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UDK: 368.914(4-67EU)
Original scientific article

Received: June 19, 2019
Accepted for publishing: July 2, 2019

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CAPITALIZED SAVINGS AS A FACTOR OF SOCIAL SECURITY INSURANCE IN PENSION SYSTEMS OF EUROPEAN COUNTRIES

Abstract

Pension insurance is very important for the social security of every individual or insured person in this system. Pension systems are part of the social policy system, which represents organized activity of the state and other social factors and affects the sustainable development of society. Social policy deals with the causes, forms and consequences of redistribution of the national income, with the aim of overcoming social risks, helping poor and excluded people, and improving the social welfare. The pension system is a crucial part of social policy. It is a set of legal norms, financial and institutional arrangements regulating insurance against the risks of old age and disability. Since the pension system protects against the most significant social risks that can happen to everyone (e.g. old age, disability, etc.), its stability is of great importance to the population of any country. The aim of this paper is to analyze the main characteristics of pension systems in certain European countries and to identify the key parameters that play a role in further development of these systems. In doing so, the authors have investigated the compatibility of these systems with the European social model using a comparative analysis and have determined the impact of capitalized savings as an important factor in the social security of pension scheme members.

Keywords: Pension system, social policy, European social model, capitalized savings, compliance

1. Introduction

Funding the pension insurance system is one of the fundamental factors determining the standard of living of each pensioner and their financial and social security. Therefore, the level of rights that can be achieved within this system depends directly on the possibilities of its funding, i.e. its sources of funds. Maintaining the stability of the pension insurance system is one of the fundamental problems today, both for the Republic of Croatia and for most European Union countries and the world.

Worldwide, pension systems consist of several sub-schemes defined in terms of the categories of insured persons, the way of financing, the distribution of pensions and other characteristics. Therefore, pension systems may be public or private and

are obligatory or voluntary. The basic division of pension systems is into the public pension system of intergenerational solidarity funded from employee contributions, which is often referred to as PAYG (pay as you go), and capitalized pension schemes funded from the contributions of insured persons capitalized in pension funds. Since each model of pension insurance has its advantages and disadvantages, the most commonly used financing models are nowadays those where instead of one there is a system of multiple pension pillars. That is why the aim of this paper is to analyze the main features of pension systems in certain European countries (Croatia, Sweden, Switzerland, Greece and Ireland) and to establish their compliance with the European social model. In accordance with the hypothesis that capitalized savings represent an important factor in the social security of insured persons, the paper analyzes the parameters important for the sustainability of the pension insurance composition. These parameters are assigned with rankings for each country observed, with the help of which concrete proposals for further development of these systems are provided. In addition, in accordance with the second hypothesis that there is significant success of pension systems in those countries that apply the Directives in accordance with the European social model, we investigate and compare the characteristics of these systems in accordance with the applicable Directives.

2. Historical development and types of pension systems

Throughout history, old age, disability and death risks were secured through two basic arrangements. The first (informal) type of old-age insurance could be realized within the family, while the other (formal) type of insurance could be realized within the organization in which the person was employed or somehow belonged to it (enterprise, production branch, professional association). "Families in the traditional society represented the so-called "production and consumption units", but also "mutual aid communities" that looked after old people, sick and disabled" (Puljiz, 2005). This type of solidarity has been maintained for generations, and is still dominant today in underdeveloped countries. According to the World Bank data, in these countries, about 70% of the elderly people in the family are treated within their families (World Bank)[1]. In these countries (e.g. Liberia, Guinea, Nepal, etc.) there is no systematic organization of pension insurance, only savings within the traditional family structure. Formal schemes of retirement insurance emerged in the early 19th century, and are related to the development of the industrial society and the new social organization. Everyday development of large cities and employment in the industry has weakened the traditional family structure, making the population dependent on work in cities and also causing many problems to the workers at the time. In activities such as mining and railway jobs with dangerous working conditions, workers founded the so-called mutual organizations, or mutual assistance organizations, thus partially safeguarding the risks they were exposed to.

