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IMPROVING OF EFFICIENCY THE FINANCIAL RESOURCES OF STATE PENSION INSURANCE

The aim of the article is to study the uses of financial resources of the state pension insurance in Ukraine and effort to enhance their effectiveness. Since the insurance fees as sources of Pension Fund of Ukraine replaced on tax incomes of the state budget, it's shows the imbalance of these financial resources. The article used methods of observation and measurement.

The article describes the strategic and tactical ways of improving the efficiency of the financial resources of the state pension.

The strategic way consists of development second level the pension system in Ukraine. It is shown on the size of future pensions affects only the rate of pension fees, investment income, term for savings pension fees and age for retirement. Determined that the rate of pension fees amounting to 10.5% of payroll and 6.5% on investment income during 35 years of work activity can achieve the highest amount of correlation between the level of payrolls of employees and their future pensions – 92.5 %.

The tactical way consists of viewing the source of financing current expenditure on maintenance of the PFU and introducing uniform requirements for formation it's financial reserve funds.

Key words: Pension Fund of Ukraine, the financial resources of the state pension insurance, the balance of the financial resources of the state pension insurance, pension fees rate, investment income, payroll (4 tab., 8 n. of lit.)

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ПІДВИЩЕННЯ ЕФЕКТИВНОСТІ ВИКОРИСТАННЯ ФІНАНСОВИХ РЕСУРСІВ ДЕРЖАВНОГО ПЕНСІЙНОГО СТРАХУВАННЯ

Метою написання статті є вивчення фінансових ресурсів державного пенсійного страхування в Україні та розробка пропрозицій для підвищення ефективності їх використання. Актуальність теми публікації зумовлена діючою практикою, коли страхові внески в якості джерела коштів Пенсійного фонду України замінені на податкові доходи державного бюджету, що показує дисбаланс фінансових ресурсів державного пенсійного страхування. У статті використані методи спостереження і вимірювання.

У статті розглянуті стратегічні і тактичні напрями підвищення ефективності фінансових ресурсів державної пенсії.

Стратегічний напрям полягає у розвитку другого рівня пенсійної системи в Україні. Показано, що на розмір майбутніх пенсій впливає тільки ставки пенсійних внесків, інвестиційного доходу, терміну заощадження пенсійних внесків і вік виходу на пенсію. Визначено, що ставка пенсійних внесків в розмірі 10,5% від фонду заробітної плати і 6,5% від інвестиційного доходу протягом 35 років трудової діяльності, дозволить досягти найбільштй рівень кореляції між рівнем заробітної плати працівників та їх майбутніх пенсій - 92,5%.

Тактичний напрям складається з перегляду джерела фінансування поточних витрат на утримання Пенсійного фонду України і введення єдиних вимог для формування коштів його фінансового резерву.

Ключові слова: державне пенсійне страхування, фінансові ресурси державного пенсійного страхування, збалансованість фінансових ресурсів державного пенсійного страхування, ставки пенсійних внесків, інвестиційний дохід, фонд оплати праці (4 Табл, 8 Літ.).

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ПОВЫШЕНИЕ ЭФФЕКТИВНОСТИ ИСПОЛЬЗОВАНИЯ ФИНАНСОВЫХ РЕСУРСОВ ГОСУДАРСТВЕННОГО ПЕНСИОННОГО СТРАХОВАНИЯ

Целью написания статьи является изучение финансовых ресурсов государственного пенсионного страхования в Украине и разработка предложений для повышения эффективности их использования. Актуальность темы публикации обусловлена действующей практикой, когда страховые взносы в качестве источника средств Пенсионного фонда Украины заменены на налоговые доходы государственного бюджета, что показывает дисбаланс финансовых ресурсов государственного пенсионного страхования. В статье использованы методы наблюдения и измерения.

В статье рассмотрены стратегические и тактические направления повышения эффективности финансовых ресурсов государственной пенсии.

Стратегическое направление заключается в развитии второго уровня пенсионной системы в Украине. Показано, что на размер будущих пенсий влияет только ставки пенсионных взносов, инвестиционного дохода, срока сбережения пенсионных взносов и возраст выхода на пенсию. Определено, что ставка пенсионных взносов в размере 10,5% от фонда заработной платы и 6,5% от инвестиционного дохода в течение 35 лет трудовой деятельности, позволит достичь самую большую степень корреляции между уровнем заработной платы работников и их будущих пенсий - 92,5%.

