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## Fight between the Giant and the Dwarf - The financial and retirement security basics

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### Abstract

*Nowadays financial knowledge and the financial literacy is a cardinal issue in an everyday speech, because the sub-prime crises, and its consequences highlighted the shortcomings of the financial knowledge. When we are talking about the reasons of the crisis, we always mention households', companies' and banks' responsibility, next to supervisions' and governments' responsibility as well. According to the opinions, articles, we should think, that the main problem is the lending and borrowing activity of the banks till the millennium. But it isn't true! The main reason is the lack of financial knowledge and the financial consciousness. The importance of financial culture is being discussed in many articles and studies today. Each of these papers point to the importance of financial literacy and financial knowledge. Financial literacy can only be developed by the education.*

*The reform of the pension system is a cardinal and noteworthy subject in all countries of the European Union and it is often discussed in various scientific meetings. The following study describes the present pillars of the Hungarian pension system and goes into detail about the problems of the mandatory social insurance system, using demographic and statistic data. The main objective of this essay is to present a possible scenario of changes in the pension benefits in Hungary. It applies various statistics and a research based on a questionnaire on economical attitudes.*

Keywords: financial culture and education, pension savings, pension system modeling, behavioral economics, primary research

### 1. Introduction

Globally, the world is shaken by three major explosions by the beginning of the 21st century: the population explosion, the longer-lived explosion, and the information explosion (Iván, 2004). Most futurists, if not many, generally agree that there is no perfect way to see what the world will be like in just ten years (Csiszárík-Varga, 2017). It is possible to research the direction in which economic, social, cultural and other trends are moving, but the unknowns, which suddenly steer all previous processes into a new channel, cannot be counted on anyway. Future values of climate change or demographic change can be calculated, but no general laws apply to human history. We try to scrutinize the regularities, rhythms and forecasting trends behind social and economic change. Hungarian pension system is based on two main pillars: the mandatory social

insurance system and the voluntary funds (Novoszáth, 2014). The modern mandatory social insurance system is burdened by three serious problems which threaten the financial balance of the Hungarian pension system in the long run: the radical ageing of the population (people become older and older), the low level of employment (there are more who get assistance and less who pay contributions), Partial payment of contributions (the state pension system operates at a loss). The pay as you go system means that the state gets a certain pension contribution from employees every month which is distributed as benefits next month among the pensioners. The problem is that the capital reserve is not ensured for the pensions to be distributed later, thus active employees only get a promise from the state to ensure their retirement benefit. Pension system experts realised as early as around 1990 that the pay as you go system was not sustainable for long with its existing conditions, the increase of the population would not be as considerable as it was after the second world war. They all predicted that birth rate would be set at a lower level, so fewer people would reach their earning years (Augusztinovics, 2014).

Besides the ageing of population there is the problem the low proportion of the actively employed population. Though the situation of the Hungarian job market generally improved in 2020, we still have to face various challenges. In the third quarter of 2020 full employment reached 62.8% (EU average being 65.5%), and unemployment rate was 7.4% among people 15-64 years old. Improvement of the job market can be explained by the expansion of the public employment program and the increase of those having jobs in foreign countries (EPC, 2020). As far as long term employment and employment of young people is concerned, unemployment rate is still very high. Unemployment is a serious problem among women with young children and among the Roma community. During the last few years poverty has increased which indicates that the social safety cannot effectively decrease poverty. The social and educational systems do not really contribute to creating equal treatment and equal opportunities. The health care system, although it has gone through considerable transformation in the last few years, is faced with serious challenges. The health state of the population is rather poor and resources are not well exploited (EPC, 2020). The first two tendencies require the increase of contribution rate, decrease of the proportion of pension/wages or the further increase of retirement age. The third tendency on the other hand needs making the pension system more attractive and making control stricter. The reasons of avoiding paying contributions are vaguely known and experts are carrying out researches to find them. The radical increase of the minimum wage requires the increase of contributions in certain segment of the shadow economy while in other segments there will be more unemployed and more people who do not pay contributions. Governments usually do not like to hear about this complex problem let alone openly discuss it (EPC, 2018).