Later, in companies that performed well and achieved good business results, and at the same time were striving for stable workforce, first pension insurance funds for old age, illness, disability or death were created. "In the beginning, the pension insurance was solely controlled by the employer. When the pension was introduced, the employer's objective was twofold. On the one hand, they sought to improve social security and productivity, and on the other hand, they wanted to link workers to the enterprise or the state service, to gain control, to strengthen their loyalty and to separate them from the influence of the unions" (Puljiz, 2005). Despite the above-mentioned attempts to improve the social security of workers, most employees remained outside of such social security and/or pension schemes and were exposed to risks of industrial labour without any "safety net".

Based on the above, it is possible to conclude that this historic period within the framework of pension insurance was marked by sporadic occurrences and inequality, whereas the bulk consisted of certain forms of insurance, especially those informal ones within the family. These initial forms of so called old-age insurance is characterized by partial and unsystematic organization, frequent changes caused by the development of society, and in particular the development of certain activities in which it was necessary to ensure the risk of work injury, age, illness, disability or death. Unfortunately, in such forms of unconstitutional organization, social security did not have its full effect. In further social organization in the late 19th and early 20th centuries, the first public pension systems emerged in Western countries, marking the beginning of their modernization. One of these systems is the Bismarckian social security system based on the principles of multiple laws adopted in Germany during the reign of Chancellor Otto von Bismarck. "The first law on obligatory sickness insurance was adopted in 1883. This law introduced obligatory health insurance for industrial

workers. Two thirds of the health funds were paid by the workers, and the rest by the employers. The second law was passed in 1884, referring to the Work Accidents Act, within which employers were obliged to provide insurance for their workers in the event of an accident at work and to pay contributions to the common treasury from which compensation was paid to workers for incapacity, injury at work, etc." (Puljiz, 2005).

The third law in the framework of the Bismarckian social security system was the Law on Obligatory Pension and Disability Insurance adopted in 1889, which was also the first law on obligatory pension and disability insurance in the world. Pursuant to this law, half of the contributions were paid by the employees, and half by the employers. This Act, together with the previously adopted Health Care and Accident Insurance Act, became part of the German Social Security Code of 1911, which made the basis of the Bismarckian social security model and enabled it to spread across Europe and the world.

Key events in further development of retirement systems were the First and Second World War and the Great Economic Crisis in the late twenties and early thirties. Since wars are always accompanied by a high inflation rate that leads to financial instability and breakdown, in such a situation, only the state is able to provide the basic conditions of existence and social security. Therefore, the United States (US) pension system is also the result of the Great Depression. In the United States, the public pension insurance system was introduced after 1935 when the Act on Unemployment and the Pension Insurance Act for Workers and Employees in Industry and Trade were passed. In addition to the United States, the United Kingdom introduced changes to the pension system during the Second World War. The British Parliament adopted a new social security system based on the principles of William Beveridge in 1942 in a document titled "Social Insurance and Allied Services". Beverage's social security model was based on four principles:

1) universality - the social security system encompasses the whole population,
2) simplicity and uniqueness - one contribution covers all the risks,
3) uniformity - social benefits are the same for all, regardless of the social status and earnings of the beneficiaries,
4) centralization of the system - creation of a single public service (Puljiz, 2005).

The principles of the British social security system were applied in many European countries, and this model, like the Bismarckian social security model, quickly spread to the world. Further development and changes in retirement systems during the two wars occurred in many countries in which the state during and after the war was taking strong measures within the social policy. For easier understanding, below is the overview of the introduction of retirement insurance in some countries (Table 1).

Table 1 The year of introduction of pension and disability insurance in certain Western countries

Country	Degree of introduction of the pension system and disability insurance		
	Basically	Restrictedly operational	Completely operational
Australia	1908	1908	190
Austria	1906	1927	1927
Belgium	1924	1924	1924
Denmark	1891	1922	1922
France	1910	1946	1946
Italy	1919	1919	1945
Canada	1927	1927	1927
Netherlands	1936	1936	1936
Norway	1936	1936	1936
New Zealand	1898	1898	1898
Germany	1889	1889	1889
USA	1935	1935	1935
Sweden	1913	1913	1913
Switzerland	1946	1946	1946
Great Britain	1908	1908	1925

Source: Pusić (1996), authors

The process of introducing the pension and disability insurance system is different for each country, as the criteria of gaining economic strength in different countries developed differently and according to it, differently contributed to the adoption of the first social insurance programs. In each country, they started from certain insurance programs that were introduced in principle and were later fully realized, as the country's economic and financial capacity increased. The consequences and experiences of the two world wars and the great economic crisis, the dominance of state interventionism and rapid economic growth led to the development of comprehensive and financially generous public pension systems in Europe, America and other developed parts of the world. Chronologically speaking, pension systems evolved gradually through history, but some methods of paying contributions (e.g. a uniform division of payments to employers and employees based on the Bismarckian social security model) are still present in today's pension systems in some European countries. This further demonstrates the importance of these systems within society's social policy through the whole history of their development.

