

REPUBLIC OF AZERBAIJAN

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ABSTRACT

of thesis for the award of the degree of Doctor of Philosophy

POTENTIAL IMPACT OF THE LIBERALIZATION OF THE PENSION SYSTEM ON ECONOMIC DEVELOPMENT IN AZERBAIJAN

Speciality: 5308.01-“General economy”

Field of science: 53 – Economic sciences

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Baku -2024

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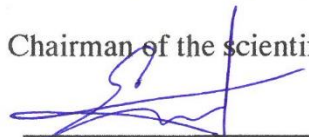
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GENERAL CHARACTERISTICS OF THE WORK

Relevance and development of the topic. One of the most important components of the social protection system of each state is pension provision. Most countries are trying to establish an efficient model of pension provision to improve the social situation of the disabled people. An effective pension provision system plays an important role in strengthening the social protection of pensioners. The pension system is also an important element of the financial system of every country. In this regard, special attention is paid to its structure and activity in all countries of the world. In general, pension systems develop differently depending on the historical traditions, the social structure of society, the regulatory role of the state in the economy and etc.

Currently, the world population is on the verge of aging, and this demographic process is typical for both developed and developing countries. Demographic processes have a major impact on the labour force, labour market dynamics, social security system, employment and economic development. Demographic processes have already become a global trend covering all countries and regions. The International Monetary Fund (IMF) believes that population aging in many developed and developing countries will increase pension and health care costs, and projected population dynamics will have a negative impact on natural growth and government revenues [1]. According to the forecasts of the United Nations (UN), the world population will exceed 9 billion people by 2050, and the share of the population over the age of 60 is expected to increase three times [2].

As in all countries of the world, the process of population aging is typical for Azerbaijan. This can create significant difficulties for

¹ The Fiscal Consequences of Shrinking Populations: [Electronic resource] / B.Clements, K.Dybczak, V.Gaspar [etc.]. - IMF staff discussion note, 2015. URL: <https://www.imf.org/external/pubs/ft/sdn/2015/sdn1521.pdf>

² The 2018 Ageing Report: Economic and Budgetary Projections for the 28 EU Member States (2016-2070): [Electronic resource] / - Luxembourg: Publications Office of the European Union, 2018. URL: https://economy-finance.ec.europa.eu/system/files/2018-05/ip079_en.pdf

the state in paying pension costs. Thus, insufficient financial stability, changes in the labour market, informal employment, social security evasion, non-investment of the funds accumulated in the personal accounts of employees indicate problems that may arise in the pension system in the future. Such problems have been solved in most countries of the world by liberalizing the pension system. In our country, pension provision is completely controlled by the state. It is possible to solve some of the existing and potential problems in this field by liberalizing the pension system. Liberalization of the pension system also has a positive impact on socio-economic development. All this makes it necessary to conduct a fundamental research in the direction of forming and liberalizing a stable pension system in Azerbaijan. The subject of the dissertation entitled "Potential impact of the liberalization of the pension system on economic development in Azerbaijan" is particularly relevant in view of the above.

The object of the research is the pension system of the Republic of Azerbaijan, and its **subject** is the study of theoretical, methodological and practical issues of economic events and processes related to the liberalization of the pension system.

Level of study of the problem. Researches based on various approaches have been conducted by both Azerbaijani and foreign scientists and experts in the direction of evaluating pension reforms, strengthening the social protection of pensioners, and evaluating the impact of the liberalization of the pension system on socio-economic development. A.G. Alirzayev, A.T. Nagiyev, C.B. Guliyev, A.S. Guliyev, E. Gontmacher, A.V. Pudovkin, R. Disney, L. Klapper, A. Börsch-Supan, L. Klapper, G. Panos, A. Rozanov, B. P. Bosworth, G. Burtless, R. Beattie, W. McGillivray, D. Blake, J. Pitzer, A. Grech, A. Taha, M. Kolchak, D. Baker, L. Richard, B.H. Casey, J.M. Dostal, R. Fenge, B. Scheubel, R. Holzmann, R.P. Hinz and others have conducted studies.