Hungary has the highest contributions for the minimum wages among all member countries of the Organisation for Economic Cooperation and Development (OECD). However minimum wages are not the highest in Hungary. The rate of state redistribution, especially tax centralisation exceeds by some percentage points the data of the neighbouring countries. To put it in other words, we have to pay more tax here in Hungary. An average Hungarian tax payer pays around 60% of his or her total income as a tax. 60% of all these high contributions are payed as welfare expenditure of which almost half is spent to pay pensions (OECD, 2019). On the basis of charts 1, 2 and 3, it can be declared that the Hungarian state will soon be unable to finance the rightful pensions of retired people from the contributions of active employed tax payers.

**Table 1.: Change in population with number of unemployed and active job holders in Hungary**

(million)	2019	2050
Population	9,8	9,3
Working-age population (20-64)	5,944	4,953
Labor force 20-64	4,634	4,224
Number of elderly (65+)	1,92	2,58
Number of 55-64	0,951	1,188
Number of unemployed	0,17	0,19

Source: EPC, 2020 and author's my own compilation

The system does not finance itself, and there is a constant off-balance. The state has to require further contributions from tax payers to reach a balance. On the basis of the model for the pay as you go system The 2020 report of the European Committee describes a pre-calculation (EPC, 2020). This report suggests that considering Hungarian conditions in 2018 there will not be sufficient amount of pension in the future even if the general attitude to saving changes. It also concludes that elderly people will not have enough income thus we have to opt for a form of self provision in order to have a sufficient level of income when we retire (EPC, 2018).

**Table 2.: Change in population with unemployment rate in Hungary**

(%)	2019	2050
Share of older population (55-64)	21,0	24,8
Participation rate (20-64)	77,9	85,3
Old-age dependency ratio 20-64	32,2	52,0
Dependence rate of elderly (65+ / 20-64)	64,4	87,0
Unemployment rate (20-64)	3,3	3,9
Employment rate (20-64)	75,4	81,9

Source: EPC, 2020 and author's my own compilation

Pension systems should be improved so that they are suitable and sustainable throughout the European Union. In the last few years most of the member countries have transformed their pension systems due to the ageing of society. However as the recommendation report in 2020 suggests further reforms are needed to make pension systems more efficient and financially sustainable. The conformance of pension systems should also be preserved to supply proper income. Considering the trend of increasing life expectancy a more dynamic attitude has to be accepted to define the age of retirement. By systematically connecting mandatory retirement age to life expectancy there should be a balance between active and retirement years. (EPC, 2020)

**Table 3.: Changes in pension benefits in Hungary and in EU-27**

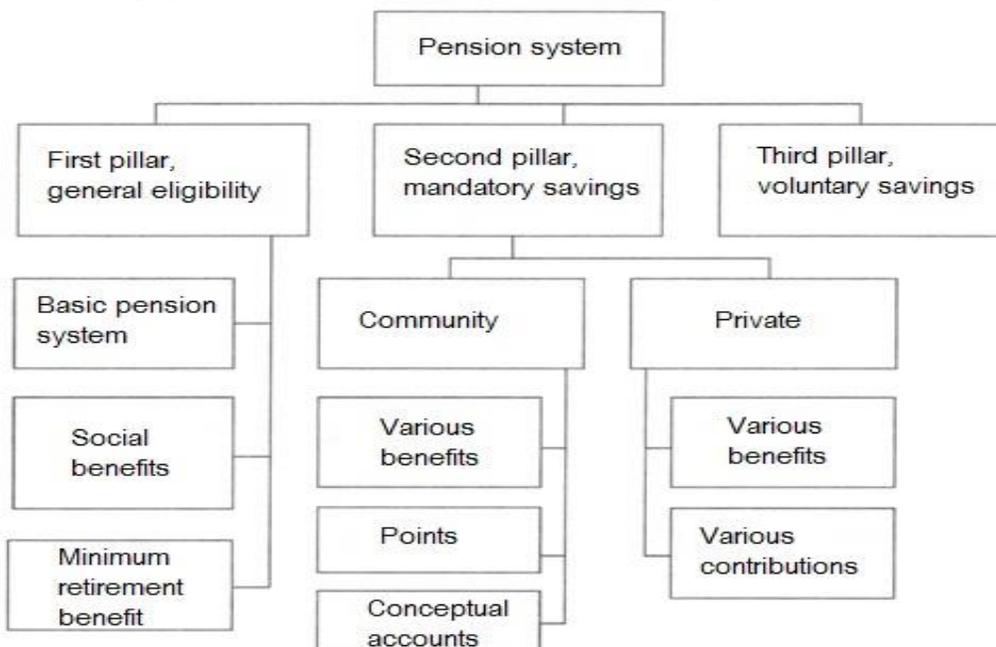
(GDP %)	Pension benefits		All benefits	
	2019	2050	2019	2050
Hungary	8,3	10,6	21,2	28,8
EU-27	12,7	12,7	23,4	27

