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DO PEOPLE SAVE ENOUGH FOR TOMORROW? THE COMPARATIVE STUDY ON WESTERN BALKANS

Siniša Zarić[1], Vojislav Babic[1]*

[1]University of Belgrade, Serbia, e-mail: sinisha.zaric@gmail.com, babic.voja@gmail.com

Abstract: Due to the increase in life expectancy and the decline in the birth rate, which has an impact on the increase in the proportion of the older population, there is a need to develop a rational pension strategy. This is a behavioral economic analysis of voluntary pension funds in the Western Balkans. The main goal of the research is to determine whether fund users behave according to the well-known Richard Thaler model or have a specific pattern of behavior. According to Thaler's model, people make financial decisions with limited rationality. They are impatient and short-sighted, which is why they focus on the present rather than the future. Younger employees mainly opt for actions that give them immediate gratification rather than planning for the future. More money flows into pension funds when people are approaching retirement, not when they are in their best working and financial position. Another peculiarity of the Western Balkans is that they have gone through a long period of transition, a period of instability, and that long-term savings were not on the agenda for the average family. The paper is based on a hypothesis that should determine whether users of voluntary pension funds in Western Balkans countries (Serbia, North Macedonia, Montenegro) increase a portion of their salary savings as they approach the retirement period. Analysing the content of the statistical reports collected in the pension funds was used as a method of data collection. A regression analysis was performed to examine the established model. Model creation and calculations were performed in IBM Amos 25 and SPSS 25. A significance level was set to α=0.05 (Hair et al., 2019). The results for Serbia, showed significant values for all three R coefficients. R square values were taken into account. Based on the results, the predictor variable (number of users by age) has significantly explained the variability of "amounts of accumulated funds by age" in all three countries of the Western Balkans. The fund users in all three countries behave similarly, paying significantly higher amounts into the fund after the age of forty. Beneficiaries aged between 20 and 39, members of a very productive labour cohort, pay lower, often symbolic amounts into the pension funds. We are talking about relatively young funds in their infancy, which are unstable or insufficiently stable. A more stable and efficient structure can be observed in the case of Serbian voluntary pension funds.

Keywords: Voluntary pension funds, behavioural economics, savings, accumulated funds by age, Western Balkans
Field: Social sciences (economics)

1. INTRODUCTION

A voluntary pension fund is an institution to which members pay money to save. The fund serves to complete the first pillar, mandatory state pension insurance and to provide additional income to people in the third age. There is an obvious interest of the states to promote the allocation of an increasing portion of the population's future earnings in order to design retirement savings. The problem of reducing current consumption in favor of the elder age people's standard has many dimensions. One was described by Thaler and Sunstein (2012) as a reply to instincts (thus contributing to the behavioral economics in general) and in the article of Thaler and Benartzi (2004) under the logo "Save More Tomorrow". The researches of Thaler were awarded the Nobel Prize in Economics in 2017 (Imas, 2022). Another problem, characteristic not only exclusively for the Western Balkans (WB) countries, is that the region passed a long transition period, a period of instability and that long-term savings were somehow out of the agenda of the average families. So, if any, the choice architecture of WB citizens is sharing the conclusions of Thaler's nudging theory (opposite to the neoclassical theory, more money goes to the funds as the individuals are approaching their retirement period, not when they are in their best working and financial conditions). On the other side, remains the problem of the lack of large–scale information campaign. The problem is also noticed in the mature economy such as Sweden, in the research based on data from a Swedish Pension Agency (Cronqvist, Thaler and Yu 2018). The other aspect of the problem is focused on the "Pay As You Go Pensions" (Fanti and Gori, 2010).

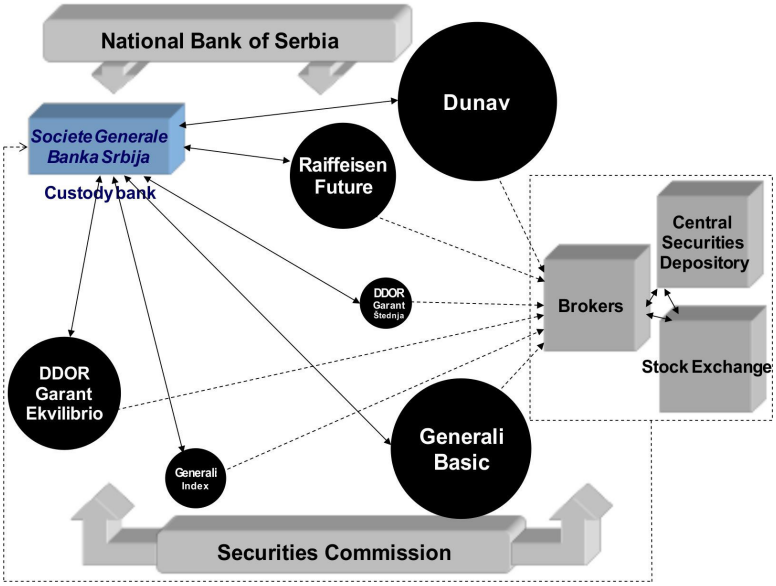
The main hypothesis H of the research on WB countries is: Participants increase a portion of their salary savings as they approach the retirement period.

