Tatjana Rakonjac-Antić[1], Vesna Rajić[2], Dragan Lončar[3]
[1,2,3] University in Belgrade, Faculty of Economics

The Role of Pension Schemes in the Development of Pension Insurance Market in Serbia

UDC: 368:339.13(497.11) ; 336.1.07:368.914
DOI: 10.7595/management.fon.2013.0011

Voluntary pension insurance is only beginning to develop in Serbia, and is an opportunity for additional pension remuneration (pension) for the largest number of participants. The highest amounts of contributions so farhave been provided through pension schemes. The incentive for the organizers and the participants in pension schemes for a more significant share in the voluntary pension insurance is the favourable tax treatment of the contributions up to a certain amount, which are permanently indexed. The aim of this paper is in that, based on the analysis of the functioning of pension schemes, it identifies the problems and proposes solutions for their more intensive use in order to strengthen the voluntary pension system in Serbia. In addition to the descriptions of particular facts, the paper will also present theoretical and practical views on pension schemes. Through an overview of the history and data comparison, the paper will analyse the share of pension schemes since the time voluntary pension insurance was first implemented to the latest report on the development of this type of pension insurance presented by the supervisory authority, the National Bank of Serbia. To predict the number of the insured and the number of contracts in the voluntary pension insurance, we will use appropriate statistical methods. The paper will provide recommendations for more intensive use of pension schemes, which will be a contribution to a better structuring in terms of forms of contributions, in order to develop the voluntary pension insurance in Serbia. The parties interested in these improvements are active insurants, insurance beneficiaries, voluntary pension funds and pension schemes management companies, the supervisory authority, etc.

Keywords: voluntary pension insurance, pension schemes, contributions, tax relief.

1. Introduction

The primary goal of a well-defined voluntary pension insurance system is to increase the amount of pension remunerations (pensions) to the participants, and in Serbia it supplements the compulsory pension insurance system. Payment of voluntary pension insurance contributions may be made individually, through employers, who are contributions payers for their employees, and through pension schemes. A pension scheme is a contract in favour of third parties between employers, employer associations, trade unions or professional associations and a management company, whereby the employer undertakes to make pension contribution payments for the account of its employees, or trade union members (i.e., scheme member), whereas the management company undertakes to invest the funds pooled and enable scheme members to withdraw and use such pooled funds (Law on Voluntary Pension Funds and Pension Schemes, 85/2005 and 31/2011). In Serbia, the highest amounts of contributions in the voluntary pension funds are accumulated through pension schemes. The aim of this paper is to, based on the analysis of the functioning of pension schemes, indicate the potential for greater share of pension schemes, which may result in a more rapid development of the voluntary pension system in Serbia.

2. Basic elements and entities in the voluntary pension insurance system

The adoption of the Law on Voluntary Pension Funds and Pension Schemes, in late 2005 (with the enforcement of certain provisions as of the March/April 2006) has officially launched the implementation of the voluntary pension system in Serbia (Rakonjac-Antic, 2012). Several years before the adoption of this law, voluntary pension insurance (in the forms of annuity based insurance and not fund based insurance) was offered by a small number of insurers in our insurance market (these insurance companies operated in accordance with the provisions of the Law on Insurance).

Voluntary pension insurance should accumulate a high amount of funds, which would increase the level of national savings, create an opportunity for more investment, and indirectly for job creation etc., which is important both for the beneficiaries and for the national economy (Rakonjac-Antic & Rajic, 2010). "The Law on Voluntary Pension Funds and Pension Schemes regulates: 1 organization and management of voluntary pension funds, 2 establishment, activity and operations of voluntary pension fund management companies, 3 activities and responsibilities of custody banks, within the meaning of this Law, 4 competence of the NMS (National Bank of Serbia) in the supervision of operation of voluntary pension funds and other issues of importance to this area (Law on Voluntary Pension Funds and Pension Schemes, 85/2005 and 31/2011)." This Law provides the framework for the establishment and conduct of the basic players in voluntary pension insurance, namely: voluntary pension funds, voluntary pension fund management companies, custody banks, monitoring and control agencies, etc. A voluntary pension fund is organised for the purpose of pooling funds from the payment of pension contributions by contributors, and investing such funds with the aim of increasing the value of fund assets. Assets of a voluntary pension fund are separate from the assets of a management company and are maintained in an account with a custody bank.