Source: OECD, EPC, KSH, 2020 and author's my own compilation

## 2. Sustainability of the state pension system

ORCD countries which Hungary joined in 1996 have as their main objective to help the governments of member countries create the best economical and social policies possible. Chart 1 depicts the main frame of different pension systems. As already mentioned Hungarian pension system has two main pillars, the mandatory social insurance system (giant) and the voluntary funds (dwarf). Among the 30 OECD member countries only Hungary, New-Zealand and Ireland do not have mandatory second pillar based on community and private systems (Novoszáth, 2014).

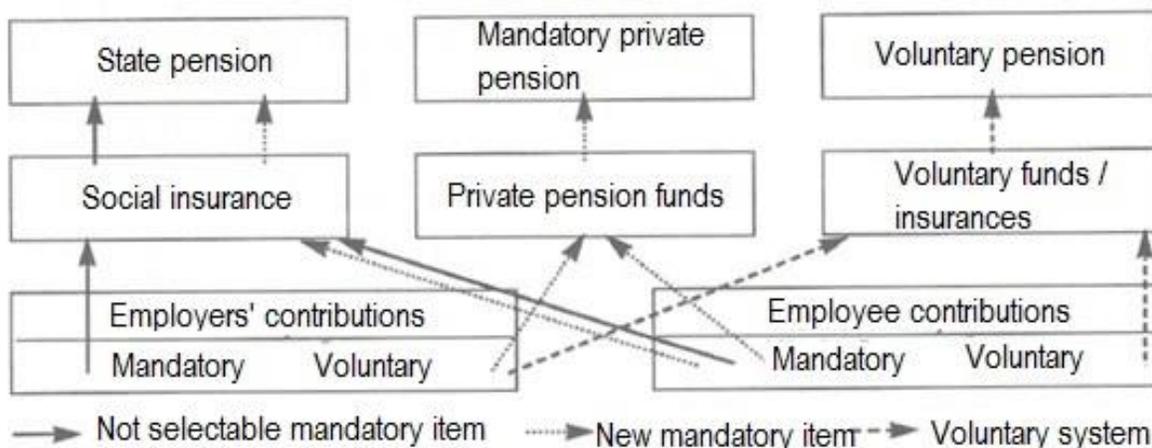
*Figure 1.: Summary of the various kinds of retirement benefit systems*



*Source: OECD, 2019*

The population of our country will continuously decrease until 2050, while its age composition will be unfavorable. With all factors unchanged, by 2050, the old-age maintenance rate will increase to over 60 percent. This poses a long-term risk to the sustainability of the Hungarian economy and the pension fund. The aim of our study is to explore the risks of the Hungarian employment and pension system based on the available forecasts and trends, with a view to 2050. Chart 2 depicts pension systems based on three pillars. The nationalization of private voluntary pension funds was highly debated, although it contributed to the stabilization of the pension system in Hungary.