*Corresponding author: sinisha.zaric@gmail.com

2. MATERIALS AND METHODS

The data were collected by analyzing the content of official statistical reports and data obtained on the field, from the databases of the pension funds of Serbia, North Macedonia and Montenegro. Voluntary pension insurance in Serbia was formalized by the 2005 Law on Voluntary Pension Funds (Andžić, 2013). According to the National Bank of Serbia (2019), there are four management companies operating in Serbia, managing the assets of seven voluntary pension funds, one custodian bank and five intermediary banks (Figure 1):

Figure 1 Market of Voluntary Pension Funds in Serbia: Participants



Source: Figure was taken over and customized from National Bank of Serbia, 2019

The net assets of the volontary funds amount to about EUR 342.45 million (NBS, 2019). Most users are aged 40 to 60, about 62%. Looking at the amount of accumulated funds by age, by far the highest values were recorded for users aged 40 to 60, while for users aged 20 to 39, significantly smaller amounts of money were accumulated (Table 1).

Table 1 SERBIA: Distribution of users and accumulated funds by age N=191753

Age group	0-9	10-19	20-29	30-39	40-49	50-59	60 +
Number of Users	162	396	8353	41989	68793	49971	22089
Amount of Funds (millions of RSD*)	5	10	382	6541	17279	12403	3278
Average Holdings in RSD	30864	24924	45706	155781	251768	248196	148419

*Republic of Serbia Dinars; 1 EUR = 117.39 RSD
Source: National Bank of Serbia 2019

Voluntary pension funds in North Macedonia have been formalized for the first time by the Law on Voluntary Capital Funded Pension Insurance (Government of FYRM, 2008). There are three pension companies in North Macedonia, that manage voluntary pension funds: Sava Pension Company a.d. Skopje, KB First Open Voluntary Pension Fund - Skopje and Triglav Pension Fund Skopje. The work of pension funds is supervised by the Agency for Supervision of Fully Funded Pension Insurance-MAPAS. In Table 2, observed according to the amount of accumulated funds by age, the highest values were recorded for users aged 40 to 60, while for users aged 20 to 39 there were significantly lower amounts.

Table 2 NORTH MACEDONIA: Distribution of users and accumulated funds by age N=24405

Age group	10–19	20-29	30-39	40-49	50-59	60+
Number of Users	4	1210	7089	7823	5722	2557
Amount of Funds in MKD*	75627	19967873	220712409	506996299	522754068	254642165
Average Holdings in MKD	18907	16502	31134	64808	91359	99586

*North Macedonian Denar; 1 EUR = 61.36 MKD
Source: Agency for Supervision of Fully Funded Pension Insurance-MAPAS, 2019

The Parliament of Montenegro adopted the Law on Voluntary Pension Funds on 12 December 2006 (Government of the Republic of Montenegro, 2006). There are two voluntary pension funds in Montenegro. "Pension Plus", managed by "Atlas Pension", started operation in February 2009, while "Market Pension", managed by "Market Invest", started operation in July 2009. In 2013, the net assets of the two operating pension funds amount to EUR 353.149,79 and the number of their members was 2.191 (Radusinovic, 2013). Until 2019, "Atlas Pension"is managed assets of around EUR 500,000 (Milosevic, 2020), when its custodian bank went bankrupt, and the Atlas Pension Management Company's license was revoked. On January 25, 2019, after two years of work problems, The Capital Market Authority of Montenegro revoked the license of another voluntary fund "Market Invest" from Bijelo Polje, which managed the assets of the voluntary private fund "Market Pension".

Looking at the amount of accumulated funds by age, by far the highest values were recorded for users aged 40 to 60, while for users aged 20 to 39 significantly smaller amounts of money were accumulated (Table 3):

Table 3: MONTENEGRO: Distribution of users and accumulated funds by age N=2381

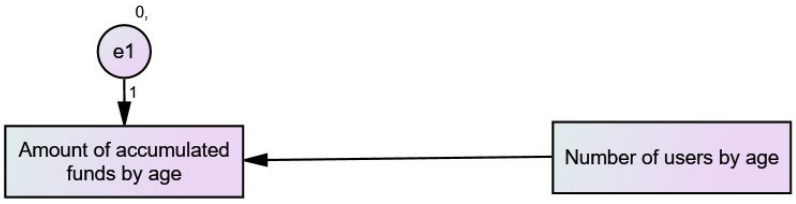
Age group	10–19	20-29	30-39	40-49	50-59	60+
Number of Users	59	211	501	731	591	288
Amount of Funds in EUR	12036	44310	114729	280704	277770	89568
Average Holdings in EUR	204	210	229	384	470	311