Тактическое направление состоит из пересмотра источников финансирования текущих расходов на содержание Пенсионного фонда Украины и введение единых требований для формирования средств его финансового резерва.

Ключевые слова: государственное пенсионное страхование, финансовые ресурсы государственного пенсионного страхования, сбалансированность финансовых ресурсов государственного пенсионного страхования, ставки пенсионных взносов, инвестиционный доход, фонд оплаты труда (4 Табл, 8 Лит.).

Introduction.

The Bismarck model as basis system social welfare of Ukraine population has been building since independence. At last 25 years, Ukraine began to actively use the pension insurance which filled don't formal (as it was in Soviet times) but the real financial sense.

The instrument forming of the state pension insurance must be insurance fees. But today more than half of revenues in the State Pension Fund of Ukraine are incomes from State Budget of Ukraine, which in turn are derived from tax revenues. Such transformations give rise to change relationships in public finances when growing needs of pensions are provided by the state budget. These processes modify the appointment state pension insurance, worsen balancing the financial resources of the Pension Fund of Ukraine and shows groundlessness and inefficiency of the financial base of state pension insurance in Ukraine. As the result, it is impossible to work out long-term economic politic in the pension system of Ukraine.

One of the *pressing questions* on the modern stage there is an increase the balancing of financial resources state pension insurance, forming of that must be base do only on the

internal sources (insurance fees). Using of financial resources should be correlated with the volume of their insurance fees of the Pension Fund of Ukraine.

Despite the academic interest to the sphere of state pension insurance, for example, B.Nadtochiy [1], M. Shavaryna, N. Shamanska [2]; modeling pension funds are considered S. Berezin [3], Y. Ovseyenko [4], V. Piskunenko [5], the question about insurance fees of the state pension insurance, improving the efficiency of their use is paid insufficient attention from economists.

The actuality of the article is stipulated important of above-mentioned problems, theoretical and practical value of their decision.

The aim article is research uses of financial resources the state pension insurance in Ukraine and finding ways to increase their effectiveness.

Overview of result

Since the deteriorating financial condition of state pension insurance was due to a low ratio of internal and external financial resources, reduce the load on the Pension Fund of Ukraine (e.g. the reduction of its costs) be considered as a possible reserve for an efficient use of its financial resources. Actually, this problem and designed to solve the pension reform in Ukraine on generally - the transition from solidarity to an individually-funded pension system, from one to three levels pension system.

The proposed economic-mathematical model of balancing financial resources of the state pension insurance will secure the pensions for future retirees within the planned second level new pension system of Ukraine. In other words, we are talking about a situation where pension fees (as part of a salary) are going to accumulate during the work activity period of employees and taking into account the value of accumulated pension and rate of return on its use. It should be noted that the articles of economists [3, p. 12; 36; 4, p. 18; 5, p. 15; 6, p. 64] considered modeling the budget Pension Fund of Ukraine (PFU) for using it in the conditions of existence of solidarity of generations in financing future pensions. They are not intended to define under which quantitative options PFU will function under conditions of only the cumulative basis.

We suggested that the base conditions of the economic-mathematical models are:

1) a time pensions three times smaller than the period of payment of her insurance fees: 35 years of insurance will relate to 15 years pensions;

2) PFU accumulated under conditions of pension fees only in the form of deductions from wages of workers without existing charges on a payroll from employers;

3) the variants of pension fee rates in the range of 7 (as provided for by the state) to 10.5% and variations in investment income accumulated during the work activity ranging from 3% to 6.5%.

The purpose of constructing the models determine:

a) conditions under which the amount accumulated fees PFUs should provide the greatest possible correlation between the percentage of received wages of the employed population and their pensions;

b) a communication between the share of payroll in GDP and the ratio between received wages of the employed population and its future pension.

The budget PFU accumulated over conventional conditions can be mathematically expressed by the formula (1). With the existence of return (%) on the income received fund for its resources in the first year of accumulating will be:

$$B_1 = B^*(1+r) \qquad (1)$$

where B_1 – financial resources of PFU for the first year;

B – financial resources of PFU provided that is investment income;

r – investment rates on the accumulated financial resources PFU.

Subject to the payment of pension fees and the immutability of other factors (the rates of investment income, pension contributions) the accumulated budget of the PFU ($Btotal$) equals:

$$Btotal = \sum_{i=1}^{T} B(1+r)^{T} \quad (2)$$

where T - the period of pension fees.

