liability to cover against biometric risk, or guarantees a given investment performance or a given level of benefits, hold on a permanent basis, additional assets above sufficient "technical provisions" to serve as a buffer. "Biometric risks" are defined in art. 6 point 9 of IORP II Directive as risks linked to death, disability, and longevity.

The way sufficient "technical provisions" should be calculated is regulated in art. 13 of the IORP II Directive. The amount of sufficient "technical provisions" should reflect the type of risk and the portfolio of assets in respect of the total range of schemes operated. The funding of sufficient "technical provisions" is regulated in art. 14 of IORP II Directive. Sufficient "technical provisions" should be free of all foreseeable liabilities and serve as a safety capital to absorb discrepancies between the anticipated and the actual expenses and profits.

However, if IORP does not provide cover against biometric risks or guarantee investment performance or a given level of benefits, there is no requirement to establish sufficient "technical provisions" that are regulated in art. 13 of IORP II Directive. It also follows that the requirement to establish "maximum rates of interest" which are "chosen prudently" does not apply (art. 13 (4) (b) of IORP Directive II).

Shortly after the IORP II Directive came into force the regulatory landscape of the pension market in Poland became more complex. The system of Employee Capital Plans (ECP) started to operate on July 1st, 2019 and it is still at the stage of introduction. The system will be fully implemented in 2022. The provisions that bind the ECP are set out in the ECP Act. The introduction of ECP is one of the most significant changes in the Polish pension market (Blaszczyk, 2020, pp. 9–54). Thus, there is a need to describe and analyse the ECP system



in the context of the IORP II Directive. This new form of occupational pension plan operates as an individual and defined contribution (DC) scheme.

4.2. Archetypes of pension frameworks

DC schemes are "money purchase" pension schemes that are showing increasing prevalence in international pension markets. Contributions are made by employer, employee, or both, on a regular basis. Individual accounts are set up for participants and money paid in is put into investments by the pension provider. The value of the participant's pension capital can increase or decrease depending on how the investments perform (Szczepański & Brzęczek, 2016, pp. 106–120). The benefits are based on the value of accumulated capital in these accounts and investment earnings. In DC schemes risks of low investment returns and of outliving retirement income are borne by the participants. Pension benefits fluctuate on the basis of investment earnings (Rutkowski, 2019, pp. 55-94).

Conversely, defined benefit (DB) schemes are usually workplace pensions arranged by an employer (sponsoring entity). They are sometimes called 'final salary' or 'career average' pension schemes. This is because the value of pension benefit that participants get depends on the pension scheme's rules, not on investment or how much participants paid in. In DB schemes the employer or sponsor promises a specified pension payment, lump-sum, or combination thereof, on retirement, that is predetermined by a formula. The formula is based on the participant's earnings history, tenure of service and age. A defined benefit scheme is ,defined' in the sense that the benefit formula is defined and known in advance. Moreover, most DB schemes pay their benefits as an annuity, so participants do not bear the risk of low investment returns on contributions or of outliving their retirement income. These risks are born by the employer or sponsoring entity (Barr & Diamond, 2006, pp. 15–39). Globalisation and liberalisation of financial markets forced employers to shed this model of occupational pension model. Right now, DB schemes are no longer dominant in international pension markets (Orenstein, 2008, pp. 14–35).

Another distinction between two archetypes of occupational pension schemes is based on the independence or dependence of the scheme on the employer. In the first archetype institution for occupational retirement, provision is an independent legal entity, with its own funds, and separated from the employer (sponsoring undertaking). This kind of IORP receives up-front provisions that are recorded on its separate balance sheet. It accumulates capital to bear biometric risks or to provide investment performance or guarantee a certain level of benefits (Šebo et al., 2015, pp. 244–249). Due to legal limitations, this type of occupational pension scheme is dominating the Polish pension market (Góra, 2018, pp. 25-32).

In the second archetype, the employer (sponsoring undertaking) and the IORP are closely related. Usually, the IORP is set up by the employer. The sponsoring undertaking provides the ultimate pension security to its employees and stands ready to supply financing in the event of underfinancing of the IORP (Autenne, 2017, pp. 158–171). Of course, all kinds of hybrid schemes are possible. Most Member States have a combination of the two archetypes. Perhaps, the most publicised ones are "Defined Ambition" schemes and "Collective Defined Contribution" schemes (Borsjé & van Meerten, 2015, pp. 385–412).

"Defined Ambition" schemes are based on the idea that there is still a target benefit that schemes aim for; they can adjust benefits after financial or longevity shocks. Thus, a Defined Ambition scheme has the ambition to provide a certain level of benefit, but with no guarantee that that ambition will be achieved. The common feature of any such scheme is that the risks are shared amongst the members of the scheme. It might be shared within a generation of participants or a particular group (for example, a five-year cohort belonging to the same target-date fund). It might be shared across generations of members (Zhu et al., 2020).