Source: Security Commission of the Republic of Montenegro, 2019

3. RESULTS AND DISCUSSION

Figure 2 shows a path analysis:

Figure 2 Conceptual model



Designed in IBM Amos 25

In order to test hypothesis, the following equation was set:

$$Yi = C + bXi + ei$$

Where, for i = n observations:

C = constant
b = slope coefficient of Xi predictor

Y = dependent variable (amount of accumulated funds by age)
X = indipendent variable (number of users by age)
ei = random error

The data from Tables 1-3 were used in the calculation. A significance level was set to α=0.05 (Hair et al., 2019). The results for Serbia, showed significant values for all three R coefficients (Table 4). Based on the value of R2, the predictor variable explained 94.8% of the variability of ”amounts of accumulated funds by age“, with significant probability (Table 5). The remaining 5.2% could be attributed to other variables that were not included in the model.

Table 4 Serbia: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.974[a]	.948	.938	1695.106
a. Predictors: (Constant), Number of users by age				

Source: Authors' calculations

Table 5 Serbia: Anovaa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	264300143.347	1	264300143.347	91.982	.000[b]
	Residual	14366920.081	5	2873384.016		
	Total	278667063.429	6			
a. Dependent Variable: Amount of accumulated funds by age						
b. Predictors: (Constant), Number of users by age						

Source: Authors' calculations

The table 6 showes the contributions to the dependent variable by predictor. When the predictor jumps by one point, the amount of accumulated funds by age increases by 0.248.

Table 6 Serbia: Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1093.384	955.076		-1.145	.304
	Number of users by age	.248	.026	.974	9.591	.000
a. Dependent Variable: Amount of accumulated funds by age						

Source: Authors' calculations

In the case of North Macedonia, R2 is 0.66, which is slightly lower than in Serbia but still a theoretically significant value (Tables 7 - 8):

Table 7 North Macedonia, Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.812[a]	.660	.575	147696821.302
a. Predictors: (Constant), Number of users by age				

Source: Authors' calculations

Table 8 North Macedonia: Anovaa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16933535222593811 2.000	1	16933535222593811 2.000	7.763	.050[b]
	Residual	87257404090910576 .000	4	21814351022727644 .000		
	Total	25659275631684870 4.000	5			
a. Dependent Variable: Amount of accumulated funds by age						
b. Predictors: (Constant), Number of users by age						

Source: Authors' calculations

When the predictor jumps by one point, the amount of accumulated funds by age increases by 56561.989 (Table 9):

Table 9 North Macedonia: Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	24125518.327	102246694.634		.236	.825
	Number of users by age	56561.989	20301.214	.812	2.786	.050
a. Dependent Variable: Amount of accumulated funds by age						

Source: Authors' calculations

In the case of Montenegro, the predictor variable explained 87.6% of the variability of"amounts of accumulated funds by age"while the remaining 12.4% could be attributed to other variables that were not included in the model (Tables 10-11).

Table 10 Montenegro: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.936[a]	.876	.845	45696.351
a. Predictors: (Constant), Number of users by age				

Source: Authors' calculation

Table 11 Montenegro: Anovaa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59066250889.884	1	59066250889.884	28.286	.006[b]
	Residual	8352625805.616	4	2088156451.404		
	Total	67418876695.500	5			
a. Dependent Variable: Amount of accumulated funds by age						
b. Predictors: (Constant), Number of users by age						

Source: Authors' calculations

When the predictor jumps by one point, the amount of accumulated funds by age increases by 429.142 (Table 12):

Table 12 Montenegro: Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-33778.225	37058.107		-.911	.414
	Number of users by age	429.142	80.689	.936	5.318	.006
a. Dependent Variable: Amount of accumulated funds by age						

Source: Authors' calculations

It is concluded that the hypothesis H is confirmed.

4. CONCLUSION

Since the predictor variable has significantly explained the variability of" amounts of accumulated funds by age", we note that hypothesis H has been confirmed in all three countries of the WB. In all three observed cases, these are relatively young funds in their infancy, which are unstable or insufficiently stable. A somewhat more efficient structure and organization of Serbian funds are noticeable. Fund users in all three countries behave in a similar, insufficiently rational way. Beneficiaries pay significantly higher amounts into the fund after the age of forty. Users between the ages of 20 and 39, the members of a very productive working cohort, pay lower, often symbolic amounts into pension funds.

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