

VOLUNTARY PENSION FUNDS IN CROATIA: INVESTMENT PERFORMANCE AND INCENTIVES

Olgić Draženović, Bojana

Source / Izvornik: **DIEM : Dubrovnik International Economic Meeting, 2021, 6, 127 - 136**

Journal article, Published version

Rad u časopisu, Objavljena verzija rada (izdavačev PDF)

<https://doi.org/10.17818/DIEM/2021/1.13>

Permanent link / Trajna poveznica: <https://um.nsk.hr/um:nbn:hr:192:165611>

Rights / Prava: [In copyright](#) / [Zaštićeno autorskim pravom.](#)

Download date / Datum preuzimanja: **2025-01-13**



SVEUČILIŠTE U RIJECI
EKONOMSKI FAKULTET

Repository / Repozitorij:

[Repository of the University of Rijeka, Faculty of
Economics and Business - FECRI Repository](#)



VOLUNTARY PENSION FUNDS IN CROATIA: INVESTMENT PERFORMANCE AND INCENTIVES

Preliminary communication

UDK: 657.412.7(497.5)

JEL classification: G20, G23

DOI: 10.17818/DIEM/2021/1.13

Accepted for publishing: July 8, 2021

Abstract

Saving for the third age is extremely important in the conditions of an uncertainty in the global economy, unfavorable demographic trends and the related problem of fiscal imbalances. In order to improve the sustainability of the Croatian three-pillar pension system, there have been recent attempts to significantly increase the role of voluntary pension insurance and other forms of saving for the third age. The aim of such measures is to reduce the increasing dependence of pension beneficiaries on payments from the state budget and to achieve a more sustainable pension system. Measures to encourage voluntary saving in Croatia are the state incentives for the insured and the tax benefits for employers. Despite the numerous investment advantages and government incentives for this form of saving, voluntary pension funds in Croatia are still among the least developed institutional investors, considering the amount of assets and the number of members. The question arises as to the reasons for the relative disregard of these financial institutions and the low interest of the working population in Croatia. The aim of this paper is to analyze the performance of voluntary pension funds and identify the reasons for the insufficient capitalised savings in the third pension pillar in Croatia.

Keywords: *Croatian pension system, voluntary pension funds, financial literacy, government incentives*

1. INTRODUCTION

The Croatian pension system is a mixed public-private pension system introduced by a 1999 law on pension insurance. It extended the existing pay-as-you-go system with two pillars consisting of mandatory and voluntary pension funds. The third pillar of the pension system refers to voluntary open and closed pension funds. However, these are not yet sufficiently developed to significantly increase the average adequacy of future pension benefits (OECD, 2013). The possibilities are much greater, as this form of saving concerns only 24.9% of the working population in Croatia, despite various stimulating legal solutions and incentives, but also because of low interest and familiarity of the population with new investment opportunities.

The aim of the article is to address possible reasons for the underdevelopment of voluntary pension funds in Croatia and thus for the suboptimal effects of a three-pillar system. Despite the possibilities of obtaining state subsidies and tax exemption for employers, this form of capitalized savings has failed to attract a significant number of insured persons and accumulating a satisfactory level of funds. The issues related to third pillar voluntary retirement savings are rarely

addressed in the literature, especially for the Croatian pension system. This paper aims to fill this gap by quantifying the extent of third pillar development and performance in Croatia.

The paper is organized as follows. The introductory remarks provide an insight into the topic and the research problem. The second part summarizes the main features and structure of the Croatian pension system, focusing on the third pillar. The third part analyzes the development path and performance of voluntary pension funds. The fourth and fifth parts of the paper shed light on the tax treatment and government incentives of voluntary funded saving and highlight the reasoning behind them. Finally, the last part offers a conclusion.