The employer (sponsoring undertaking) has no greater obligation than to pay the contributions it has agreed to the plan to finance the non-guaranteed benefits. In the Defined Ambition schemes, the risk and the reward are shared collectively by the participants of the scheme (in accordance with the risk-sharing rules provided for under the scheme's governing legal documents).

Defined Ambition schemes, unlike Defined Benefit schemes, do not offer guarantees. Instead, in these schemes the participants, not an external sponsoring undertaking, bear the risk of deficit and failure of achieving the targeted benefits of the pension fund (Bovenberg et al., 2016, pp. 215–246).

Collective defined contribution (CDC) pension schemes, just like other defined contribution schemes, allow participants to pool their money into a single fund which pays an annual pension income. Pension increases vary depending on the funding level, so costs are fixed for employers. Thanks to conditional revaluation and conditional indexation in CDS pension schemes, higher pensions are expected than under traditional defined contribution (DC) annuities (van Meerten & Schmidt, 2018, pp. 1–8). Due to legal limitations, this type of occupational pension scheme has not developed in the Polish pension market (Szczepański, 2010).

4.3. ECP as a pension scheme

ECPs are based on a much simpler pension framework. In ECPs there is no target level of pension benefit, nor any revaluation or indexation of pension rights. This system is just a plain and simple DC scheme. Accumulated pension capital depends only on the value of contributions paid into the scheme and the investment performance of the target-date fund. Pension befit in ECP depends only on the value of accumulated capital and the length of deaccumulation period (Jakubowski, 2021).

An ECP participant accumulates pension capital on the individual ECP account in an ECP fund. The ECP fund is a target date fund build on a cohort-based approach (Jakubowski, 2019, pp. 1-24). The functioning of the ECP fund's is determined by all levels of regulations. The most important and the most universal regulation for the ECP fund's investment policy is to be found in the Act on investment funds and alternative investment fund management (2004) (the "IF Act"). In principle, the ECP fund follows the investment limits for open-end investment funds (art. 42 (1) of the ECP Act). The specific provisions that bind only the ECP funds are set in the ECP Act.

According to Art. 38 in conjunction with Art. 2(1)(6) to (7) and Art. 32 of the ECP Act, the target-date funds are investment funds (specialised openend investment funds and unit-linked life insurance funds) or pension funds (open-end pension funds and occupational pension funds). Investment funds issue and sell participation units, while pension funds issue and sell accounting units.

In general, an ECP participant is deprived of the right to freely dispose of participation units or accounting units accumulated on his or her ECP account. The participant has the right to dispose of the units accumulated on his or her ECP account only in the situations and forms specified in the ECP Act. The target form of using the funds accumulated in an ECP is their withdrawal after the participant reaches the age of 60 (Art. 99 and Art. 100 of the ECP Act). By default, this withdrawal is divided into a part to be paid out once (25% of the funds accumulated in ECP) and the balance payable for 10 years in 120 monthly instalments (75% of the funds accumulated in ECP (Art. 99 of the ECP Act).

The value of monthly instalments depends on the price of the participation units or accounting units accumulated on the ECP account. As with every individual DC scheme, the longer and the more the participant and the sponsoring entity pay into the ECP account, the greater the number of participation units or accounting units are purchased in the target-date fund. The value of participation units or accounting units depends on the returns on investments of the target-date fund. Setting a minimum age for starting deaccumulation of funds at just 60 years is undoubtedly beneficial for participants planning to end their professional careers early, and to quickly consume their pension capital (Jedynak, 2020, pp. 53–70).

Such a form of default withdrawal of the funds accumulated in ECP does not protect ECP participants from the risk of longevity. The average life expectancy in Poland is already approaching 80 years. With the default withdrawal, the funds accumulated are exhausted at the moment when the ECP participant reaches the age of 70 (Kiełczewska & Lewandowski, 2017, pp. 11–16).

The low minimum age for starting deaccumulation of capital together with a relatively short period of monthly instalments is detrimental for the level of protection against individual longevity risk. Exhaustion of resources accumulated within the ECP at the age of 70 deprives ECP participants of supplementary monthly income at the very moment when their financial needs are increasing rapidly. A deteriorating health condition and increasing infirmity expose ECP participants to higher outgoings for medicines and medical care. This means that the default withdrawal of funds in instalments which starts shortly after reaching the age of 60 does not protect the participant against the negative effects of the individual longevity risk. In this situation, the supplementary pension security resulting from participation in the ECP is temporary and thus limited. This means the ECP scheme does not protect its participants from the risk of longevity.