Foreign scientists F.Chybalski, P.R.Orszag, N.Barr, P.A.Diamond, J.B.Williamson, C.Ergenekon, A.Karakoç, M.A.Orenstein, L.J.Kotlikoff, K.Smetters, J.Walliser, N.Altiparmakov, M.Nedeljkovic, E.S.Andrews, Azerbaijani scientists R.S.Abdullayeva, M.N.Aliyev, R.U.Murshudov and others

studied both the current situation in the field of pensions and the socio-economic effects of the liberalization of pension systems. Regarding the financial aspects of the pension system, foreign scientists J.Arza, C.Enache, S.G.Cecchetti, M.King, J.Yetman, E.Cosmin, R.M.Laura, C.M.Marius, E.Davis, Y.W.Hu, S.Emily, C. Gillion, J. Turner, C. Bailey, C. Meng, W. D. Pfau, K. Schmidt-Hebbel and D. Latulippe, V. S. Nazarov, E. D. Zabolotsky, A. A. Kuklin and others have made valuable research.

Changes in demographic processes were studied by Azerbaijani scientists Sh.M. Muradov, R. Sh. Muradov, R. Efandiyev, A. Gozalova, and foreign scientists O. V. Krasnova, A. Q. Lidere, Y. Aksoy, S. B. Henrique.

The purpose and objectives of the study. The goal of the dissertation is to assess the potential impact of the liberalization of the pension system on economic development in the Republic of Azerbaijan. For the implementation of the set goals, the solution of the following tasks is envisaged:

- Determination of the theoretical and methodological basis of the liberalization of the pension system;
- Analysis of the current state of the pension system in Azerbaijan, detection and assessment of problems;
- Determination of economic, social and demographic factors affecting the liberalization of the pension system in Azerbaijan;
- Measuring and evaluating the level of liberality-dirigisme of the pension system;
- Assessment of the potential impact of the liberalization of the pension system on socio-economic development;
- Determining the directions of liberalization of the pension system.

Research methods. Methods such as logical summarization, survey, comparative and systematic analysis, analytical-statistical analysis, correlation and regression analysis were used in the research work.

The principal theses of the defense:

- The pension system of Azerbaijan is the most dirigiste among the 30 studied countries;
- A number of social, economic and demographic factors necessitate the liberalization of the pension system in Azerbaijan;
- The level of access to labour pension of the population is low;
- Azerbaijan does not have a pension capital use or inheritance mechanism;
- As the social burden of the state increases in Azerbaijan due to demographic reasons, financial problems will arise in the pension system;
- The realization of allocations of those engaged in the economy collected in SSPF by depositing them in various banks has a positive effect on socio-economic development;
- There is a great need to educate the population in order to ensure the formation and efficient operation of the non-state pension system.

Scientific novelty of the research:

- ✓ The level of liberality of the pension system of 30 countries of the world has been comparatively evaluated over a 10-year period on the basis of the L(D)IPS Index for the first time;
- ✓ It has been determined that the level of pension provision of the pensionable population by age has decreased as the ratio of the retirement age population to the working age population increases in Azerbaijan;
- ✓ It has been determined that the social burden of the state is increasing in Azerbaijan;
- ✓ Social, economic and demographic factors that necessitate the liberalization of the pension system in Azerbaijan have been identified;
- ✓ A mechanism for the use of pension capital, as well as inheritance, has been developed in Azerbaijan for the first time;
- ✓ The allocations of those engaged in the economy collected in the SSPF were deposited in various banks for the first time;

- ✓ CSSIF revenues were invested in government bonds, Central Bank notes and interbank loan instruments for the first time;
- ✓ The forecast of revenues on CSSIF and expenses of SSPF until 2030 is given;
- ✓ Proposals and recommendations have been made in the direction of increasing the impact of the liberalization of the pension system on economic development in Azerbaijan.

Theoretical and practical significance of the research.

Research work can be used to solve problems related to improving the pension system, as well as to develop pension programs and concepts.