2. THEORETICAL BACKGROUND

Unfavorable demographic trends are affecting economic and social policies worldwide, raising fundamental questions about the adjustment of national pension policies and other public policies. The deterioration of the dependency ratio is exacerbated by population aging, i.e. the increasing share of older people in the population, declining birth rates and increasing life expectancy (Bejaković, 2019). In Croatia and other countries in Central and Eastern Europe, the problems were even greater at the beginning of the transition period due to high unemployment, informal economy and tax evasion. Moreover, their pension systems were extremely vulnerable to political pressure and abuse (Olgić Draženović, Suljić Nikolaj, Buterin, 2019). As a result, comprehensive pension system reforms were implemented to reduce the pension system's reliance on 'pay-as-you-go' (PAYG), which is financially difficult in the long run, and to provide a decent pension to the insured (Puljiz, 2007). The reformed pension systems upgraded the existing PAYG system with two pillars consisting of mandatory and voluntary pension funds. The main arguments for the multi-pillar pension reform strategy were to promote the sustainability of pension systems in the long run, to achieve macroeconomic stability and boost economic growth, to increase domestic savings, to develop the capital market rapidly, to create a stable base of institutional investors and to provide better incentives for the labor market (World Bank, 1994; Orszag, Stiglitz, 2001).

However, due to its voluntary character, the third pillar was not sufficiently affirmed. Therefore, governments implemented different solutions aimed at fostering widespread participation such as introducing new types of voluntary pension plans and more favourable financial incentives. These measures can be considered as a part of pension privatization and pension marketization (Marcinkiewicz, 2019, p. 612). Research shows that there is neither confidence in the sustainability and adequacy of the pension system (Marcinkiewicz, 2017) nor a level of financial literacy that would encourage higher allocations to the third pillar (Bejaković, 2016). Marcinkiewicz (2019) demonstrated that the adequacy of pension benefits from the mandatory system does not affect voluntary saving and participation in the third pillar. Also, higher education and high income are crucial for increasing the probability of voluntary saving, especially for countries with shorter traditions of capitalised pension accounts (Le Blanc, 2011).

3. PENSION SYSTEM IN CROATIA

Pension reform in Croatia began with a series of parametric reforms in 1999 and the introduction of a mixed public-private three-pillar pension system (Puljiz 2007; Marcinkiewicz 2017; Bejaković 2019 for a review). The implementation of the three-pillar pension system took place in 2002 with the creation of newly established financial institutions in the Croatian financial system: mandatory and voluntary pension funds, pension management companies and pension insurance company.¹ Namely, a second (mandatory) and a third (voluntary) pillar were added to the existing pay-as-you-

¹ A pension insurance company is an entity responsible for offering pension schemes and paying pension benefits to pensioners from second and third pillar of the Croatian pension system.

go first pillar of pension insurance, which is based on intergenerational solidarity. The second and third pillars represent individual capitalised savings and were introduced to collect and capitalise the personal savings of the insured and to broaden the source of funding in order to achieve greater individual responsibility for the security of the elderly.

Pension funds are managed by one of the four existing management companies established by the few largest banks and insurance companies in Croatia. Consequently, a rather small number of asset managers operate in a highly interconnected environment (Olgić Draženović, Hodžić, Maradin, 2019). Employees save in their personal accounts in mandatory and voluntary pension funds and the saved funds are their personal property and subject to inheritance.

Mandatory pension funds are obligatory for all employees. The accumulated financial resources from the payment of contributions and the still negligible payouts led to an impressive growth of the assets of these intermediaries. Moreover, their assets also grew thanks to the returns that resulted from their investment policies. Mandatory pension funds became the fastest growing institutional investors and the largest financial institutions in the Croatian financial system (after banks) with 2.06 million members and total assets of HRK 119.1 billion at the end of 2020 (Hanfa, 2021a).

The third pillar is a voluntary supplementary scheme based on individual capitalization for people who want additional insurance against the risks of old age, disability and death. The establishment and operation of voluntary pension funds is regulated by the Act on Voluntary Pension Funds (Official Gazette, 2019). Voluntary pension saving means individual capitalised saving in voluntary pension funds of open or closed type. Open-end voluntary pension funds can be used by any natural person residing in the Republic of Croatia without restrictions, and the accounts are often sponsored by employer contributions. Closed funds are established by employers, trade unions or professional associations of the self-employed exclusively for their employees or members. There is no age limit for joining one of these pension funds and it is also possible to join more than one fund.