2.1 Definitions and types of pension systems

"Pension is a public institute, thanks to which citizens can have income when they are no longer able to earn a living. Through the pension insurance system an individual delays part of his/her spending, which is realized during active age, for the future when (s)he will be old and helpless" (Puljiz, 2005). In this way, through allocation of income and consumption, the individual saves for the future.

"The pension insurance system consists of several subsystems defined in terms of insured persons, the way of financing, the management of pension funds and the distribution of pensions. Pension insurance models are most often defined on the basis of five criteria: 1) employee insurance vs. universal pensions, 2) public governance vs. private management, 3) obligatory participation vs. voluntary participation; 4) defined benefits vs. defined contributions 5) current distribution vs. capitalization" (Matić, Vretenar Cobović, 2017). As to the above criteria, nowadays, the most commonly used classification of pension system is according to the most commonly used method of financing and the distribution of pension funds. The first method of collecting and distributing pensions is the current distribution based on the intergenerational solidarity, and the second method is capitalized pension funds.

For a pension system based on intergenerational solidarity, the English abbreviation PAYG (pay as you go) is used. The basic principles of the PAYG system are as follows:

1) contributions paid in by the employed population are used to finance the pensions of current pensioners,
2) the state is relieved of the obligation to pay out to retirees the funds they paid in as contributions during their working life; rather, pensions are paid out from the income of future generations of employed persons,
3) assuming a normal growth of the economy and maintaining the demographic balance, every new generation of retirees can get a higher retirement rate compared to the paid contributions during their working life (Puljiz, 2008).

The biggest disadvantage of this system is that it is most likely endangered by lower birth rates and population aging. In such a generational imbalance, these systems are unsustainable because they are more suitable for societies with full employment.

Another way of collecting and distributing pensions are capitalized pension funds. The basic principles of capitalized pension funds are as follows:

1) insured persons pay in contributions for their future pensions,
2) the contributions collected in the funds are invested in the capital market for profit,
3) insured persons receive a retirement pension when they cease to work, and the realized profit on the funds invested is calculated into their pension,
4) the profits of the paid contributions are kept in a special account for each insured person and are converted into a retirement pension when they stop working,
5) insured persons bear the risk of investment decisions of pension funds,
6) state-level funds are managed by special organizations on the principles of profitability and security of deposits,
7) the individual pension depends on the accrued amount of contributions, the profit realized and the life expectancy at the time of retirement (Puljiz, 2008).

The greatest advantage of these funds, unlike the intergenerational solidarity system, is the fact that they encourage the population to use resources responsibly and saving for old age during their working life. On the other hand, the biggest disadvantage of this pension insurance system is the exposure of pension funds to capital markets, and accordingly, the investment risks that are ultimately borne by the insured persons.