A management company organises and manages voluntary pension funds and pension schemes. In this respect, portfolio managers play an important role, which is to deal with the issues of investing the fund assets. A pension scheme is a contract in favour of third parties between employers, employer associations, professional associations or trade unions and a management company, whereby the employer undertakes to make pension contribution payments for the account of its employees, whereas the management company undertakes to invest the funds pooled (Law on Voluntary Pension Funds and Pension Schemes, 85/2005 and 31/2011). As previously stated, a custody bank maintains the account of a voluntary pension fund and performs activities on behalf of the voluntary pension fund and acts only on the orders of the management company, which are in accordance with the law and the fund's prospectus. It is stipulated that the prospectus must contain all information based on which interested parties can get a clear picture of the fund and make an informed decision regarding participation in the fund.

The net asset value of a pension fund, which is the value of assets less the value of liabilities, is constantly monitored. Contributions are converted into investment units on the date of payment. An investment unit shows trends in investment returns, i.e. results of investment by the management company. The voluntary pension fund management company collects two basic types of fees from the members: fees charged at the time of payment of pension contributions (up to 3% of the value of the payments made) and fund management fee (up to 2% of net assets per annum). The work of a voluntary pension fund management company is monitored by the National Bank of Serbia. Participants in the voluntary pension insurance have their own individual pension accounts where payments of contributions are recorded, and such payments are to be invested and the gains are attributed periodically (Mackenzie, Gerson & Cuevas, 1997). A participant chooses the amount of contribution s/he wants to pay and can check the balance on his/her account at all times, and at least once a year, s/he receives a written report on the amount of accumulated funds in his/her pension account. If employers pay contribution for their employees, they may do so by paying the same amount for all employees or proportional to their individual earnings (Rejtman, 1992).

Amendments to the Law on Voluntary Pension Funds and Pension Schemes were adopted in May 2011 with the view of securing a higher level of protection for the members of voluntary pension funds, as well as improving business conditions for voluntary pension fund management companies (www.nbs.rs). The minimum age limit for the withdrawal of funds in the form of pension remuneration (pension) has been increased from 53, which had been the limit until then, to 58 years of age. One-time withdrawal is allowed for up to 30% of the accumulated amount of funds (these amendments do not apply to the existing participants in the voluntary pension insurance). It is allowed to deposit a higher amount of assets in banks, as well as to invest in short-term securities issued by or guaranteed by banks and so on.

Table 1: Development factors and aims of the introduction of the voluntary pension insurance

Factors affecting the development of voluntary pension insurance	Aims of the introduction of voluntary pension insurance
Level of participants' salaries	Realizing higher pension remunerations
Safety and transparency of the system	Increase in total national savings
Financial market development	Investment (economic development)
Tax relief	Job creation
Education of the population	Impact on the financial markets development
Legislation etc.	Greater individual responsibility etc.

Voluntary pension insurance system should be designed to foster greater security of individuals and their family members in old age. The primary goal of a well-defined system of voluntary pension insurance, as already mentioned in the Introduction (see Table 1), is the increase in the amount of a pension remunerations for the participants, and in our system, it is a supplement to the compulsory pension insurance.

3. An overview of the conditions in Serbian voluntary pension insurance market

According to the NBS report (report for the third quarter of 2012, www.nbs.rs), there are six voluntary pension fund management companies in operating in Serbian market of voluntary pension insurance (Delta Generali; Raiffeisen Future; DDOR-Garant, Dunav, Triglav, Societe Generale penzije). Since 14 December 2012, the number of voluntary pension funds management companies has decreased to five companies (DDOR-Garant took over the management of the Triglav-penzija fund).

In comparison to 2008 (9 companies) and 2009 (9 companies), there has been a decrease in the number of voluntary pension funds management companies (Kocovic, Rakonjac-Antic & Jovovic, 2011). Market concentration is relatively high (four funds occupy almost 96% of the voluntary pension insurance market, and the largest fund has a 41% share in the net assets of the sector).