Using formula (2) and taking into account the baseline model in table 1 shows a possible correlation between the percentage obtained in future pension and wage fund in the economy. Noted that the pension contribution rate will vary between 7% and 10.5%, investment income - from 3% to 6.5% and the wage fund in the economy is taken at 2014-2015 years.

Table 1 - Relationship between future pensions and wages subject to the initial conditions of the model (option 1)

Payroll, billion UAH	636,7							
Pension fees rate, %	7,0	7,5	8,0	8,5	9,0	9,5	10,0	10,5
Investment income,%	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5
The budget of the Pension Fund Ukraine 35 years, billion UAH	2032,7	2413,3	2857,3	3375,4	3979,8	4685,1	5507,8	6467,4
Annual the Pension Fund of Ukraine	135,5	160,9	190,5	225,0	265,3	312,3	367,2	431,2
The ratio between pensions and wages,%	29,1	34,5	40,9	48,3	56,9	67,0	78,8	92,5

Based on the calculated data it can make such conclusions.

With the existence of the payroll fund in the economy 636.7 billion UAH (index 2014-2015 years), the rates of pension contributions of wages in PFU at 7% (which was to be introduced since 2016) and investment income on accumulated funds PFU of 3%, the annual budget accumulated PFU after 35 years period of insurance will be 2032.7 billion UAH.

With its use for 15 years, excluding investment income on the balance of unused amounts and incurred administrative and management costs fund, the annual cost of PFU will equal 135.5 billion UAH. However, the average pension will amount to 29.1% of payroll. The calculated data leads to the conclusion that the greatest correlation between the size of received pension and wages (92.5%) can be achieved by paying 10.5% pension fees and accrual annual rate of return on the accumulated contributions of 6.5 %.

The model (option 2) has been proposed as a simulation of this situation at the economy when the rate of pension fees during the insurance period with wages of individuals will be unchanged - 7%; payroll will remain at 2014-2015 years - 636, 7 billion UAH. Only rates will on investment income are variables. Based on the assumption that using the funds must be lower interest rates than deposits, we consider rates is range from 6.5 to 10%. The result calculations are presented in Table 2.

Table 2 - Correlation between future pensions and wages subject to the initial conditions of the model (option 2)

Payroll, billion UAH	636,7							
Pension fees rate, %	7,0							
Investment income,%	6,5	7,0	7,5	8,0	8,5	9,0	9,5	10,0
The budget of the Pension Fund Ukraine 35 years, billion UAH	4311,6	4827,9	5412,3	6074,3	6824,4	7674,4	8638,1	9730,8
Annual the Pension Fund of Ukraine	287,4	321,9	360,8	405,0	455,0	511,6	575,9	648,7
The ratio between pensions and wages,%	61,7	69,0	77,4	86,9	97,6	109,7	123,5	139,1

Data in table 2 show that highest ratio between the amount pensions and wages will be achieved by 10% annual investment income on accumulated over 35 years fees to the PFU in conditions constant rates of pension fees and changes in investment incomes in the range of 6.5% to 10% per annum. Under such circumstances, as in option 1, excluding investment income on the balance of unused amounts and incurred administrative and management costs fund, the level of pensions obtained during for 15 years will amount to 139% of the resulting income. Rejecting the extreme values of the model and considering the average values of the set parameters, we can conclude that if in conditions the 8-8.5% of investment incomes and 7% insurance fees everybody may in the future count on a pension that is equal 86-97% of its earnings during the period of work activity.

The solution to the second problem, which we determined, is the need to establish communication between the share of payroll in GDP and the ratio between received wages of the employed population and its future pension, given in table 3.

In constructing the table 3 baseline conditions were same as for the table 2.

The share of payroll in GDP Ukraine is set at 2014-2015 years (48,9%) and remains unchanged for pension fees in the range from 7% to 10.5% and investment income in the range from 3% to 6.5%.

Table 3 - Correlation between future pensions and wages at constant share of payroll changes and rate of pension fees and investment income on accumulated contributions

The share of payroll in GDP	48,9							
Pension fees rate, %	7,0	7,5	8,0	8,5	9,0	9,5	10,0	10,5
Investment income,%	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5
The budget of the Pension Fund Ukraine 35 years, billion UAH	222,3	263,9	312,4	369,0	435,1	512,2	602,2	707,1

Annual the Pension Fund of Ukraine	14,8	17,6	20,8	24,6	29,0	34,2	40,2	47,1
The ratio between pensions and wages,%	29,1	34,5	40,9	48,3	56,9	67,0	78,8	92,5

The data have given in table 3 show a share of payroll in GDP and increasing the size of pension fees and investment incomes in no way to affected the ratio between the salary and future pension. It will continue to be 92.5% of the wages provided that 10.5% rate of pension fees and 6.5% of revenue accumulated by PFU (or 29.1% of the wages provided that 7% rate of pension fees and 3% of investment incomes on pension savings).