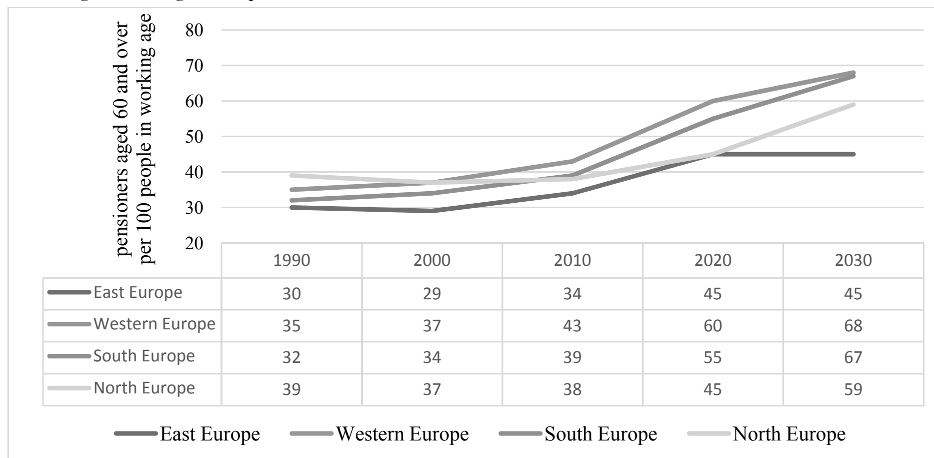
2.2 Crisis of public pension systems

The strong development of public pension insurance systems as a consequence of economic and social interventions came after the Second World War. However, starting from the 1970s, economic disturbances associated with slow economic growth, demographic changes, technological revolution, increased unemployment, the process of globalization, etc., have led pension insurance systems into crisis. Demographic causes of pension system crisis are mainly related to population aging, which is due to two factors: 1) longer life expectancy, 2) decline in birth rates.

According to some studies, the average life expectancy in Western Europe at birth during the period from 1960 to 1990 increased by approximately 7 years rising to 74 years, and some projections suggest that generations born today will live for about 90 years (Eurostat, 2017)[2]. In addition, population aging is connected to a decline in fertility rate. In the 1950s, women in Western European countries had on average three children, whereas in the last two decades the fertility rate was halved (in Germany from 2.50 to 1.31, in the UK from 2.86 to 1.64, in Italy from 2.66 to 1.23) (Eurostat, 2017).

In accordance with these data, the crisis of public pension systems is caused by the negative relationship between working and retirement population, which is one of the fundamental problems for the sustainability of these systems. Due to the extreme importance of this issue, Graph 1 shows age indexes in Europe and their impact on pension funds.

Graph 1 Age dependency index (pensioners aged 60 and over / labour force between 20 and 59 years) in Europe in the period from 1990 to 2030



	1990	2000	2010	2020	2030
East Europe	30	29	34	45	45
Western Europe	35	37	43	60	68
South Europe	32	34	39	55	67
North Europe	39	37	38	45	59

Source: Puljiz (2005), authors

Based on the dependency index and its projections by 2030, there is an increasingly unfavourable relationship between pensioners and the employed in Western Europe, but also elsewhere in Europe, which creates additional pressure on the contributions collected in these pension funds. In addition, in all developed countries, an increase in population over the age of 80 requires additional costs due to their health problems, and thus increases public pension costs. Demographic changes are not the only cause of the pension system crisis. It is also driven by unemployment and changes in the labour market structure. Due to prolonged education, young people are later recruited, and in some periods, there was a trend of early retirement. Based on these phenomena, the labour market has expanded into forms of employment that are not favourable for the financing of social security funds, namely

pension funds, and lead them into a crisis. Another factor in the pension system crisis is undoubtedly the process of globalization. "Contributions paid by employers increase the cost of labour force, reduce profit and thus employers' efforts to reduce them" (Puljiz, 2008). Therefore, the most commonly used approach is capitalization of pensions, where the pension burden is transferred to insured persons. Since public pension systems generally face serious challenges, many countries have been reforming them with the aim of reducing public spending on pensions and developing other forms of pension schemes, mostly capitalization of pensions.

3. The structure of pension systems in certain European countries

A key advocate of pension reforms in the framework of pension capitalization was the World Bank, which offered a new model of multi-pillar pension system to the European countries. This model implied a gradual reduction of traditional pensions and the obligatory capitalization within the second pillar, which is formed by a portion of the contribution of the insured, while the third pension pillar represents voluntary pension savings. Consequently, the European Union is trying to build a European pension model that should serve as a compass for pension reforms of other countries, especially those that are striving to become its new members. Based on the above, the European social model is based on the 1989 Community Charter of Fundamental Social Rights of Workers and the Charter of Fundamental Rights of the European Union from 2007, which became part of the Lisbon Treaty. These documents establish the obligations of EU member states, and the European social model has four subforms: Nordic, Anglo-Saxon, Corporate Western European and South European. The common features of these forms are as follows:

1) on the first level, public and obligatory pension insurance, which ensures and achieves solidarity within national frameworks and which guarantees a certain level of benefits in accordance with internationally accepted standards,
2) on the second level, supplementary pension insurance, as a rule related to professional associations,
3) on the third level, voluntary and individual insurance, left to the choice of each individual (Rismondo, 2010).