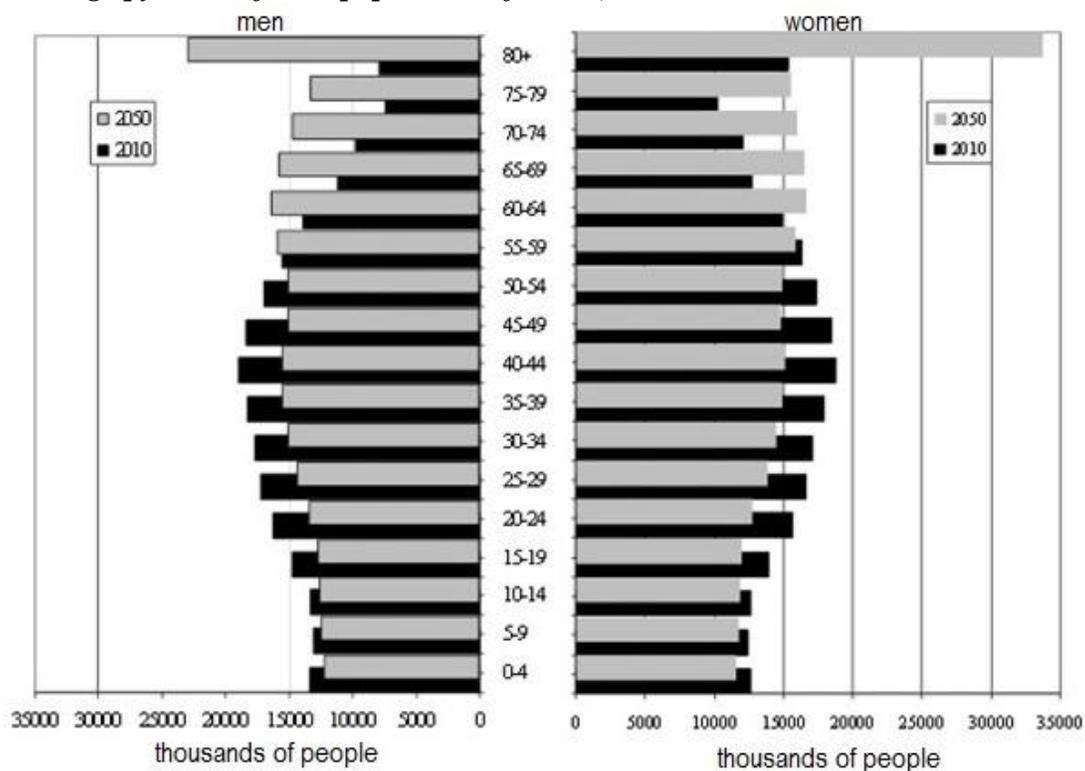
**Figure 2.: Pension system with 3 pillars**



Source: Bankers, 1998

Experts have different opinions about the effects of nationalization. Some say that at least the state could stabilize incomes and but others have completely different opinion. Those who criticise this measurement admit that private pension funds can go bankrupt any time, so as many as 40 years of active employment may produce no pension at all. On the other hand the state can in any case create financial security for pensions, even by means of political power. (Holtzer, 2010). According to demographic forecasts Hungarian population will not reach 9 million by the year 2060. It is really interesting to observe the tendencies of the population of 50 and 80 years in the following years. Due to the ever increasing life expectancy the proportion of people of 50 years and of people of 80 years will be equal. Because of decrease in birth the proportion of the active and „productive” segment of the population is becoming less and less every year, thus the financial support of the quickly growing elderly generation will be soon endangered. This process will change the social and economical nature of the country which brings up serious challenges. As chart 3 shows the population of the whole European Union follows the same tendencies and the age pyramid is very similar to that of Hungary.