Neither ECP provides cover against other biometric risks. In case of disability of a participant or his/her spouse or his/her child, the participant is allowed only a payout of 25% of the accumulated pension capital. The payment has the form of a single lump-sum payment (art. 101 of ECP statue). In a case of a participant's death the accumulated pension capital is shared among eligible parties. Half of the means accumulated on a deceased person's ECP account is transferred to the individual account of his/her spouse (art. 85 of ECP statue). The rest is shared among eligible persons in the form of single lump-sum payment (art. 86 of ECP statue).

Thus, ECP schemes do not protect participants from biometric risks or guarantee a given investment performance or a given level of benefits. Therefore, it is not necessary for an ECP to comply with the requirements of art. 15(1) of the IORP II Directive and to hold sufficient technical provisions.

5. Conclusions

The central finding of this article is that ECP schemes do not provide cover against biometric risk or guarantee a given level of benefits. The primary implications of this, from the practical perspective, is that there is no requirement under the IORP II Directive for a Polish ECP scheme to hold sufficient technical provisions as provided for in this Directive (art. 15(1) IORP II Directive). That technical provisions are not needed if benefits are self-adjusting under the terms on which they are granted. At the same time, Poland (as a Member State) does not require ECP schemes to hold technical provisions. From the economic perspective, the key finding is that ECP participants are not covered against the risk of longevity. This is one of the biggest limitations of the new ECP system in Poland. This leads to another important research question: how ECP schemes qualify under the International Labour Organisation's Convention no. 102 on Social Security? The answer to this question becomes fundamental for minimum social standards in Poland. Thus, this should be a matter of further research.

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References

- Autenne, A. (2017). Occupational pension funds: governance issues at the international and European levels. *European Journal of Social Security*, 19(2), 158–171. https://doi.org/10.1177/1388262717712152.
- Barr, N., & Diamond, P. (2006). The economics of pensions. *Oxford Review of Economic Policy*, 22(1), 15–39.
- Bennet, P. (2019). Must an occupational pension scheme take into account ESG factors even if there is a risk of financial detriment to the pension fund. *Trust Law International*, 32, 239–251.
- Bennett, P., & van Meerten, H. (2019). How do CDC schemes qualify under the IORP II directive. *VUZF Review*, 2, 1–31. https://doi.org/10.2139/ssrn.3354549.
- Blaszczyk, B. (2020). The capital pillar of Poland's pension system: from open pension funds (OFE) to employee capital plans (PPK). *Gospodarka Narodowa*, 301(3), 9–54. https://doi.org/10.33119/GN/116616.
- Blommestein, H., Janssen, P., Kortleve, N., & Yermo, J. (2009). Moving beyond the "DB vs DC" debate: the appeal of hybrid pension plans. *Rotman International Journal of Pension Management*, 2(2), 66–76.
- Borsjé, P., & van Meerten, H. (2015). An EU pensions union. In F. Pennings, & G. Vonk (Eds.), *Research handbook on European social security law* (pp. 385–412). Edward Elgar.
- Bovenberg, A.L., Mehlkopf, R., & Nijman, T.E. (2016). The promise of defined ambition plans: lessons for the United States. In O. Mitchell, & R. Shea (Eds.), *Reimagining pensions: the next 40 years* (pp. 215–246). Oxford University Press. 10.1093/acprof:oso/9780198755449.003.0012.
- Dawidowicz, D. (2020). An initial assessment of employee capital plans. *Research Papers of Wrocław University of Economics*, 64(7), 5–17. https://doi.org/10.15611/pn.2020.7.01.
- Directive (EU) 2016/2341 of the European Parliament and of the Council of 14 December 2016 on the activities and supervision of institutions for occupational retirement provision (IORPs) (OJ L 354, 23.12.2016).
- Directive 2003/41/EC of the European Parliament and of the Council of 3 June 2003 on the activities and supervision of institutions for occupational retirement provision (OJ L 235, 23.9.2003).
- EIOPA. (2018). *Implementation of IORP II: update on the Pension Benefit State-ment (PBS)*. Retrieved 29.01.2021 from https://eiopa.europa.eu/Publications/Stakeholder%20Opinions/OPSG-18-08_Position_Paper_IORPII_Implementation.pdf.
- Filiczkowska, J., & Jedynak, T. (2019). Pracownicze plany kapitałowe jako mechanizm poprawy adekwatności systemu emerytalnego w Polsce. *Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie*, 1(985), 9–28. https://doi.org/10.15678/ZNUEK.2020.0985.0101.