Based on this model, within the first pillar of pension insurance in the European Union, state pensions are funded from current revenues based on contributions from salaries of employees and additionally from the state budget. On the other hand, the second and third pillars are based on the investments of the collected funds and their capitalization. However, the prevalence of certain pillars of pension insurance is not the same in all countries.

3.1 Harmonization of pension systems in selected European countries

The first pillar of pension insurance in the European Union is based on obligatory state insurance, in which the funding is based on the payment of obligatory contributions from the payroll of employees. Pensions to current pensioners are paid from these funds (the so-called PAYG system). Pension payments are guaranteed by the state, and the management of these funds is entrusted to a body governed by public law (the pension authority of a particular country). The regulation of this pillar was established by the Directive 79/7/EEC. The subject matter of this Directive is the development of public social security systems, including public pension insurance. In the part related to pension insurance, this equality is ensured by the principle of non-discrimination based on sex, in particular: 1) the scope of the schemes and the conditions of access thereto; 2) the obligation to contribute and the calculation of contributions; 3) the calculation of benefits; 4) provisions on the possibility to determine different age limits for men and women within their pension rights (Directive 79/7/EEC, Council of the European Communities, 1978).[3] In accordance with the above mentioned, in Europe it is possible to distinguish four broad groups of pension systems of the first pillar:

1) Scandinavian countries (Sweden, Finland, Denmark and Norway) where there are generally relatively low pensions for all residents, but there is a strict link between the contributions paid and the amount of pensions that are financed from taxes, which guarantee existential security for all citizens,
2) Continental Europe (Germany, France, Austria, Belgium, the Netherlands, Switzerland and Luxembourg) where state pension systems are significant in terms of high contributions and high income levels,

3) South European countries (Italy, Greece, Spain and Portugal) have systems similar to those in continental Europe. The retirement age, which was often low, is increasing, and the criteria for obtaining retirement rights are more demanding,
4) Anglo-Saxon countries (Great Britain and Ireland) are characterized by equal, low general pensions, which are by no means sufficient for all retirees. Therefore, in these countries, pensioners who are not covered by the second pillar are in a particularly vulnerable position (Bijelić, 2005).

Since the ratio of the number of insured persons and pension beneficiaries in the first pillar is an important parameter for its sustainability, Table 2 shows this ratio in some European countries.

Table 2 Number of insured persons and pension beneficiaries

Country	Insured persons	Pension beneficiaries	Ratio	Rank
Croatia	1,507,243	1,239,963	1.22	5
Sweden	5,441,062	2,887,637	1.88	3
Switzerland	5,296,995	2,639,879	2.01	2
Greece	5,331,101	2,777,148	1.92	4
Ireland	**2,564,902**	**1,079,885**	**2.38**	**1**

Source: Pensions Europe (2018)[4], "Pension Funds Statistics and Trends 2018", authors

The data in Table 2 show that all the observed countries have a disadvantageous ratio of the number of insured persons and pension beneficiaries. The most favorable ratio can be seen in Ireland (2.38 employees per one pensioner). The reasons for this is increased unemployment in some countries (Croatia, Greece), while in other countries the reasons are mostly demographic factors (increasing numbers of older people versus working-age population). In accordance with this trend, pension insurance in the first pillar is unsustainable in almost all countries, which makes it necessary to use capitalized savings as a social security factor. In addition, according to the basic characteristics of the European social model, it is also necessary to stimulate the capitalization of pensions. According to the data in Table 3, it is possible to notice different trends in the distribution of pension revenues as one of the important parameters of the success of the pension system in certain European countries.