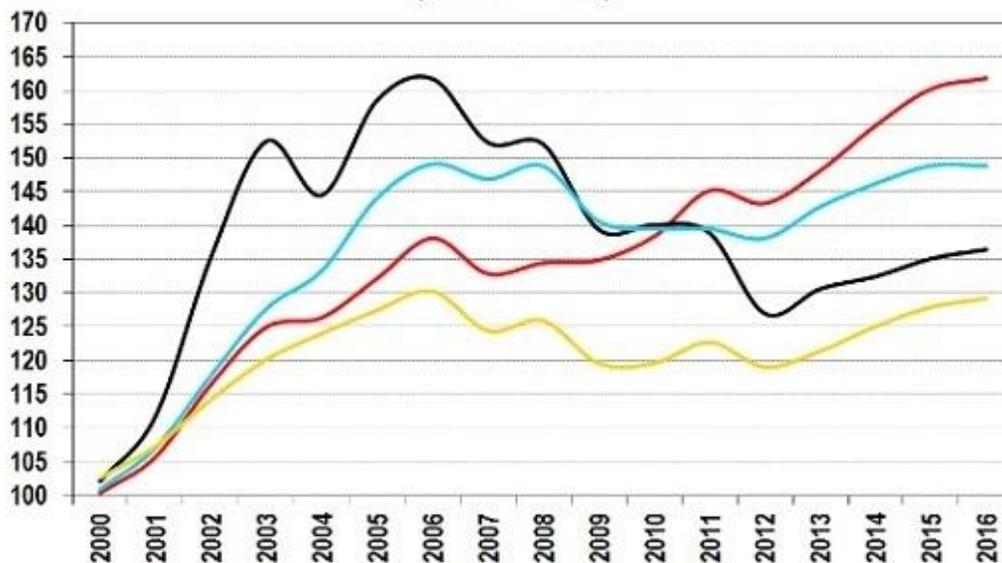
**Figure 3.: Age pyramid of total population of EU27, 2010-2050**



Source: Eurostat, 2011

The previously described data prove that there is a growing need of self provision as we can only count on our own savings in our elderly years. The only difference between voluntary pension funds and private pension funds is that in private funds the amount of contribution payed by individuals are not set by the individuals themselves but by the law. There are two important data to be compared: average wage and average pension. On the basis of this difference it can be predicted whether we our pension benefit is going to ensure an acceptable living standard. Charts 4 show these tendencies. Numbers are going to increase but there will always be a difference in the future, which means that average wage will be higher than average pension.

**Figure 4.: Average pension (blue), average wage private sector (red), average wage public sector (black), real income (yellow) (between 2000-2016)**  
(1999 = 100)



Source: KSH, 2014

Therefore, experts recommend a mixed system. In the current pension system, a supplementary element can be a voluntary pension fund. This can help sustain after retirement the standard of living one got used to in one’s active years. Other pension saving systems include pension insurance.

### 3. Financial saving forms and possibilities

The definition and importance of financial culture is one of today’s popular subjects. The financial crisis pointed out how much damage the lack of financial literacy can cause, and how much destruction can be caused by the events occurring due to irresponsible financial decisions. Nevertheless, we should not have waited for nearly ten years with the development of financial culture, it should have been started straight after the crisis worldwide. The low level of knowledge was not an unknown fact in Europe and in the United States of America, since several articles and studies had already drawn the attention to it long before the crisis (Van Els et.al, 2007). The absence or inadequacy of financial literacy causes damages to the economy and leads to irresponsible decisions, which in many cases must be solved by the governments, just like in Hungary in relation to bailing out the foreign currency loans.

Numerous researchers have tried drafting the definition of financial culture, yet this study builds on the definition used by the Hungarian National Bank. In the strict sense of the term financial culture does indeed mean financial reading and writing skills, for which special professional knowledge is needed. According to the generally accepted definition “it is such a level of financial knowledge and skills, with the help of which the individuals are able to identify the basic financial information necessary for their conscious and careful decisions, interpret them after their acquisition, and on that basis they are able to make the actual decisions, assessing their possible future financial and other consequences” (MNB – PSZÁF, 2008). Based on the definition

of Atkinson and Messy (2012), financial culture is a combination of such knowledge, skills, abilities, attitudes and behavioural patterns that are essential for making the right financial decisions both at a personal and social level. In the possession of financial literacy welfare can be increased and improved, which can be felt not only at micro, but at macro level as well. In the opinion of Luksander et. al. (2014), financial culture is basically the ability of processing the financial information and making the right financial decisions.