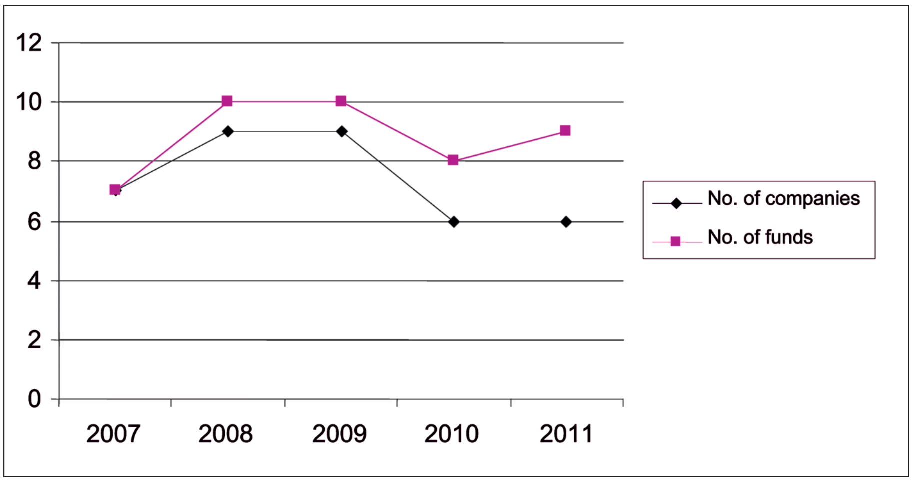

Figure 1: The number of voluntary pension fund management companies and the number of voluntary pension funds

Source: NBS reports for Q4 of 2007, 2008, 2009, 2010, and 2011 and the number of companies and funds existing as of 14 December 2012.

These companies have entrusted their custody operations to three banks (Unicredit Bank Serbia, Societe Generale Bank Serbia, Komercijalna banka). Net assets of voluntary pension funds in the third quarter of 2012 amounted to USD 14.95 billion (report for the third quarter of 2012). In this period, there were about 176,000 insurants, and about 237,000 membership contracts (the number of contracts is larger than the number of the insured because the insured have two or more membership contracts, usually in different voluntary pension fund management companies). About 60% of insurants are men and 40% are women. In mid February 2013, the value of an investment unit ranged from RSD1,179 up to about RSD1,860.

In the third quarter of 2012, total number of employees in management companies was 158, which represents a significant decrease compared to 2008 (when the number of employees, looking at the previous four years, was the highest) when there were 218 employees in the sector (see Kocovic, Rakonjac-Antic & Jovovic, 2011).

4. Preconditions for the development of the voluntary pension system in Serbia

The main factor affecting the development of the voluntary pension insurance system in our country is the market potential for participation. If we observe the employed as the primary target group for this system of insurance, we conclude that there are somewhat more than 2,000,000 employed people, and somewhat more than 237,000 contracts on voluntary pension insurance have been concluded so far. The market clearly has potential if we take into account the number of potential participants. However, the limiting factor is low purchasing power of the employed. Namely, average income barely covers the cost of the minimum consumer basket, so that there is very little room for meeting other needs, including the needs to conclude a contract on voluntary pension insurance. At the present stage of our country's development, the room for the development of voluntary pension insurance should be sought in the so-called group insurance, i.e. insurance sponsored by employers, through increased tax relief (see Table 2) for participation in the voluntary pension insurance system. Most payments by employers usually amounts up to the tax-exempt amount of RSD5,214 (from 02/01/2013).

This should be a clear signal to legislators that it is necessary to encourage this form of insurance, or savings, through increased tax relief: either by increasing this limit to above RSD5,214, or to define it as a percentage from earnings, for example.