Table 3 Revenues from pension contributions in certain European countries (in %)

Country	First pension pillar	Rank	Second pension pillar	Rank	Third pension pillar	Rank
Croatia	79%	2	13%	4	8%	3
Sweden	51%	3	33%	3	16%	2
Switzerland	18%	5	**53%**	**1**	**29%**	**1**
Greece	**81%**	**1**	13%	4	6%	4
Ireland	24%	4	47%	2	**29%**	**1**

Source: Insurance Europe (2018)[5], "European Insurance - Key Facts", authors

The largest income in the first pillar of pension insurance, according to their rank, is in Greece, followed by Croatia and Sweden. These countries achieve less income within the second and third pillars of pension insurance, which indicates that their beneficiaries depend heavily on intergenerational solidarity, which is certainly a problem of sustainability of the entire system. In addition, substantial

investments in the second and third pillar of pension insurance can be observed in Switzerland and Ireland, while investment in the first pillar in these countries is considerably smaller. This distribution of income depends on the very structure of the pension insurance of a country, on its reforms, on demographic trends and on the historical tradition of a particular area of Europe. Based on the data in the table it is possible to notice how vastly different these countries are in the distribution of revenues within a particular pillar, which significantly influences further development of the European social model and its basic characteristics that promote capitalization of pensions.

3.2 The importance of capitalized savings as a factor of social security of the insured

The second-pillar pension systems in the European Union are institutions whose primary goal is to address the problems that arise in the systems of government pensions (the first pillar) caused by demographic and economic fluctuations. Such systems can be established as voluntary or obligatory depending on the organizational form and degree of coverage of employees in a particular Union member state. The second pillar is governed by the Directive 86/378/EEC; it applies to all forms of supplementary (occupational) pension insurance, including capitalized pension insurance. It regulates: 1) the principle of gender equality; 2) the implementation of occupational retirement schemes and conditions of access to them; 3) fixing the retirement age; 4) the compulsory or optional nature of participation in an occupational scheme; 5) the obligation to contribute and the calculation of contributions; 6) the conditions for the reimbursement of contributions at the exit from the scheme (Directive 86/378/EEC, Council of the European Communities, 1986).[6] The main features of the second pillar of pension insurance in the European Union under the Directive are mainly related to the existence of employment relations or pursuing a certain occupation (so-called employees' or vocational insurance or occupational insurance). "Access to these pension systems is provided to employees in certain companies, industries or sectors and is based on agreements between social partners or on compliance with standards applicable in a particular field of activity" (Bijelić, 2005). The second pillar pension systems are managed by private institutions, and unlike the first pillar, the state does not guarantee their payments. Contributions are proportionate to a person's income and paid in equal amounts by employers and employees. Financing of these systems is mainly carried out within pension funds, so that the current revenue coming from contributions is invested to pay off the future, but not the current commitments to retirees. Within the framework of the second pillar of pension insurance, it is possible to operate a system with defined contributions and a system with predetermined benefits. In a system with defined contributions, benefits depend solely on the profitability of the total capital investment. By contrast, pension systems with predetermined benefits show traces of solidarity, because the employer guarantees an employee to receive a certain amount of pension depending on their salary at the time of retirement.

Based on the main features of the second pillar of pension insurance in the Union, the following parameters are analyzed as factors of the system's performance (characteristics of the second pillar, the amount of pensions, pension fund assets and the investment of the pension funds' portfolios) in some European countries. In addition, we compared the performance of pension systems in the countries that apply the Directives in accordance with the European social model with the countries that do not consistently do so. Table 4 shows the characteristics of the second pillar of pension insurance in some European countries.

Table 4 Characteristics of the second pillar of pension insurance

Country	Obligatory pension funds	Voluntary pension funds	With investment of capital
Croatia	X		Individual capitalized savings
Sweden		X	X
Switzerland	X		X
Greece		X	X
Ireland		X	X

Source: Pensions Europe (2018), "Pension Funds Statistics and Trends 2018", authors

In the observed European countries there are different characteristics in the second pillar of pension insurance based on additional (professional/occupational) insurance. However, in most of them, the schemes are managed by pension funds and are mainly voluntary, which indicates that capitalized savings in these countries are a substantial part of social security for the beneficiaries. The differences are mainly due to the ratio of insured persons in the total number of employees in private sectors. However, in Croatia there are significant deviations in the characteristics of the second pillar compared to other observed countries. The pension system of Croatia has three pillars; the second pillar is compulsory and contributions paid into personal accounts are capitalized. In contrast, elsewhere in Europe the second pillar is mostly voluntary and based on occupational insurance and certain professional elements. Such inconsistency certainly affects the importance of capitalized savings as a factor of social security of insured persons in Croatia compared to other countries. Table 5 shows the average pension in some European countries.