Although the contribution to the pension system is one of the highest in the OECD countries in Hungary, one receives only 60 percent of one's earnings as a pensioner. In terms of the value of pensions, there are several countries where contributions are largely made to mandatory private pension schemes. The mandatory contribution to the state pension fund is the second highest in Hungary among the OECD countries. An average worker pays roughly 30 percent of his income into the pension system, which is higher only in Italy. Nevertheless, the replacement rate of pensioners (i.e. the proportion of retirees receiving their previous salary as a pension) is only 60 percent in Hungary, thus Hungary is in the middle of the OECD (between Japan and New Zealand - of course, the average income in these two countries is much higher) . In Hungary, the pensions currently paid out entirely come from the mandatory state pension contribution. Currently, the proportion of VRS in the OECD countries is low, especially in the Anglo-Saxon countries (Canada, the United Kingdom, the USA), which make up a significant part of old-age benefits. In other states, such as the Netherlands and Denmark, a large proportion of payments come from mandatory private pension funds. These countries occupy the first two positions in terms of the replacement rate of pensions: in Denmark, pensions are equivalent to more than 85 percent of average salary and in the Netherlands more than 95 percent. However, in general, it cannot be said that the higher the proportion of mandatory private pension, the greater the salary one receives as a pensioner. For example, Italy and Austria are in the third and fourth place, where, like Hungary, only the state pension fund has to pay pension contributions, while in Estonia and Lithuania, for example, there is a compulsory private pension scheme, although the replacement rate is lower than in Hungary.

In fact, the value of pensions relative to salaries depends on a number of other factors, from the dependency ratio to the overall performance of the economy. In addition to increasing pension contribution and tax, and retirement age, there is a more effective and sustainable solution: self-care. This means that people create their own private pension fund, which will enable them to live a full life in old age. This relieves the state too because they save money privately, albeit with state help, and they manage their own wealth. There are many forms of savings (e. g. voluntary pension fund, pension savings account and pension insurance). When choosing the right savings product, one must decide how important the term (time period) and liquidity are. Nobel Prize-winning British economist Angus Deaton confirms the findings of his research on consumption, well-being and poverty that money makes people happy from poverty to subsistence and then to security. Above one level, however, more money no longer causes a significant improvement in quality of life (Stephoe - Deaton - Stone, 2015). Mention should also be made of research into the technique of surveying the world's extreme poverty, people living on less than one or two dollars a day, and the reliability of data, especially household surveys conducted by the National Sample Survey (NSS) in India. His research also covers the interrelationship between the social situation, health, income and education, and its effects on the national economy.

The Almost Ideal Demand System (AIDS), created by Angus Deaton, is the first globally applicable method for measuring poverty. The concept of the so-called Deaton paradox is also

derived from it, i.e. that the level of consumption does not usually change even in times of rapid rise and fall in income (Deaton, 2017). The levels of the Maslow Hierarchy of Needs, if one looks at income at the first two levels, money is needed to buy food, provide a place to sleep, to live almost exclusively with the contribution of money. Of course, these needs must be met in the long run, too, so it is clear that the second pillar is the money as the key to our long-term sustainability. As one moves up the pyramid, one becomes happy and content with his own life. After this level, money as a value cannot do more for one's happiness, because love and acceptance cannot be bought, of course. The hierarchy envisioned by Maslow does not always hold true, as has been confirmed by numerous studies (Wahba - Bridwell, 1976). According to forecasts, the number of pensioners will increase dramatically, and this cannot be changed in the short term. In the current pension system, one of the complementary elements of securing old age livelihoods may be the choice of a voluntary pension fund. A voluntary pension fund can enable the citizens to maintain their standard of living during their active years when they retire.