Table 2: Tax relief in the voluntary pension insurance system (2007-2013)

2007	2008	2009	2010	2011	2012	2013
contributions up to RSD 3,000	contributions up to RSD 3,303	contributions up to RSD 3,528	contributions up to RSD 3,894	contributions up to RSD 4,343	contributions up to RSD 4,647	contributions up to RSD 5,214

Also, as a form of incentives for this type of savings and security for old age, the state could make a decision to pay additional funds to a participant's deposit of, for example 0.10 to 0.25 units from one monetary unit etc. In Croatia, for example, there are tax reliefs for employers who pay premiums on behalf of third parties. According to Article 10 of the Law on Income Tax (NN 117/04, 73/08, 80/10, 114/11, 144/12), "income tax is not paid on voluntary pension insurance (pension) premiums which the employer pays for the benefit of his employed, with his/her consent, to the amount of HRK500 per month, HRK 6000 annually (this right can also be exercised by self-employed taxpayers).

Apart from the tax relief for the employers, the state also encourages voluntary pension savings, with 15%, i.e. HRK750 for annual premium payment of HRK5,000.

In order for a voluntary pension insurance system to develop continuously, it is necessary that individuals are aware of the necessity to have such additional forms of pension insurance, so that they decide to set aside funds for this type of savings from the low average wages that they have. A very important task is to educate the population, i.e. to present relevant features of these services so that they are familiar with all aspects of this insurance system. For several years now, the citizens of our country have been receiving clear signals that it is necessary that they have additional savings for a more secure future. In the future period, they will have to chose one of the following forms of saving for old age, either through traditional banking products, or through life insurance products, using the products of voluntary pension insurance, etc. With a detailed explanation of the advantages and disadvantages of all of the above forms of savings, it is certain that the citizens of our country will also be attracted to the forms of saving through the voluntary pension insurance system. However, the key elements of the system that must be enforced are: transparency and security of the system.

Transparency of the system has largely been achieved through the possibility that each participant should have their own individual pension account that they can monitor on a daily basis, together with the changes in the investment unit. However, much more has to be done in order to clarify the safety and security of the voluntary pension insurance. There is a large number of control mechanisms: the assets of the fund are separate from the assets of the company, the prospectus is approved by the supervisory authority, the placement of assets is controlled, etc., but the risk of participation is on the individual. Our population has been financially exhausted in the past few decades, and it is difficult to restore the lost confidence in the financial sector. By stressing the safety of the voluntary pension insurance with a reference to the potential risks, the authorities, (first of all NBS) may contribute to the development of this system. The development of financial markets (primary and secondary) is one of the prerequisites for the development of the voluntary pension insurance. For the time being, participants in the financial market place most of their assets into frozen foreign currency savings and lack investment opportunities in the domestic financial market.

5. Basic characteristics of pension schemes

According to the Law on Voluntary Pension Funds and Pension Schemes "a pension scheme can be organized by employers, employer associations, professional associations and trade unions (the organizers) for their employees only, i.e. members of the pension scheme. The Regulation on the conditions and procedures for organization and operation of pension scheme, Article 5, stipulates that a pension scheme is considered organized when: a) the organizer decides to organize a pension scheme (this decision is made by the management body of the pension scheme organizer), b) when the organizer, having selected a voluntary pension fund, concludes a contract with the management company, and c) when the Ministry in charge of labour and pension insurance issues an approval of the pension scheme contract.

The organizer of the pension scheme has an obligation to provide its members (e.g. employees) with equal conditions for participation in a pension scheme. He can define another pension scheme, for other members (group of employees), provided that he has already organized a pension scheme for all the members (employees). A pension scheme is part of a voluntary pension fund managed by the management company with which the organiser concluded a pension scheme contract. The organizer has a duty to inform each member (employee) on the terms and conditions of the pension scheme in writing.

Pension schemes have characteristic "defined-contribution schemes" that, when defined, do not show the amount of pension remuneration, but specify the amount of contributions to be paid into the pension fund by the organizer. Pension remuneration (pension) depends on how much money is accumulated at the time of realisation of the right to remuneration based on the pension contributions paid into the fund and the income from the investment of these funds. "Defined-contribution schemes" are popular with employers, and one of the main reasons is that most of the employer's liabilities cease after regular payment of contributions is made, i.e. as agreed in the contract. In the event of early retirement with "defined-contribution schemes", there is a prominent unpredictability and uncertainty about the level of future pension remunerations, because the amount of pension remunerations mostly depends on the long-term investments of the contribution assets. The pensioners are not sufficiently protected in case of early retirement (shorter investment period means lower pension remuneration). It is necessary to organise pension schemes that would function in the manner which would use maximum advantages and eliminate possible disadvantages of these schemes (Rakonjac-Antic, 2012).