- Góra, M. (2018). Thinking about pension systems for the 21st century: A few remarks based on the Polish example. *mBank–CASE Seminar Proceedings*, 154, 1–45.
- Jakubowski, S. (2019). Withdrawal of funds accumulated on the account of Employee Capital Plans participants. *Ubezpieczenia Społeczne: Teoria i Praktyka*, 4, 1–24. https://doi.org/10.32088/0000_17.
- Jakubowski, S. (2021). The glide-path mechanism in Employee Capital Plans. In F. Chybalski, & E. Marcinkiewicz, E. (Eds.), Pensions today: economic, managerial, and social issues (pp. 240–250). Politechnika Łódzka. https://doi.org/10.34658/9788366287938.21.
- Jedynak, T. (2020). Is it still possible to receive an adequate income from pensions in the era of ageing societies. In M. Bilgin, H. Danis, G. Karabulut, & G. Gözgor (Eds.), *Eurasian economic perspectives: Eurasian studies in business and economics*, 13(1), 53–70. Springer. https://doi.org/10.1007/978-3-030-40375-1_4.
- Kiełczewska, A., & Lewandowski, P., (2017). Population ageing and the labour supply in Poland up to 2050. In P. Lewandowski, & J. Rutkowski (Ed.), *Population ageing, labour market and public finance in Poland* (pp. 11–16). European Commission Representation in Poland.
- Kolek, A., & Sobolewski, O. (2020). OFE, PPK, IKE(+): zmiany w systemie emerytalnym 2019–2021, analiza prawno-ekonomiczna. *Monitor Prawa Pracy*, 12, 23–25. https://doi.org/10.32027/MOPR.19.12.1.
- Ociepa-Kicińska, E. (2019). Uwarunkowania funkcjonowania kapitałowego systemu emerytalnego w Polsce i podstawowe metody oceny jego efektywności. Uniwersytet Szczeciński.
- Orenstein, M. (2008). Privatizing pensions: the transnational campaign for social security reform. Princeton University Press. https://doi.org/10.1515/9781400837663.14.
- Petelczyc, J. (2016). Pracownicze programy emerytalne w krajach Unii Europejskiej. Elipsa.
- Rutkowski, A. (2019). Evaluating an old-age voluntary saving scheme under incomplete rationality. *Gospodarka Narodowa*, 299(3), 55–94. https://doi.org/10.33119/GN/111471.
- Šebo, J., Virdzek, T., & Šebová, L. (2015). Saving strategies revalued: is bond pension fund really a safe pension vehicle? In L. Sedmihradská (Ed.), *Proceedings of the 20th international conference on theoretical and practical aspects of public finance 2015* (pp. 244–249). Prague University of Economics Press.
- Szczepański, M. (2010). Alokacja ryzyka w PPE w Polsce. *Polityka Społeczna*, 2, 10–15.
- Szczepański, M., & Brzęczek, T. (2016). Zarządzanie ryzykiem w pracowniczych programach emerytalnych: uwarunkowania instytucjonalne, ekonomiczno-fiskalne i demograficzne. PTE Poznań.

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- Szczepański, M., & Kołodziejczyk, K. (2020). The initial stage of the implementation of employee capital plans in greater Poland from the perspective of human resource management: a research report. *Human Resource Management*, 134–135(3–4), 75–96. https://doi.org/10.5604/01.3001.0014.1674.
- Ustawa z dnia 27 maja 2004 r. o funduszach inwestycyjnych i zarządzaniu alternatywnymi funduszami inwestycyjnymi [Act of 27 May 2004 on investment funds and alternative investment fund management] (Dz.U. 2004 nr 146 poz. 1546) (Poland).
- Ustawa z dnia 4 października 2018 r. o pracowniczych planach kapitałowych [Act of 4 October 2018 on Employee Capital Plans] (Dz.U. 2018 poz. 2215) (Poland).
- Uścińska, G. (2011). Dodatkowe systemy emerytalne w regulacjach UE: konsekwencje dla państw europejskich. Polityka Społeczna, 9, 1–7.
- van Meerten, H., & Schmidt, E. (2018). The legal differences between CIDC and CDC. *Pensions Institute Discussion Paper*, PI–1801, 1–9. https://doi.org/10.2139/ssrn.3121141.
- van Meerten, H., & van den Brink, A. (2016). EU executive rule-making and the second directive on institutions for occupational retirement provision. *Utrecht Law Review*, 12(1), 75–85. https://doi.org/10.18352/ulr.329.
- Wrzesiński, P. (2019). Pracownicze plany kapitałowe w formie ubezpieczenia: aspekty prawne. *Prawo Asekuracyjne*, 1(98), 28–41. https://doi.org/10.5604/01.3001.0013.5639.
- Zhu, X., Hardy, M., & Saunders, D. (2020). Structure of intergenerational risk-sharing plans: optimality and fairness. *Scandinavian Actuarial Journal*, (7), 543–57l. https://doi.org/10.1080/03461238.2020.1862291.

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