The increasing coverage of the working population through the II pillar is offset by the low coverage within the voluntary pillar (third pillar). This could lead to an increasing problem of low living standards for pensioners in the future, as the pay-as-you-go funds (first pillar) only offer a pension replacement rate of 30%. Due to the low contributions in the mandatory pension funds and the low coverage of the III pillar, it will be difficult to add significant sources to the individual in retirement (Better Finance, 2020).

4. THIRD PILLAR - ANALYSIS OF VOLUNTARY PENSION FUNDS

The third pillar represents individual capitalized savings and is intended for any interested person residing in the Republic of Croatia who wishes to save for the third age. The advantage of investing in the voluntary pension fund is financial flexibility and control over payments, i.e. the possibility to change the amount and frequency of payments as needed. If payments are interrupted or irregular, membership in the fund is not terminated; instead, the existing balance in the account continues to earn income.

Moreover, voluntary pension saving is the only financial product in the Republic of Croatia that includes state incentives, fund returns and tax relief for employers. The third pillar can be considered as an upgrade of pension benefits based on the two mandatory pillars of the pension system.

4.1. Net assets and membership

In the Croatian financial system there are 8 open voluntary pension funds and 20 closed pension funds managed by 4 pension fund management companies. Unlike the mandatory pillar, the voluntary pension fund companies can offer more than one voluntary pension fund. The voluntary pension fund companies overlap heavily with the mandatory pillar; pension fund companies offering mandatory funds also offer voluntary funds. The market is concentrated with an 81%

market share for the three largest open voluntary funds. The largest fund alone has a 35% share. The following table shows the number of voluntary pension funds offered in Croatia, as well as data on their members and the amount of total assets. Voluntary pension fund assets grew from HRK 3.2 billion at the end of 2014 to HRK 5.1 billion in 2020. Voluntary saving is a matter of personal choice and in general people tend to invest small amounts on a regular basis, with the average accumulated per member for 2020 being only HRK 13 505.

Table 1 Net assets and membership of voluntary pension funds (2014-2020)

| | Number of funds | | Assets (in 000 HRK) | | Membership | |
|------|-----------------|------|------------------------|-----------|------------|--------|
| | VOPF | VCPF | VOPF | VCPF | VOPF | VCPF |
| 2014 | 6 | 16 | 2 651 987 | 596 188 | 220 527 | 23 927 |
| 2015 | 6 | 17 | 3 044 842 | 681 211 | 236 975 | 28 778 |
| 2016 | 6 | 18 | 3 548 401 | 777 088 | 257 075 | 29 237 |
| 2017 | 8 | 19 | 3 895 569 | 849 556 | 285 822 | 30 387 |
| 2018 | 8 | 21 | 5 542 772 | 1 198 075 | 305 145 | 40 482 |
| 2019 | 8 | 20 | 5 119 466 | 1 101 694 | 320 533 | 44 569 |
| 2020 | 8 | 20 | 4 231 346 | 908 054 | 335 327 | 45 228 |