The system of financing used with pension schemes is the "fully funded" system, which is in literature often referred to as a system of capitalized funds. As already mentioned above, the amount of a pension depends on contributions and the return on invested contribution funds, i.e. the capitalization rate (Rakonjac-Antic, 2012).

In this system of pension funding it is necessary to predict the amount of contributions correctly and invest them safely and profitably. That is why the application of "fully funded" pension system requires that financial markets are functioning, in which accumulated funds can be invested in different types of securities. These funds can be managed by managers, banks, insurance companies, investment companies, etc. Depending on the level of willingness to accept risk and defined end goals, investors make decisions about the types of securities in which to invest. If one accepts a lower risk, assets are invested in securities in which it is less evident, but there are also lower yields on these investments, as is the case with government bonds. However, if the investor should estimate that he should invest in riskier securities, but with higher income, the assets are invested mainly in stocks.

6. Pension schemes as the drivers for voluntary pension insurance

Since 2009 (see the information shown in Figure 2) payment of contributions to the voluntary pension system in Serbia have mostly been provided through the existence of pension schemes. These schemes have accumulated the highest amount of contributions. Encouraging the organization of pension schemes in the future could result in a more significant development of the voluntary pension insurance.

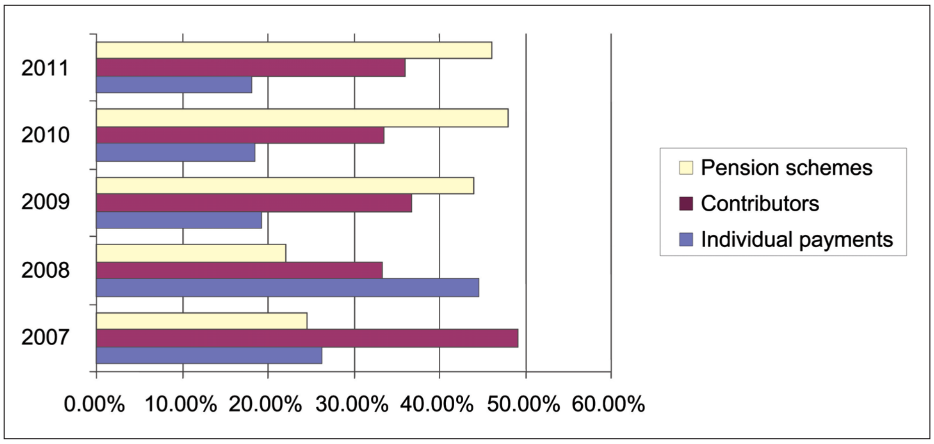

Figure 2: The volume and structure of contributions for voluntary pension insurance by year
Source: Reports on the voluntary pension funds sector in Serbia, NBS, 2007-2011.

The main incentive for the organizers of pension schemes for a more significant participation in the voluntary pension insurance is a favourable tax treatment of the contributions up to a specific, legally prescribed limit. Namely, payments of contributions by employers, as organizers of a pension scheme, constituting a part of voluntary pension funds and pension schemes, are exempt from income tax and mandatory social insurance for amounts of up to RSD5,214 per employee per month (see Table 2). Tax relief in the voluntary pension insurance system (2007-2013).

On the other hand, if employers pay contributions through a pension scheme (see Table 3) for a number of employees, when negotiating with voluntary pension funds management companies, they can negotiate lower fees for the payment of contributions for their employees.

Employers can use pension schemes as a form of indirect compensation (benefits) for their employees. It is an effective way to improve the financial position of the employees in the years when their earning potential is low (after termination of employment and retirement). In this way, each company that organized pension schemes for its employees motivates the employees to remain at their job positions, thus reducing labour turnover. This has a significant impact on increasing the productivity of labour and the increasing interest of the employees to achieve the company's long-term goals.