These institutions supplement other retirement savings such as pension insurance. Pension is, in general terms, "the benefit that senior citizens of a country are entitled to, and therefore not on a means-tested basis. Its amount depends on the length of service, that is, the number of years of work (earning) and previous earnings" (Matits, 2016). This definition is a good reflection of the public perception that the concept of pension relates exclusively to social security benefits. However, any regular old-age income to which one is entitled in one's active age is considered a pension. Thus, our retirement income may or may not be our retirement income. It should be made clear that there is no form of public benefit that can, and cannot, be a good pension for everyone. So if a person wants to be really safe in his old age, then he will really have to do a lot. In addition to raising taxes and contributions and pushing the retirement age, there is a more effective and sustainable solution called self-care. This means that people create for themselves a private pension fund that allows them to live a full life as they grow older. This will also relieve the state of the burden because, with the help of the state, they are putting money aside. They manage their own assets and do not pay more for the community. There are many pension savings options available. Before choosing the right savings product, one needs to decide in advance how much time and liquidity will be involved in choosing the savings form. The state supports three types of retirement savings solutions: the Voluntary Pension Fund (VPF), the Retirement Savings Account (RSA) and Pension Insurance. These are worth thinking about for a minimum of 10-20 years. Accumulated private pension funds can be taken up when one reaches retirement age, with some restrictions being made available earlier.

#### **4. The role of self-care in one's decisions**

##### *4.1 Behavioural economics and decision-making typology*

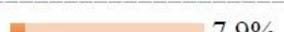
Self-care, i.e. savings for retirement (voluntary pension fund, insurance, other savings, etc.). Of these, it is easy to choose which one or more people want to provide for their future expected pension level (Havran, 2011). Decisions in general, such as what type of "financial investment" to choose, cannot be supported by human reasonableness or preference, and this is also supported by economic psychological research because it is overridden by other non-rational considerations (Fodor, 2013). Research has shown that the processing of rational and non-rational information is related to the cerebral hemispheres. The left hemisphere is the conscious, the dominant, the logical, the rational, the analyst, the positive thinker, and the right hemisphere is the equivalent of the

unconscious, irrational, emotional, negative thinking. Positive or negative information processing is a solid, though influential personality trait (Hámori, 1998). For most people, left hemispheric function is a hallmark of positive information processing (Fodor, 2013). Its positivity lies in its confidence that it is difficult to bear crisis situations that jeopardize its positive outlook and expectations in the good course of events. The left hemisphere is characterized by a systematic, analytical problem approach, research and listing. The right hemisphere is more capable of processing negative information, that is, it plays with the expected outcomes in a given situation, imagines the outcomes, and is therefore more likely to be activated when a given situation occurs. From an economical point of view, research has shown that the right hemisphere is also decisive in shaping individual preference systems. From the point of view of problem solving, the right hemisphere gathers experience on each outcome. Thus, decision-making is heavily influenced by which cerebral hemisphere the individual relies on. Another decisive factor in decision making is the determination of the decision maker. A determined person makes a decision faster than a less determined partner.

#### *4.2 The role of financial awareness in decision making*

This paper also focuses on the present and future status of direct persons. It's important to understand what respondents are directing themselves to the decision about self-care, what habits and processes influenced their decision, and more precisely what motivated them to choose the form of savings under consideration. With the help of questionnaire research, the author examined respondents' behavioral fundamentals and factor analysis methodology to determine what choices one has in relation to the expected pension level in the future. The research examines the importance of self-care as a pillar of retirement supplementation in the public consciousness and one's decisions today. It also examines the possible future pension systems, the future generations of retirement, how many people will work and how they will work in the future. The research is based on the basic assumption that people think about retirement with fear and uncertainty. Based on the previous chapters it can be seen that the Pay-As-You-Go (PAYG) system is in crisis, so the II pillar, self-care is receiving increasing attention today. In order to gain a deeper understanding of the motivations behind one's decisions, parts of the factor analysis statistical procedure was used, which is nowadays a widespread computerized method of personality mapping (Sajtos - Mitev, 2007). The data of the questionnaire and the statistical calculations were done with the help of the SPSS software. The online survey was conducted in 2020. The total number of respondents was 1410 (n = 1410).