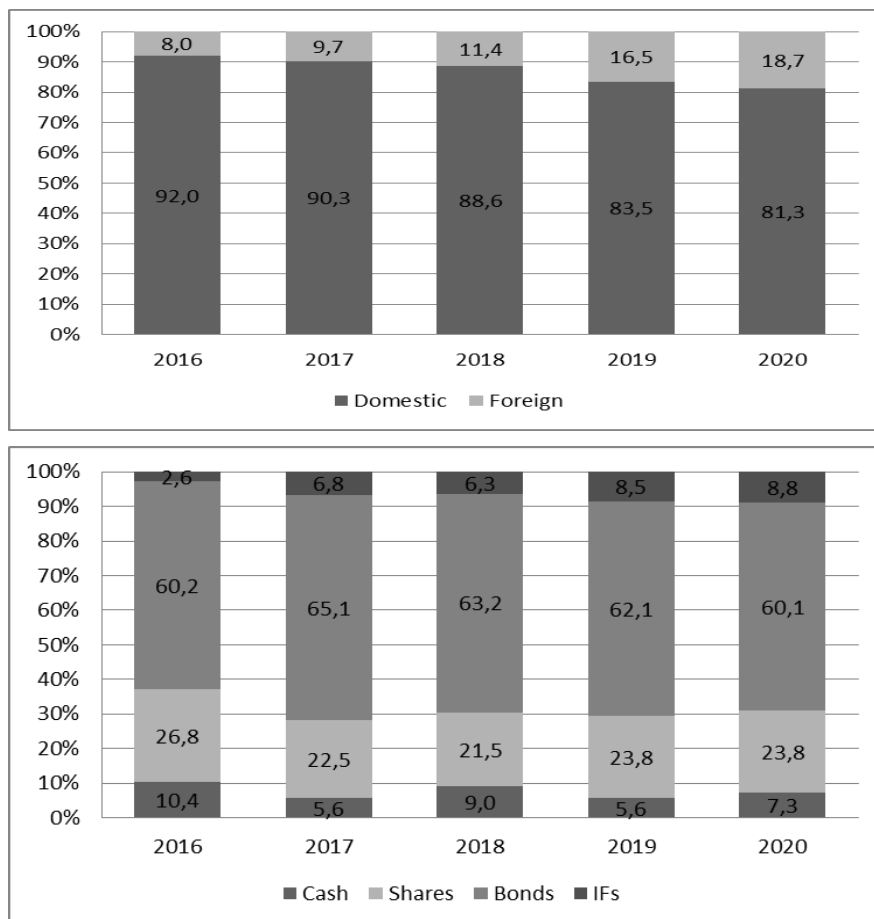
Source: Hanfa (2021a)

According to the data in Table 1, the third pillar has a total of 380 555 members at the end of 2020. This indicates a very low level of coverage within the third pillar; 24.9% of the working population, or only 9.4% of the total population (Croatian Bureau of Statistics, 2021), is saving for retirement in the third pillar. The possibilities are much greater, especially if taken into account that the total assets under management of voluntary pension companies (HRK 5.14 billion) represent only 2.6% of the population's savings and time deposits (in HRK and foreign currency) in banks in 2020.

4.2. Asset management and allocation

Taking into account the investment policy of pension funds and the given regulatory framework, Croatian voluntary (and mandatory) pension funds are cautious and focused on the domestic debt market (Olgić Draženović, Hodžić, Maradin, 2019).

Geographically, the main assets of the voluntary pension fund are domestic (81.3%). The portfolio structure is highly exposed to domestic market risk (high political and country risks) due to the high share of investments in government bonds (Olgić Draženović, Kusanović, Jurić, 2015). Foreign assets (18.7%) are mainly invested in equities and open-end funds. Nevertheless, progress in geographical diversification can be seen, as investments in foreign assets have increased by 10 percentage points over the last five years. Of domestic assets, over 60% are invested in domestic bonds, exactly 51.9% in government bonds and 4.1% in corporate bonds. Investments in domestic shares are represented by 17.2%. This structure indicates greater diversification and exposure to risky securities than mandatory pension funds.



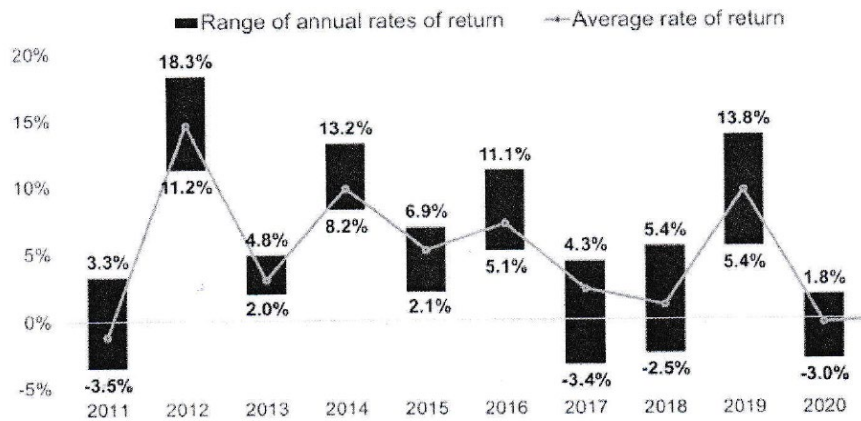
Source: Hanfa (2021b)

Figure 1 Asset structure of open-ended voluntary pension funds (2016-2020)

It is expected that future periods will allow for riskier and more active portfolios of pension funds and more efficient management solutions in the deposit and withdrawal phases (Olgic Draženović, Buterin, Buterin, 2018).