Let's learn which factors economic or financial system will significantly affect the ratio between pensions and payroll.

Conditions of table 4, unlike the conditions table 3, determine the change in all its parameters: from a growth of the share of the payroll fund in the GDP, increasing the rate of pension fees to increasing investment incomes. We assume that the change in these parameters will continue to grow at 0.5-1%, compared to a basic index.

Table 4 - Relationship between future pensions and payrolls while increasing the share of payroll, pension contribution rates and investment income on accumulated contributions

The share of payroll in GDP	51,0	52,0	53,0	54,0	55,0	56,0	57,0	58,0
Pension fees rate, %	7,0	7,5	8,0	8,5	9,0	9,5	10,0	10,5
Investment income,%	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5
The budget of the Pension Fund Ukraine 35 years, billion UAH	222,3	269,0	324,7	390,8	469,3	562,5	673,1	804,2
Annual the Pension Fund of Ukraine	14,8	17,9	21,6	26,1	31,3	37,5	44,9	53,6
The ratio between pensions and wages,%	29,1	34,5	40,9	48,3	56,9	67,0	78,8	92,5

Based on the data in table 4 we can be argued that increasing values of the ratio between pensions and payrolls, despite the increase in the share of payroll in the GDP, is at the same rate as in the constant value of this index. In other words, no absolute size of payroll or change in its share of GDP by the amount pensions for retirement-employed not affected. Its impacts exercise only the rate of pension fees, investment income, term for savings pension fees and age for retirement.

Balancing the financial resources of the state pension insurance can be achieved by viewing the source of financing current expenditure on maintenance of the PFU.

Art. 87 Budget Codex of Ukraine determined that the expenditures undertaken by the State Budget of Ukraine include expenditures on public administration, including the legislative and executive powers [7]. The legal status of the PFU equals to that of the State Committee of Ukraine.

In this point, the provisions of Art. 87 Budget Codex of Ukraine come into contradiction with existing legislation, defining features of the administrative expenditures of state funds, including the PFU. In particular, Art. 72 and 73 of the Law of Ukraine "On Compulsory State Pension Insurance", which provided funding for administrative expenses of the PFU due to insurance pension contributions [8]. Thus, the existing practice of current maintenance and logistical support of the PFU due to insurance fees is contrary to the provisions of the Budget Codex of Ukraine and must be changed.

The next step, which is going to balance the financial resources of the state pension insurance, it's a need to introduce uniform requirements for formation of financial reserve PFU funds. In practice is no single methodological approach to the formation of financial reserves state pension insurance, as evidenced their different volumes during the period reviewed, the absence of mandatory their creation.

Extrapolation of Art. 14-3 of the Budget Codex of Ukraine to PFU activity, we suggest that the amount of reserve cash should not exceed 2% of the expenditure budget of the PFU. It is to provide seven-days requirements to finance insurance payments. Thus, maintaining the reserve of circulating cash at end of period (year) should become mandatory.

The proposed measures will enable to obtain a controlled and certain construction of the system of state pension insurance.

Conclusions and discussion.

Among the strategic ways of efficient using financial resources the state pension insurance to realize in practice the second level pension system of Ukraine. The conclusion is based on the fact that these actions will reduce burden on the budget PFU because the structure of its financial resources has shown to the deterioration of this type of social insurance. Reducing the burden or cost pensions for PFU is going to eliminate the need for financing pensions from the State budget of Ukraine at the same time improve the ratio between internal and external resources of state pension insurance.

Four economic-mathematical models have helped to formulate the following conclusions:

a) no absolute size of payroll or change in its share of GDP for retirement-employed not affected. Its impacts exercise only the rate of pension fees, investment income, term for savings pension fees and age for retirement;

b) at rates of pension contributions at a rate of 10.5% on payroll and 6.5% on investment income and accumulating during the 35 years labor activity (a scenario most closely approximates to the economy of Ukraine) can achieve the greatest correlation between the level of payroll of employees and their future pension - 92.5%.

Further Study

Solving problems balancing financial resources state pension insurance in future pension system of Ukraine is perspectives for further study. Developing the second level pension system will help to improve a correlation between the level of a payroll of employees and their future pensions that must be base only on insurance fees.

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