**Figure 5.: The respondent has financial savings for retirement purposes**

Retirement Savings Account (RSA)	64		7.7%
Pension Insurance	95		11.4%
Voluntary Pension Fund (VPF)	178		21.4%
Life Insurance	107		12.9%
Permanent Deposit / Investment Account	28		3.4%
Bank Deposit	76		9.1%
Cash	42		5%
Government Securities	66		7.9%
Share	38		4.6%
Bond	19		2.3%
Investment Certificate	16		1.9%
Treasury Bills	14		1.7%
Building Society	68		8.2%
Other	21		2.5%
All answers	832		

*Source: author's my own compilation*

The basic questions for which answers were sought were related to the planning of pension systems, retirement savings and self-care, retirement security, as these are the elements that determine the financial background of one's future existence, that is, the extent of one's self-care. Within the research, the answers were divided into 3 groups: 1. Knowledge of pension systems (compulsory, voluntary); 2. Financial planning (different characteristics of savings); 3. Role of self-care (personality mapping). The above three groups were analyzed separately by qualitative research. The three groups were subjected to a number of statistical evaluations, such as means, frequency, cross-tabulation. In this study, only the role of state pensions and self-care has been looked into. Based on the answers to the questionnaire, respondents are generally well informed about the pension system, but 86.2% of respondents do not consider the current state pension system to be stable. In contrast, they tend to rely on retirement savings, with 52% of respondents saying yes. Only 11.4% of respondents have pension insurance, while 29.1% have some form of retirement savings (Fig. 5). The results also show that financial savings are important for respondents. Based on the average age of those who completed the questionnaire (average age: 30.6 years), savings are important. Further analyzes show additional internal relationships, such as the role of optimism in pension savings. Old-age savings are much more important for optimistic women because yes responses are greater than for men with similar characteristics.

## 5. Summary

The population of a country changes only slowly from year to year, and the characteristics of demographic processes are drawn up over a longer period. However, the factors influencing population change are well predictable as a result of the laws of each sub-process. According to forecasts, current pension systems are likely to cause severe social and economic problems globally because of the rapid ageing of our societies. Based on forecasts, the current pension regime, and the drastic change in the ratio between active wage earners and pensioners will, with a high degree of probability, cause social, economic and other problems in the future both globally and in Hungary.

The actual pay as you go pension system is still quite popular although it has to face a serious crisis, so probably it will continue in some form or another. Experts opt for the mixed pension system but there is still no model everyone would accept as ideal. According to predictions the proportion of active tax payers and pensioners will drastically change. The problem of sustainability highly determines the possible models. The sustainability of the pension system is determined by the proportion of the employees, that is tax payers and pensioners, because pensioners receive their retirement benefit from the contributions of the active job holders. The two sides should be balanced from the point of view of macro economy. Some professional meeting and discussion are needed to try to solve the problem of retirement benefits irrespectively of politics or economical position. Research is mainly done at universities even in more developed countries while the state only plays a supportive role, as decision makers do not have time to work on new methods. Naturally the problems of the pension systems that various experts and government could not solve are not expected to be cleared up a simple essay. However it should be stated that there are possibilities to forecast the various effects of the retirement pension systems.

In view of this study it can be asserted that the students' minimal level of financial knowledge is acceptable, the common terms that they hear often are clear to them. The problems occur when they have to answer statements correctly that build on deeper financial knowledge (Csiszárík-Kocsir – Varga, 2016a, 2016b). This reveals that the importance of an initial financial training is essential and indisputable. The future generation cannot be let out to the world of economy without a solid financial knowledge. All in all, higher education still plays a huge role, either by adding new subjects or by redesigning existing ones. Financial education must get a greater emphasis in order to train more successful economic operators and employees for the future.

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