The theoretical and methodological basis of the study is the reports of the IMF, UN and OECD on the pension system, adopted laws on the development, and regulations of the pension system in the Republic of Azerbaijan, the State Program, Strategy, Acts of the Cabinet of Ministers, and Milli Majlis, reports of the Ministry of Labor and Social Protection of Population and State Social Protection Fund, opinions of the Chamber of Accounts, materials of the State Statistics Committee of Azerbaijan.

Research approval and implementation. The results of the research were presented at conferences held in Azerbaijan, Hungary, and Russia. Among them are "Azerbaijan's pension policy in the conditions of globalization" (Azerbaijan-2016), "Evaluation of the impact of economic development on public welfare" (Azerbaijan-2017), "Pensioner's standard of living and poverty line" (Azerbaijan-2017), "What happened in the social situation of pensioners in Azerbaijan" assessment of changes" (Azerbaijan-2018), "Influence of informal employment on pension provision" (Russia-2019), "The role of demographic determinants in the liberalization of the pension system: cross-country analysis" (Hungary - 2021), "Evaluation social and economic reforms in the pension system of Azerbaijan" (Russia-2022), "Social factors affecting the liberalization of the pension system in Azerbaijan" (Russia-2023). The results of the dissertation were awarded a prize at the scientific-research competition held at the Institute of Economics dedicated to "Victory Day".

17 scientific works have been published on the subject of the dissertation. 5 of the articles and abstracts were published in foreign journals, 12 were published in prestigious journals recommended by HAC.

Name of the organization where the dissertation work is performed. The dissertation work was carried out at the Institute of Economics of Ministry of Science and Education of Azerbaijan Republic.

The scope of the dissertation. The dissertation consists of three chapters and nine paragraphs, introduction, conclusion and propositions. The dissertation consists of 169 pages, with Chapter I 40866 marks, Chapter II 89119 marks, Chapter III 58149 marks, in total 208568 marks.

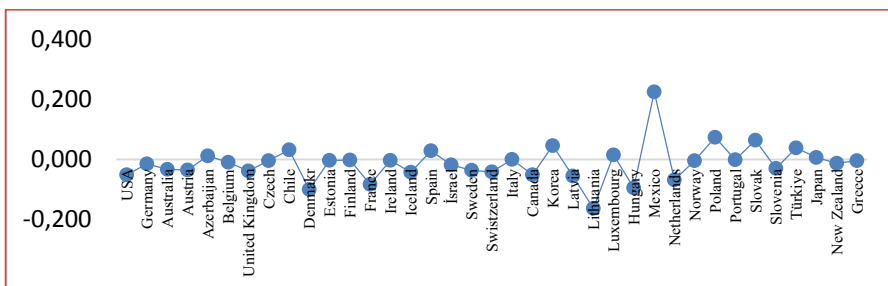
MAIN SCIENTIFIC THESES FOR DEFENSE

Thesis 1. The pension system of Azerbaijan is the most dirigiste among the 30 studied countries.

The Liberality Index of Pension System (L(D)IPS) is used to assess the level of liberality (dirigiste) of the pension system. (L(D)IPS) is one of the three sub-indices calculated according to the methodology of the Liberality (Dirigiste) Index Social Security System (L(D)ISSS) proposed by doctor of Economic Science R.S.Abdullayeva [3]. L(D)ISSS is based on the methodology of the Index of Leftness (Rightness) of Economy calculated by the Institute of Economics of Ministry of Science and Education of the Republic of Azerbaijan.

The research was carried out over a period of 10 years. As a result of the research, it has been determined that the changes in the legislation on the pension and the limits imposed on investments had an impact on the changes in the indicators of the countries in the years 2011-2020 regarding the L(D)IPS. Let's review the dynamics of L(D)IPS over the 2011-2020 years (Graph 1).

³ Abdullayeva, R.S. Sosial təminat: liberal və dirijist iqtisadi sistemlərdə // - Bakı: "Elm və Bilik", - 2018. - 200 s.