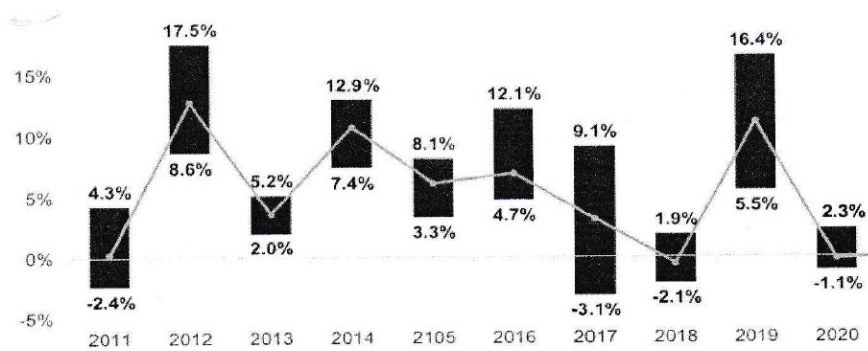
4.3. Rates of return and costs

Compared to banking savings (deposits), funds accumulated in voluntary pension schemes are characterised by a higher net return (after tax) due to financial incentives and lower risk. Marcinkiewicz (2017) states that this is a result of stricter supervision by financial authorities compared to other forms of savings (more guarantees for pension plan members, more restrictions and regulations for pension plan providers).



Source: Hanfa (2021b)

Figure 2 Rates of return of open-ended voluntary pension funds

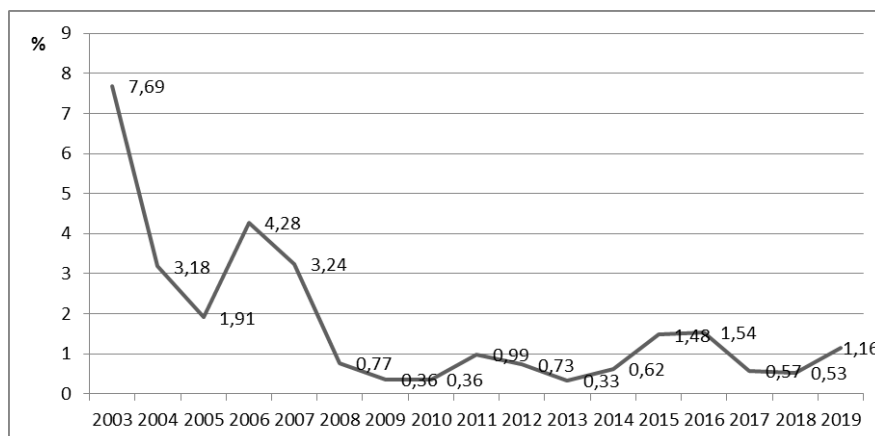


Source: Hanfa (2021b)

Figure 3 Rates of return of closed-ended voluntary pension funds (2011-2020)

It can be seen that the total returns of voluntary pension funds in Croatia fluctuated during the observation period. The highest returns were recorded in 2012, while the worst results occurred in 2020 due to the COVID-19 pandemic, with realized returns ranging from -3.0% to 2.3%. Returns vary widely between pension funds, reflecting their differentiated investment strategies, which are the result of less conservative statutory investment limits compared to mandatory pension funds. The average return for voluntary pension funds since 2002 is reported as 5.9% and the real return after fees and inflation (and before tax) is 3.9% (Better Finance, 2019). This suggests that the third pillar can be considered attractive to savers on a cumulative basis due to returns above inflation.

The fee structure of voluntary pension funds is composed of management fee, transaction fee and custody fee. Better Finance (2019) has obtained data on the average expense ratios available, which are shown in Figure 4.



Source: Better Finance (2019)

Figure 4 Cost ratio of voluntary pension funds in Croatia (2003-2019)

The total cost of Croatian voluntary pension funds depends on the overall performance and thus the management fee plays an important role in the fee structure. It can be observed that the costs are decreasing over time. The highest costs were recorded in 2006, just before the global financial crisis of 2007/2008, except for the highest costs recorded immediately after the first years of operation of the voluntary funds.