Table 3: The number of insured and the number of voluntary pension insurance contracts

Factors/Year	2007	2008	2009	2010	2011
Number of insured	-	155,954	165,244	166,780	174,868
Number of contracts	158,461	201,610	215,704	220,451	234,405
Pension schemes	24.5%	22.00%	44.00%	48.00%	46.00%

Source: Reports on the voluntary pension funds sector in Serbia, NBS, 2007-2011.

Based on the NBS report of the voluntary pension insurance sector 2007-2010, we can conclude that in the past few years, market concentration has been high, i.e. a small number of companies with a large number of employees have paid 30-40% of all the payments of contributions to voluntary pension funds (public enterprises etc.). It is obvious that at this stage of voluntary pension funds development, one of the most important factors is stimulating the development of a more significant share of pension schemes.

6.1. Prediction of the number of voluntary pension insurance contracts

This part of the paper analyses the data on the number of contracts during the period of Q2 2007 to Q2 2012 (the data obtained from the NBS report on the voluntary sector pension system in Serbia in the observed period, of 01/12/2012). We will focus on modelling the trends of the time series and predictions for the future period. Based on the time series data that we have, we have obtained the following estimated trend function that best fits the empirical data:

$$\hat{y}_t = 107548{,}671 + 23113{,}547t - 1624{,}682t^2 + 39{,}462t^3 \text{ , } t=1,...,21. \quad (1)$$

One of the measures which suggest the percentage of the explained variation, i.e. the percentage of the variation of the number of contracts explained by the estimated trend function is the coefficient of determination. Based on empirical data, we find that the coefficient of determination $R^2 = 0.984$, meaning that 98.4% of the variation of the number of contracts is explained by the estimated trend function.

Using the estimated trend function, we could predict the number of contracts in some future period. Figure 3 shows the number of contracts in the observed period, as well as the predicted values (i.e. extrapolated trend values) for the next five quarters. These predicted values represent only one mechanical projection of the observed phenomena, which shows that the number of contracts will not have a significant growth in the next period observed.

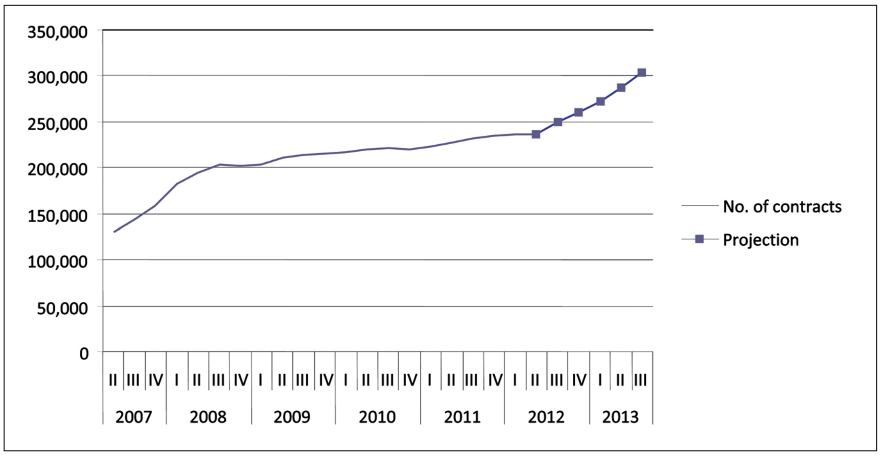

Figure 3: The number of contracts from Q2 2007 to Q2 2012 and the projection for the next five quarters

We will continue to analyse the available data on the number of insured (the data obtained from the NBS report on the voluntary sector pension system in Serbia) in the period from the Q2 2008 until Q2 2012. Based on time-series data, we obtain the following estimated trend function that best fits the empirical data:

$$\hat{y}_t = 145192{,}309 + 4896{,}478t - 378{,}521t^2 + 11{,}918t^3 \text{ , } t=1,...,17. \quad (2)$$

Based on empirical data, we calculate the coefficient of determination $R^2 = 0.967$, meaning that 96.7% of the variation in the number of insured is explained by the estimated trend function.