Table 5 Average pension in the observed European countries (in €)

Country	2015			2016			2017		
	in €	**in %**	**Rank**	**in €**	**in %**	**Rank**	**in €**	**in %**	**Rank**
Croatia	315	4.73	5	318	4.76	5	324	4.81	5
Sweden	1,951	29.32	2	1,971	29.48	2	1,964	29.18	2
Switzerland	**2,866**	**43.07**	**1**	**2,849**	**42.62**	**1**	**2,861**	**42.51**	**1**
Greece	459	6.90	4	478	7.15	4	498	7.40	4
Ireland	1,063	15.98	3	1,069	15.99	3	1,083	16.09	3
Total	6,654	100	-	6,685	100	-	6,730	100	-

Source: Pensions Europe (2018), "Pension Funds Statistics and Trends 2018", authors

As can be seen in Table 5, pensioners in Switzerland and Sweden have the highest pension based on the assigned rank, followed by pensioners in Ireland. Accordingly, it is possible to conclude that those countries that apply the Directives in accordance with the European social model, in relation to those countries that do not do so consistently, have higher pensions and a more efficient pension system. In Switzerland, Sweden and Ireland, in relation to Croatia and Greece, there is more emphasis on capitalization of pensions and their distribution of revenues within the three pillars of pension insurance complies with the European social model. Based on this their average pension is higher than in the other observed countries. Of course, the economic situation in these countries plays a significant role (higher employment, higher gross domestic product, etc.), but the application of the Directive in line with the European social model also makes it possible to achieve sustainability of the pension system. Based on the above mentioned, Table 6 shows assets of pension funds from the observed countries.

Table 6 Assets of pension funds in the period from 2015 to 2017 (in billions of €)

Country	2015			2016			2017		
	In billions of €	**in %**	**Rank**	**In billions of €**	**in %**	**Rank**	**In billions of €**	**in %**	**Rank**
Croatia	10	1.80	5	11	2.20	5	12	1.42	5
Sweden	37	6.67	2	37	7.39	2	37	4.37	2
Switzerland	**468**	**84.32**	**1**	**407**	**81.24**	**1**	**749**	**88.43**	**1**
Greece	19	3.42	4	19	3.79	4	21	2.48	4
Ireland	21	3.78	3	27	5.39	3	28	3.31	3
Total	555	100	-	501	100	-	847	100	-

Source: Pensions Europe (2018), "Pension Funds Statistics and Trends 2018", authors

The total assets of the second pillar of pension funds according to the assigned rank are highest in Switzerland within the observed period. This is followed by Sweden and Ireland, which again indicates that in these countries capitalized savings represent importance significant part of social security for insured persons. The smallest assets of pension funds are recorded in Croatia and Greece, since the pension systems of these countries are predominantly based on intergenerational solidarity. The observed European countries have different forms of investment in the capital market, depending also on the fund's assets, but the level of these investments is certainly in line with the regulations and limitations that are in force in each country (Table 7).

Table 7 Investment of second pillar pension funds' portfolio (in %)

Country	2015 (% / Rank)						2016 (% / Rank)						2017 (% / Rank)					
	In shares of EU		In shares outside the EU		In government bonds of the EU		In shares of EU		In shares outside the EU		In government bonds of the EU		In shares of EU		In shares outside the EU		In government bonds of the EU	
Croatia	22	4	-	-	**78**	**1**	25	4	-	-	**75**	**1**	23	3	-	-	77	**1**
Sweden	71	2	**15**	**1**	14	4	73	3	**15**	**1**	12	4	73	2	**15**	**1**	12	4
Switzerland	70	3	11	2	19	3	74	2	12	3	14	3	73	2	13	3	14	3
Greece	18	5	**15**	**1**	67	2	20	5	13	2	67	2	21	4	14	2	65	2
Ireland	**79**	**1**	10	3	11	5	**80**	**1**	10	4	10	5	**82**	**1**	9	4	9	5

Source: Pensions Europe (2018), "Pension Funds Statistics and Trends 2018", authors

There are certain differences in the investments of the second pillar pension funds' portfolio in the observed European countries. Ireland, Sweden and Switzerland are investing mostly in Union stocks, and therefore expect higher returns from such investments, while Croatia and Greece are more inclined to invest in government bonds. In accordance with this data, it is possible to notice that the importance of capitalized savings is not the same in all the observed countries, and neither is the success of their pension systems.