Graph 1. L(D)IPS change dynamics in 2011 and 2020

Note: *calculated by the author.*

During 2011-2020, the group of most liberalized countries includes Lithuania, France, Hungary, Denmark, and the Netherlands, and the group of dirigist countries includes Mexico, Slovakia, Chile, Poland, Korea, Spain, and Turkey.

Therefore, as a result of the research conducted, it has been determined that reduction of state pension fees, elimination of limits on the investment of private pension funds, reduction of the social insurance fee rate for employers have significant impact on the development of pension systems. It is possible to see this through the dynamics of L(D)IPS over the 2011-2020 years, especially, based on a case studies of Lithuania, Mexico, Denmark, France, Hungary and Poland. The high rate of social insurance for employers in Azerbaijan and non-existence of non-state pension funds has led to the most dirigiste position for L(D)IPS.

Thesis 2. A number of social, economic and demographic factors necessitate the liberalization of the pension system in Azerbaijan.

The presence of non-state pension provision along with the state pension system, contributes to the revitalization of the investment climate and economic growth by strengthening the social protection of pensioners. However, there are a number of factors that prevent the liberalization of the pension system in our country, that is, the formation of a non-state pension system. They include economic, social and demographic factors.

Economic factors affecting the pension system in our country are manifested in the collection of social insurance premiums, the

active-passive insured ratio, the concealment of economic activity, and the income and expenses of the SSPF.

The most important of the economic factors affecting the liberalization of the pension system in Azerbaijan is related to *insurance premiums*. Compulsory social insurance fees in Azerbaijan are determined according to the Law of the Republic of Azerbaijan "On Social Insurance". According to this Law, "*compulsory state social insurance fee is determined as a percentage of the salary and 22% is paid by the insurer and 3% by the insured*" [4]. In general, in countries with a liberal economy, social insurance payments for the employer are either absent (Denmark, Chile, and New Zealand) or in small amounts (USA, Australia, Switzerland, Iceland, Lithuania, Canada, Korea). Social insurance payments for the employer are high in countries (Austria, Czech Republic, France, Estonia, Italy) with a relatively dirigiste economy, including Azerbaijan.

One of the economic factors affecting the liberalization of the pension system in Azerbaijan is the *active-passive insured ratio*. It shows how much an employee funds a retiree. It is possible that in some developed countries this ratio is 4, and in some 6-7 even higher. For the pension system to be sustainable, this coefficient is considered equal to 4. However, the minimum value of this coefficient should not be lower than 2. If there is an indicator below 2, it means that there are already problems in the social security system. Currently, there are 1 pensioner for every 4 insured persons in the European Union countries, and 1 pensioner for every 6 insured persons in the OECD countries [5]. Although there is an allocation pension system in Azerbaijan, the active-passive insured ratio is very important for our country. Because the compulsory state social insurance fee (CSSIF) plays an important role in the payment of benefits related to the temporary loss of working capacity, burial, pregnancy and childbirth, the birth of a child, and care for children

⁴ "Sosial sığorta haqqında" Azərbaycan Respublikasının Qanunu: [Elektron resurs] // 18 fevral 1997-ci ildə qəbul edilmişdir (7 mart 2023-cü il tarixdə olan dəyişiklik və əlavələr). – Bakı: Qanun, - 2023. URL: <https://e-qanun.az/framework/3813>

⁵ Taha, A., Kolçak M. Türkiye ve OECD Ülkelerinde Sosyal Güvenlik Harcamaları // Journal of Social Sciences of Muş Alparslan University, -2017. – Vol. 5, No3.

up to the age of 3. If the active-passive insured ratio in Azerbaijan was 2.07 in 2013, it has significantly increased to 4 in 2022. We can observe a significant increase after 2020 [6].

The UN has given forecasts for some countries until 2100. If in the United States in 2015 4.06 employees financed 1 pensioner, then in 2020 this figure will be 3.51, and in 2100 it is predicted to be 1.82. According to forecasts, the ratio of active-passive insured in Russia is from 4.84 to 2.22, in Japan from 2.16 to 1.31, in Germany from 2.88 to 1.48, in the UK from 3.23 to 1, 68, in France from 3.00 to 1.6, in Italy from 2.65 to 1.43, in Spain from 3.27 to 1.37, in Ukraine from 4.05 to 1.92, in Poland from 4 .11 to 1.41, in China from 6.91 to 1.56 [7].