5. FINANCIAL INCENTIVES FOR PENSION SAVING IN CROATIA

The Croatian government has recognised the potential of the third pillar pension system for the adequacy of future pension payments and therefore offers a favourable tax treatment of pension savings compared to other forms of savings. Participants in voluntary schemes benefit greatly from tax incentives. For tax purposes, employers can pay voluntary pension insurance premiums to employees tax-free. The insurance premiums paid are considered income of the employee on which income tax, contributions and surcharges to income tax are not calculated and deducted. Contributions paid by the employer to voluntary pension funds up to a limit of HRK 6,000 per year per person are exempt from income tax. Furthermore, employer payments are not subject to tax incentives; they are treated as business expenses, i.e. they reduce the tax base. In addition to these tax incentives, the third pillar is further encouraged by a contribution subsidy to members of a fund. This government incentive is equal to 15% of the total contribution paid over a calendar year, up to a maximum contribution of HRK 5,000 (maximum HRK 750 per year per fund member). Returns on investments are also tax-free for voluntary pension funds.

The results of the panel method analysis by Marcinkiewicz (2017) for a group of 10 countries in Central and Eastern European show that only per capita income is associated with a larger number of pension fund members. This could explain the rather low level of accumulated savings in the Croatian third pillar despite generous tax and non-tax incentives.

Better Finance (2020) argue that indirect government support needs to be increased and the tax exemption for third pillar contributions needs to be further improved in order to increase the coverage rate. Nevertheless, frequent and unpredictable changes to the tax system should be discouraged as this increases uncertainty for investors who are expected to make long-term decisions.

6. FINANCIAL AND RETIREMENT LITERACY IN CROATIA

Saving in voluntary pension funds as a form of retirement savings is strongly correlated with financial literacy (World Bank, 2010; Vehovec 2011; Barbić, Palić, Bahovec, 2016; Bosch et.al., 2019; OECD, 2020). In addition, demand barriers to voluntary retirement saving refer to factors that inhibit saving for retirement, such as insufficient or irregular income (ability to save), behavioral factors, lack of knowledge about how to save or why it is important (financial literacy), or characteristics of savings products that are not adapted to preferences or needs (Bosch et.al., 2019, p. 4).

There are various studies that point to a relatively low level of financial literacy in Croatia (World Bank, 2010; Vehovec 2011; OECD, 2020), especially compared to EU and OECD countries. Based on the results of the OECD (2020) survey, progress has been made in financial education in the last five years. Nevertheless, this is not enough to change the attitude and behavior of Croatians when making financial decisions.

Research shows that individuals who do not save enough for their retirement tend to lack basic financial knowledge and skills (Barbić, Palić, Bahovec, 2016). This means that Croats are not aware that the long-term (in)sustainability of the Croatian pension system depends mainly on their own financial savings and investments.

Matić and Vretenar Cobović (2017) investigated the influence of various factors on the sustainability of the pension system in Croatia. The survey was conducted by questionnaire on a sample of 414 Croatian citizens. The results showed insufficient familiarity with the structure of the pension system, which is consistent with previous research on financial and pension literacy in Croatia. Moreover, the majority of respondents or 46.38% have only partial trust in the pension system and 32.61% have no trust at all. Therefore, it is not surprising that most respondents do not participate in the third pillar due to the reasons mentioned above, but also due to lack of savings and the view that such investments are unprofitable.

Croatia has adopted a comprehensive national strategy for improving financial literacy (Official Gazette, 2015) for the period 2015 - 2020, which uses Croatian Financial Services Supervisory Agency, the Ministry of Finance and Croatian National Bank as a basis for various educational activities. Nevertheless, the OECD (2019) findings point to the need to strengthen financial education policies and develop policy tools. This includes using digital technologies or behavioral insights and informal networks (family, friends, community) to reach people and explain the importance of saving in order to improve well-being in the third age. Particular attention should be paid to financial regulation and consumer protection to help people become more resilient. The results also suggest that financial education should be used as a supportive measure for economic and financial reforms, for example, to improve the stability of financial systems and consumer confidence. Bejaković (2016) points out that a great responsibility rests on voluntary private pension providers, who should work systematically to simplify and facilitate access to services, provide better information about their work, and support public authorities in financial education for citizens.