The characteristics of the third pillar of pension insurance in accordance with the European social model are similar to those in the second pillar. The difference is that the membership in the third pillar is not related to the status of employment or affiliation to a particular occupation, but to an individual conclusion of a contract with a provider of such financial products, mostly life insurance companies. "Contributions or payments (insurance premiums) of an individual are accumulated and invested, so that the funds collected, including all the interest on the invested capital, are later used to pay out retirement benefits to the insured. The advantages of life insurance are independence from the place of employment and the increasing opportunities of citizens of the European Union to choose insurers from any member state" (Bijelić, 2005). Life insurance has a long tradition in the market economies, and joining a third pillar scheme is particularly significant in the old age as it allows the elderly to achieve greater social and economic security, thus confirming the extraordinary importance of capitalized savings within this system.

4. Conclusion

Maintaining the stability of the pension system is one of the fundamental issues, both for Croatia and for other European countries, and harmonization between countries in accordance with the European social model is of particular importance. The conducted analysis has highlighted certain differences in the pension insurance systems of the observed European countries. In addition to the unequal distribution of revenue from pension contributions within the three pillars of insurance, there are discrepancies in the characteristics of the second pillar of pension insurance, in average pensions, pension funds' assets and their portfolios. The biggest deviations from the European social model can be observed in Croatia and Greece. For

example, in Croatia, the second pillar is compulsory and contributions paid into personal accounts of the insured are capitalized, which is different from other European countries where the second pillar is mostly voluntary and based on occupational insurance and certain professional elements. In addition, the importance of capitalized savings as a significant contributing factor to the social security of the insured is lower in Croatia and Greece than in the other observed countries (Sweden, Switzerland and Ireland). The analysis also confirms the hypothesis that pension systems in those countries that apply the Directives in accordance with the European social model are more successful compared to those countries that do not. Therefore, Croatia and Greece will have to undertake a series of procedures related to the alignment of their pension systems with the European social model in order to promote their harmonization and sustainability. In addition, stimulating capitalized savings will be of particular importance in these countries, since social security of the insured and the sustainability of the entire pension system will increasingly depend on it.

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Kapitalizirana štednja kao čimbenik socijalne sigurnosti osiguranika u mirovinskim sustavima europskih zemalja

Sažetak

Mirovinsko osiguranje vrlo je važno za socijalnu sigurnost svakog pojedinca, odnosno osiguranika ovoga sustava. Mirovinski sustavi dio su sustava u okviru socijalne politike društva, koja predstavlja organiziranu djelatnost države i drugih društvenih čimbenika te utječe na održivi razvoj društva. Socijalna politika se bavi uzrocima, oblicima i posljedicama redistribucije nacionalnog dohotka, a cilj joj je prevladavanje socijalnih rizika, pomoć siromašnima i isključenim pojedincima te unapređivanje socijalne dobrobiti stanovništva. Sukladno definiciji socijalne politike, mirovinski sustav izuzetno je važan njezin dio, a predstavlja skup pravnih normi, financijskih i institucionalnih aranžmana kojima se regulira osiguranje od rizika starosti i invalidnosti. Budući se mirovinskim sustavom osiguravaju najznačajniji socijalni rizici koji se mogu dogoditi svima (npr. rizik starosti, invalidnosti i sl.) važnost njegove stabilnost od velikog je značaja za stanovništvo pojedine zemlje. Cilj ovoga rada je analiza glavnih značajki mirovinskih sustava u pojedinim europskim zemljama te utvrđivanje ključnih parametara koji određuju daljnji razvoj ovih sustava. Pri tome, autori komparativnom analizom istražuju usklađenost ovih sustava s europskim socijalnim modelom te utvrđuju utjecaj kapitalizirane štednje kao važnog čimbenika socijalne sigurnosti osiguranika.

Ključne riječi: mirovinski sustav, socijalna politika, europski socijalni model, kapitalizirana štednja, usklađenost