If the number of employed population in Azerbaijan was 4759.9 thousand people and the number of actual insurance payers was 3316.78 thousand people in 2016, 1443.12 thousand people or 30.3% of the employed population was in the informal labour market in that year. In 2016, 69.7% of the employed population was a participant in the formal labour market [8]. As it can be seen from the analysis, the number of participants in the informal labour market decreased by 28.3% in the period of 2016-2022. Thus, in 2022, the number of participants in the informal labour market decreased by 14.5 times compared to 2016, and by 12.1 times compared to 2019. The first reason for this change is the strategy and programs adopted by the state regarding employment provision in recent years. In particular, it was reflected in the "*Measure Plan for the Prevention of Informal Employment in the Republic of Azerbaijan*" [9]. It should be

⁶ Həşimova, V.X. Azərbaycanca pensiya sisteminin liberallaşdırılmasına təsir göstərən iqtisadi amillər // Bakı: İqtisadi Artım və İctimai Rifah, - 2018. № 1, - s. 91-101.

⁷ Workers Per Retiree (ages 20-64 per ages 65+): [Electronic resource] / United Nations, Department of Economic and Social Affairs, Population Division, 2017. URL: <https://www.econdatas.com/workers.html>

⁸ "Əmək Bazarı" Statistik məcmuə: [Elektron resurs] // Bakı: Azərbaycan Respublikası Dövlət Statistika Komitəsi, - 2022. URL: <https://www.stat.gov.az/source/labour/>

⁹ Azərbaycan Respublikasında qeyri-formal məşğulluğun qarşısının alınmasına dair Tədbirlər Planı"nın təsdiq edilməsi haqqında Azərbaycan Respublikası Prezidentinin Sərəncamı: [Elektron resurs] // 9 oktyabr 2017-ci ildə qəbul

noted that pension provision is one of the most important incentive mechanisms in informal employment. Thus, it is possible to obtain pension insurance on the basis of insurance length of service and paid mandatory social insurance contributions. Reducing the level of informal employment also had a positive effect on the increase in the income of SSPF. The second reason is the employers officially registered labour contracts in order to obtain permits to go to work during the COVID-19 pandemic. As a result, the number of insured persons increased. In 2016-2022, the number of employed population increased by 1.03 times, and the number of insured persons increased by 1.45 times

So, while in 2010, the share of compulsory state social insurance fees in the total income of SSPF was 69.7%, it decreased to 62.1% in 2016. For 2022, this indicator was 76.32%. On the basis of the conducted analysis, it was determined that the revenues from compulsory state social insurance fees paid at best 63.59% of the expenses of SSPF in 2005 and 59.82% in 2017. In 2017, increasing the retirement age and social insurance seniority led to an increase in the income from the CSSIF. In 2021, this indicator was 79.36%, and in 2022, it was 80%. The reason for this increase is not only the increase of the retirement age and social insurance seniority, but also the measures taken to prevent informal employment.

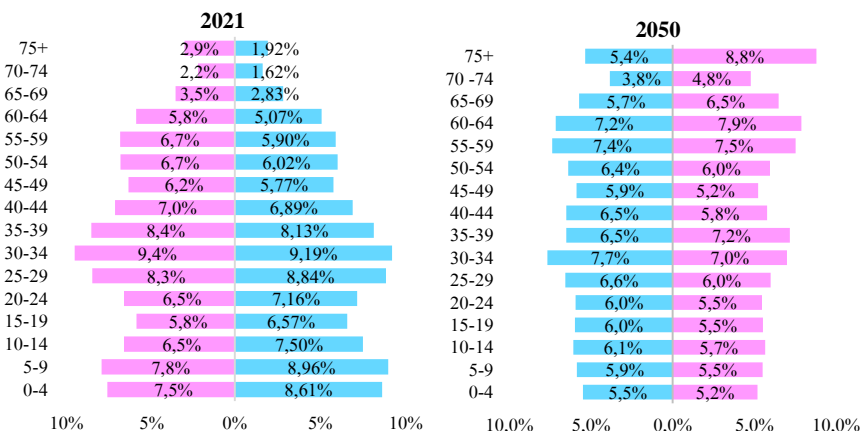
The analysis shows that the more CSSIF is paid, the more payments can be made to the population. It should be noted that the increase in CSSIF collections will increase both the costs of paying labour pensions and the costs of benefits at the expense of CSSIF. This will lead to the improvement of the social situation of the population, especially pensioners. In order to further strengthen the connection between the social insurance fees paid for the insured and pensions and benefits, it is necessary to reduce the number of "undercover workers" in the first place.