7. CONCLUSION

The Croatian pension system was established in 1999 in the form of a three-pillar system. The public intergenerational pay-as-you-go system or first pillar was supplemented by a privately managed second (mandatory) and third pillar (voluntary) based on individual capitalized savings collected in mandatory and voluntary pension funds. These new financial institutions had a major impact on the development of the Croatian financial system and became an important part of the domestic financial architecture. The main objective of the voluntary pension funds is to improve future pension amounts. However, despite their good performance, voluntary pension funds have not been recognized by citizens as an attractive investment opportunity for saving in the third age,

especially by low-income workers. Only 9.4% of Croatian citizens opt for this savings option and the average amounts saved are at a very low level and are not sufficient to ensure a much better standard of living in old age. Participants in voluntary pension funds benefit greatly from tax incentives, as they receive an annual allowance of up to HRK 750, while the state provides an annual tax deduction of up to HRK 6,000 for employers. Considering the above, third pillar savings is the most incentivized type of savings. Considering that the third pillar is determined by low contributions and low coverage, this raises questions about the adequacy of the Croatian pension system.

The main problems and obstacles to the further development of voluntary funded pension saving in the Republic of Croatia can be seen in the insufficient financial education and the measures taken by public (Ministry of Finance, Hanfa, Croatin National Bank) and private subjects (banks, insurance companies, fund management companies, chambers and associations) to develop financial literacy. In addition, although the third pillar is the most promoted form of savings, it is not yet sufficient to attract significant funds and new members to notably improve the living standards and welfare of citizens.

The system of voluntary private pensions and savings can ultimately become an important lever for economic growth, improving the social situation and providing a remedy for overdependence on the state. Moreover, both the sustainability and adequacy of pensions support economic growth and development and the maintenance of citizens' living standards and prosperity.

Acknowledgement

This work has been supported by the University of Rijeka under the projects number uniri-drustv-18-61, ZIP-UNIRI-130 5-20 and ZP UNIRI 3/19.

REFERENCES

- Barbić, D., Palić, I., Bahovec, V. (2016). Logistic regression analysis of financial literacy implications for retirement planning in Croatia. *Croatian Operational Research Review*, 319, 7, 2, pp. 319–331. <https://doi.org/10.17535/crorr.2016.0022>
- Bejaković, P. (2016). Važnost i opozivanje dobrovoljnog mirovinskog osiguranja. *Porezni vjesnik: službeno glasilo Porezne uprave Republike Hrvatske*, 25, 3, pp. 89-100.
- Bejaković P. (2019). The Croatian Pension System and Challenges of Pension Policy. In: Petak Z., Kotarski K. (eds) Policy-Making at the European Periphery. New Perspectives on South-East Europe. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-319-73582-5_12, [accessed 3.5.2021]. https://doi.org/10.1007/978-3-319-73582-5_12
- Better Finance (2020). Pension savings: The Real Return, 2020 Edition. Research paper. <https://betterfinance.eu/wp-content/uploads/The-Real-Return-Long-Term-Pension-Savings-Report-2020-Croatia.pdf>, [accessed 28.3.2021].
- Bosch et.al (2019) How to Promote Retirement Savings for Low-Income and Independent Workers: The Cases of Chile, Colombia, Mexico and Peru. Inter-American Development Bank, Labor Markets Division. https://publications.iadb.org/publications/english/document/How_to_Promote_Retirement_Savings_for_Low-Income_and_Independent_Workers_The_Cases_of_Chile_Colombia_Mexico_and_Peru_en.pdf, [accessed 2.4.2021]. <https://doi.org/10.18235/0002016>
- Croatian Bureau of Statistics (2021). *Persons in paid employment, by activities, December 2020*, https://www.dzs.hr/Hrv_Eng/publication/2020/09-02-01_12_2020.htm, [accessed 26.3.2021].
- Hanfa. (2021a). *Pension funds Statistics*, <https://www.hanfa.hr/publications/statistics/#section2>, [accessed 20.3.2021].
- Hanfa. (2021b). *Standard presentation format*, https://www.hanfa.hr/media/5530/spf_january_21_2622021.pdf, [accessed 20.3.2021].
- Le Blanc, J. (2011). The third pillar in Europe: Institutional factors and individual decisions. Deutsche Bundesbank Discussion Paper, Series 1: Economic Studies, 9/2011. Frankfurt am Main: Deutsche Bundesbank.