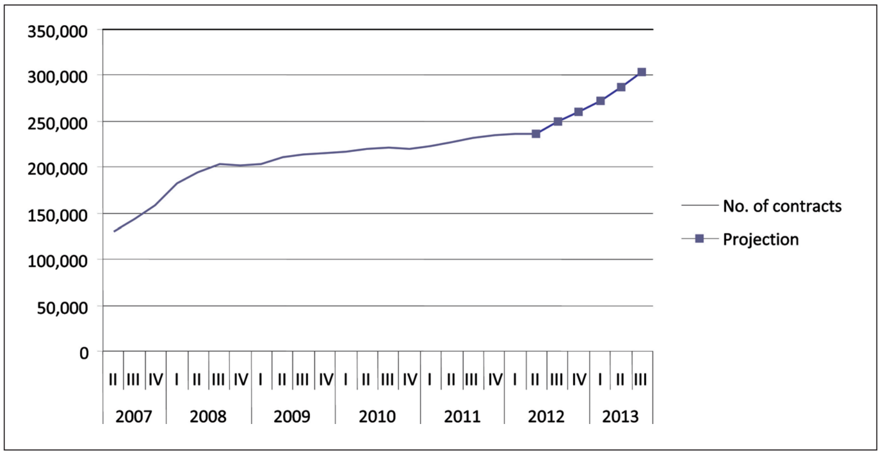

Figure 4: Trends in the number of contracts from Q2 2008 to Q2 2012 and the projection for the next five quarters

Figure 4 shows the number of insured in the observed period and predicted values for the next five quarters. Predicted values show that the number of insured will not rise significantly. Of course, the predicted values can be valid only under the assumption that the factors that affected the reporting period continued to act in much the same way without the involvement of new significant factors. Obviously, it is necessary to include new incentive factors in order to significantly increase the number of insurants and the number of contracts, most notably in the area of pension schemes as a precondition for the development of the voluntary pension system in Serbia.

7. Proposals for strengthening the position of pension schemes in the voluntary pension insurance system

Based on the above analysis of the voluntary pension system in Serbia in terms of the pension schemes share, we can present the following proposals that would increase the share of pension schemes in order to strengthen this type of pension insurance.

1) It is necessary to increase the amount of contribution that is subject to favourable tax treatment and is paid through pension schemes. How important tax incentives are is reflected in the fact that employers in our country usually pay contributions on behalf of their employees to the extent that is subject to tax relief. Therefore, it is necessary to determine the percentage of earnings of entities that companies will be allowed to pay as a contribution to a pension scheme, which will not be subject to income tax and social security contributions. This will allow for higher amount of accumulation from contributions as compared to current tax relief system which recognises absolute amount.

2) If it was possible for employees to borrow funds from the pension account contributions up to a certain amount in order to use them, for example, as a downpayment for a housing loan, for the education of their children and so on, this would significantly raise the standard of living of our people, and would be a stimulus for the participants and organizers to form a number of pension schemes. This borrowing would not contravene the basic objective of pension schemes, and that is the provision of adequate pension remunerations for the participants in the period when they retire. The members of the pension scheme that would borrow the money would have an obligation to periodically return portions of the funds borrowed plus interest, to their pension account, not later than 60 days before retirement. In this way, they would use the borrowed money to solve their existential problems, and would constantly increase the funds in their pension account. For such lending, it is necessary to increase the number of participants in the voluntary pension insurance system and to increase the total amount of funds accumulated from contributions. Based on the actuarial analysis, the pension scheme sponsor would define terms and conditions for borrowing the funds and define maximum amount of contributions that may be borrowed. It is easier to borrow from a pension account than to borrow money from banks, for example, because there is no need to meet credit standards.

Namely, the employee who has a pension account is automatically qualified to take the loan if borrowing of funds is allowed by the employer.

3) The experiences of the countries in the region indicate that state subsidy of, say, of 0.10 to 0.25 monetary units to one monetary unit of the contributions, would be a further stimulus for the establishment of intensive pension schemes.