One of the most important indicators of the sustainability of the pension system is the ratio of state pension expenses to GDP. The

ratio of state pension expenses to GDP in Azerbaijan increased from 2.8% to 6.9% during 2006-2022.

Demographic processes affecting the formation of the pension system include the ratio of the pensionable age population to the working age population, life expectancy at birth, retirement age, expected pension payment period and natural growth factors [10].

According to the forecasts of the UN, in 2050, the aging of the population will accelerate from above. If at the beginning of 2000, the share of the population aged 65+ among the total population was 5.2%, now it has increased by 2.2 percentage points to 7.4% by the beginning of 2021, 8.0% by the beginning of 2022, 8.5% by the beginning of 2023. Apparently, the aging process is characteristic of our country and this aging process will continue [11].



Graph 2. Age pyramid (2021, 2050)

Source: *The graph was compiled by the author based on World Population Prospects indicators and demographic indicators of the State Statistical Committee of the Republic of Azerbaijan.*

If we look at Graph 2, we can see that the share of the population aged 65+ in the structure of the population was 8.6% for

¹⁰ Abdullayeva R.S., Həşimova V.X. Pensiya sisteminin liberallıq-inzibatilik səviyyəsi və sosial-iqtisadi inkişaf [və b.] // İS(S)İ-2015: İqtisadiyyatın liberallıq potensialı. Nazim Müzəffərlinin elmi redaktəsi ilə. Bakı: - 2017 - səh. 136-163.

¹¹ World Population Prospects 2022: [Electronic resource] / The Population Division of the Department of Economic and Social Affairs of the United Nations, 2022. URL: <https://population.un.org/wpp/>

women and 6.4% for men in 2021, but it will increase by approximately 2.3 times in 2050 and become 20.1% for women, and 15% for men. This means that by 2050, the share of the 65+ population in Azerbaijan will increase, which will increase the country's potential social burden.

The social factors that necessitate the liberalization of the pension system in Azerbaijan include the relative level of pensions, the replacement rate of pensions, the poverty level of pensioners, incomes of pensioners, and etc. As a result of the conducted research, it was determined that the relative level of pensions, the replacement ratio of pensions, and the poverty level of pensioners can be high in countries with either liberal or dirigiste pension systems.

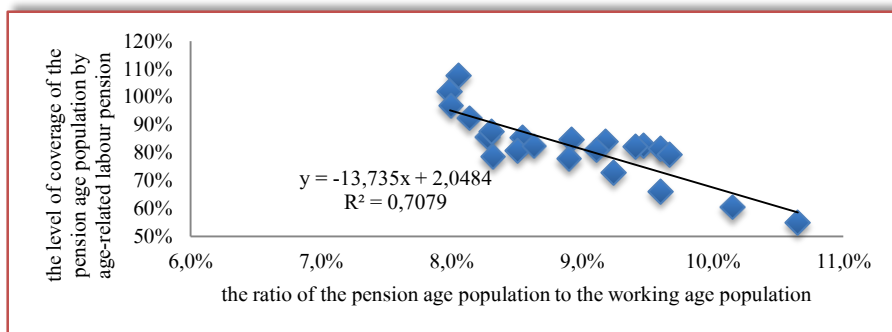
Thesis 3. The level of access to labour pension of the population is low.