- Marcinkiewicz, E. (2017). Factors Affecting the Development of Voluntary Pension Schemes in CEE Countries: A Panel Data Analysis. *Central European Economic Journal*, 3, 50, pp. 26–40. <https://doi.org/10.1515/ceej-2017-0015>
- Marcinkiewicz, E. (2019). Voluntary Pensions Development and the Adequacy of the Mandatory Pension System: Is There a Trade-Off?. *Social Indicators Research*, 143, pp. 609–636. <https://doi.org/10.1007/s11205-018-2001-5>
- Matić, B., Vretenar Cobović, M. (2017). Impact of economic and non-economic factors on the sustainability of the pension system in Croatia. *Ekonomski vjesnik*, 30, 1, pp. 51-65.
- OECD (2020). Financial Literacy of Adults in South East Europe, <https://www.oecd.org/daf/fin/financial-education/Financial-Literacy-of-Adults-in-South-East-Europe.pdf>, [accessed 2.4.2021].
- Official Gazette (2015). The National Strategic Framework for Consumer Financial Literacy for the period 2015 – 2020. 11/15.
- Official Gazette (2019). Voluntary Pension Funds. 19/14, 29/18, 115/18.
- Olgić Draženović, B., Buterin, V., Buterin, D. (2018). Strukturne reforme zemalja CEE-a u tranzicijskom razdoblju - pouke i zaključci. *Zbornik Veleučilišta u Rijeci / Journal of the Polytechnic of Rijeka*, 6, 1, pp. 127-142. <https://doi.org/10.31784/zvr.6.1.8>
- Olgić Draženović, B., Hodžić, S., Maradin, D. (2019). Efficiency of Mandatory Pension Funds: Case of Croatia. *The South East European Journal of Economics and Business*, 14, 2, pp. 82-94. <https://doi.org/10.2478/jeb-2019-0015>
- Olgić Draženović, B., Kusanović, T., Jurić, Z. (2015). Značaj institucionalnih investitora u evoluciji financijskih sustava. *Praktični menadžment: stručni časopis za teoriju i praksu menadžmenta*, 6, 1, pp.165-173.
- Olgić Draženović, B., Suljić Nikolaj, S., Buterin, V. (2019). Institutional challenges for mandatory pension funds in Central and Eastern Europe. In *Proceedings of the 45th International Scientific Conference on Economic and Social*. Varazdin, Croatia: Varazdin Development and Entrepreneurship Agency; Moscow, Russia: Russian State Social University; Warsaw, Poland: Faculty of Management University of Warsaw; pp. 349-357.
- Orszag, P. R., Stiglitz, J. E. (2001). Rethinking Pension Reform: Ten Myths About Social Security Systems. In Stiglitz, R., Holzmann, J. E (eds) *New Ideas about Old Age Security- Toward Sustainable Pension Systems in the 21 st Century*, The World Bank.
- Puljiz, V. (2007). Hrvatski mirovinski sustav: korijeni, evolucija i perspektive. *Revija za socijalnu politiku*, 14 (2), 163-192. <https://doi.org/10.3935/rsp.v14i2.698>
- Vehovec, M. (2011). Financijska i mirovinska pismenost: međunarodna iskustva i prijedlozi za Hrvatsku. *Privredna kretanja i ekonomska politika*, 21, 129, pp. 65-85.
- World Bank (1994). *Averting the old age crisis: Policies to protect the old and promote growth*. Washington DC: World Bank. <https://doi.org/10.1596/0-8213-2970-7>
- World Bank (2010). *Croatia: Diagnostic Review of Consumer Protection and Financial Literacy*, Washington, DC: World Bank.