4) Organizers of a pension scheme would have to have additional incentives for the establishment and organization of pension schemes (in addition to the exemption of income tax and social security contributions to the statutory amount of contributions), as, for example, even greater reduction of fees for payments of contributions for the benefit of employees and so on.

Conslusion

In addition to its primary objective, the achievement of an adequate amount of pension remuneration (pension), voluntary pension insurance system should also result in an increased level of national savings, and as these are long-term funds, they are expected to have a positive influence on the investments that will create new jobs. Furthermore, the system must serve as an incentive for the development of financial markets, strengthening the role of pension funds as institutional investors etc. The Law on Voluntary Pension Funds and Pension Schemes provides a framework for the establishment and conduct of basic elements and entities in voluntary pension insurance, namely: voluntary pension funds, pension schemes of voluntary pension fund management companies, custody banks, supervisory and control agencies, etc.

Most of the funds accumulated so far are those accumulated through pension schemes contributions. In the circumstances where average salaries are low, and when a large number of employees are receiving the minimum wage, mass involvement of employees in this type of insurance cannot be expected. However, with certain incentives, we are to expect a greater number of pension schemes organized by employers. It is too early to apply it, but it is necessary to make analyses of the possibilities for giving loans from individual pension accounts to insurance beneficiaries. This idea can be realized only in a situation where there is a greater number of participants and a greater quantum of accumulated funds.

REFERENCES

[1] Reports on the voluntary pension funds sector in Serbia, NBS, 2007-2011, and for Q3 2012.
[2] Kocovic J., Rakonjac-Antic T.& Jovovic M. (2011). Mogućnosti i ograničenja razvoja dobrovoljnog penzijskog osiguranja u Srbiji. Conference organized by the Association for Insurance Law and Social Security Law.
[3] Mackenzie G.A., Gerson P., Cuereas A. (1997, August). Regimes and Saving Pension. IMF Washington DC.
[4] Rulebook on the terms and conditions for organising and functioning of pension schemes.
[5] Rakonjac-Antic T. (2012). Penzijsko i zdravstveno osiguranje. Publishing centre, Faculty of Economics, Belgrade.
[6] Rakonjac-Antic T., Rajic V. (2010). Analiza tržišta penzijsko invalidskog osiguranja u Srbiji, International Symposium on insurance organized by the Faculty of Economics in Belgrade and the Serbian Actuarian Association.
[7] Рейтман Л. И. (1992). Страховое дело. Банковский и биржевой научно-консудътационый центр, Москва.
[8] Law on Voluntary Pension Funds and Pension Schemes, “Official Gazette of the Republic of Serbia 85/2005 and 31/2011”.
[9] www.annuity.com
[10] www.nbs.rs

Receieved: March 2013.
Accepted: June 2013.

About the Author

Tatjana Rakonjac-Antic
University in Belgrade, Faculty of Economics
rakonjac@ekof.bg.ac.rs

Tatjana Rakonjac-Antic was appointed associate professor in 2009. Her main fields of interest and research: insurance, pension and health insurance, actuarial mathematics. Courses taught of the undergraduate level: Insurance and Pension and Health Insurance. Member of: Scientific Association of Ecnonomists of Serbia and Actuarial Association of Serbia.

Vesna Rajic
University in Belgrade, Faculty of Economics
vesnac@ekof.bg.ac.rs

Associate Professor at the Faculty of Economics, University of Belgrade. She obtained her Master degree in 2002 at the Faculty of Mathematics in Belgrade, Department of Probability and Statistics. In 2007, she gained the title of a Doctor of statistical science at the Faculty of Economics, University of Belgrade. The current focus of her research is applied, computational and mathematical statistics, nonlinear analysis and actuarial mathematics.

Dragan Loncar
University in Belgrade, Faculty of Economics
loncar@ekof.bg.ac.rs

Associate Professor at the Faculty of Economics, University of Belgrade. He acquired a Master degree in 2003 at the University of Cambridge, UK. In 2007, he completed a PhD program at the Faculty of Economics, University of Belgrade. The current focus of his research is corporate finance, strategic management and risk management.