Increasing the retirement age almost reduces access to the age-related labour pension. This figure may vary depending on the region and country. According to ILO calculations, the average level of pension coverage among the elderly is 53.7% for all over the world, 98% in Western Europe, 71% in Latin America, and 24% in South Asia. This indicator is 100% in China, Italy, France, Canada, Germany, USA, Japan, Great Britain, 20% in Turkey, 24% in India, 25% in Mexico, 74% in Australia, 78% in Brazil, 89% in Argentina, 14% in Indonesia [12].

It should be noted that as the retirement age is increased in Azerbaijan, the level of coverage of the pension age population by age-related labour pension decreases. Thus, in 2001-2022, the coverage of the pension age population by age-related labour pension was 86% in 2001, and in 2022, this figure was 51%. This means that in 2022, only 51% of the pensionable population, that is, about half, was covered by labour pension. The other half is people who do not have access to a labour pension, and these people receive age benefits.

¹²World social protection report 2017-19: Universal social protection to achieve the Sustainable Development Goals: [Electronic resource] / Geneva: ILO, 2017. URL: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_604882.pdf

Let's review the correlation relationship between the level of coverage of the pension age population by age-related labour pension and the ratio of the pension age population to the working age population in Azerbaijan (Graph 3).



Graph 3. Dependence between the level of coverage of the pensioners by age-related labour pension and the ratio of the pension age population to the working age population in Azerbaijan (2006-2022 years)

Source: Graph was compiled by the author based on reports of the Ministry of Labor and Social Protection of Population and demographic indicators of the State Statistical Committee of the Republic of Azerbaijan.

Based on the analysis, it was determined that there is a negative high correlation between the indicators ($R=-0.841$). This means that as the ratio of the pension-age population to the working age population increases in Azerbaijan, the level of provision of the pension-age population with age-related labour pension decreases. Therefore, in order to ensure access of the population to the labour pension, it is necessary to mitigate the conditions for retirement, as well as to liberalize the pension system.

Thesis 4. Azerbaijan does not have a pension capital use or inheritance mechanism.

Between 2001 and 2022, the number of working-age deaths in Azerbaijan continues to increase year by year. According to the data of SSCRA (The State Statistical Committee of the Republic of Azerbaijan), the proportion of working-age deaths among the total number of deaths was 35% for men in 2001, but it was 45% in 2022, and 15.3% for women in 2001, 22.7% in 2022. That is, 45 out of every 100 men and 23 out of every 100 women die before reaching retirement age. A pensioner should have an expected pension

payment period of about 12 years to be able to receive the full amount of pension capital accumulated during his working life. According to the Law of the Republic of Azerbaijan "On Labour Pensions", the family members of a person who died at a working age have the right to a labour pension due to the loss of the head of the family. This category includes *“a child under the age of 18, a disabled person over the age of 18 whose disability has been determined before reaching the age of 18, those who studies full-time until the age of 23, father, mother, husband, wife who have reached retirement age or disabled due to 61-80% or 81-100% impairment of body functions, one of the non-working parents or husband (wife), or grandfather, grandmother, brother, sister, who takes care of the children, brothers, sisters, grandchildren of the deceased or deceased head of family who are under 8 years of age”* [13]. In some cases, the family of the deceased is deprived of the opportunity to use the funds collected for years as they do not fall into any of these categories. Unfortunately, the possibility of using the pension capital by the mentioned people and the mechanism of inheritance is not reflected in the legislation of Azerbaijan. Both the use of pension capital and inheritance mechanisms exist in many countries. In world practice, it is allowed to withdraw a certain part of the pension capital or to return it using it as a loan. Pension capital can also be used to improve housing conditions, repair the house, pay off a mortgage loan, perform operations not included in the health insurance package, or for treatment. In some countries, if the pension capital is withdrawn from the system before reaching the retirement age, then the insured have to pay a certain amount of tax.

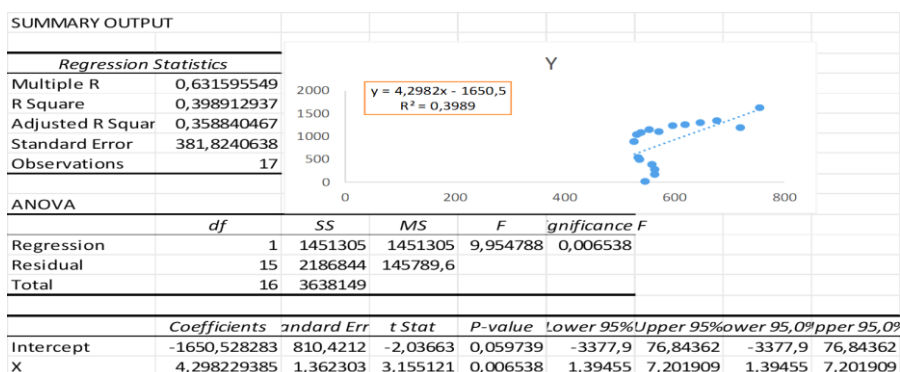
Thesis 5. As the social burden of the state increases in Azerbaijan due to demographic reasons, financial problems will arise in the pension system;

The main direction of the implemented pension reforms is to strengthen financial stability. The conducted analyses showed that

¹³ Əmək pensiyaları haqqında Azərbaycan Respublikasının Qanunu: [Elektron resurs] // 7 fevral 2006-cı ildə qəbul edilmişdir (30 dekabr 2022-ci il tarixdə olan dəyişiklik və əlavələr). – Bakı: Qanun, - 2022.
URL: <https://www.e-qanun.az/framework/11566>

the income of SSPF from compulsory state social insurance fees is increasing, but transfers from the state budget are not decreasing, but rather increasing. This leads to an increase in the state's social burden. Although the volume of transfers from the state budget is increasing, the share of transfers from the state budget in the income of SSPF is currently decreasing.

In order to assess the financial sustainability of the pension system, the figure below shows regression analysis between the number of the population aged 65+ and the transfers from the state budget to the SSPF (Graph 4).



Graph 4. regression analysis between the number of the population aged 65+ and the transfers from the state budget to the SSPF

Note: Graph was compiled by author.

As a result of the regression analysis, it was determined that a 1% increase in the number of the population aged 65+ increases the volume of transfers from the state budget to the SSPF by 2.85%. This shows that no matter how many reforms are implemented, the increase in the specific weight of the elderly population will cause the social burden of the state to become heavier. If the ratio of the pension age population to the working age population is 12.2% in 2023, according to the forecasts of the UN, it will be 26.7% in 2050 [14]. Therefore, it is necessary to invest the collected funds. As a result of this, it is possible to reduce the social burden of the state.

¹⁴ World Population Review: [Electronic resource] / United Nations
URL: <http://worldpopulationreview.com/>

The forecast of the income from the CSSIF and the expenses of the SSPF until 2030 have been calculated. According to forecasts, growth dynamics will be observed in CSSIF revenues and SSPF expenses until 2030, and CSSIF revenues will be 4970.183 million manats in 2030, and SSPF expenses will be 7013.28 million manats. That is, the receipts for the CSSIF will increase by 29.3% until 2030, and the expenses of the SSPF will increase by 44.8%. Thus, if currently the incomes from the CSSIF cover the expenses of the SSPF in the best case by 79.36%, according to the forecasts, the receipts from CSSIF in 2030 will be able to cover the expenses of the SSPF in the best case by 71%. Studies show that in 2030, the revenues from CSSIF will cover the costs of the SSPF by 8.36% less.

Based on the forecast calculation, it was determined that the amount of transfer from the state budget will increase, while the revenues from CSSIF will cover the expenses of the SSPF by 8.36% less. In our opinion, in order to reduce the social burden of the state, the revenues from CSSIF should be invested so that the level of profitability of SSPF increases. Thus, after a certain period of time, SSPF will become a self-financing institution.

At present, it is more appropriate to place the receipts from CSSIF in government bonds, notes of the Central Bank and instruments for interbank credit in the following proportions (Table 1).

Table 1. Portfolio distribution of income from CSSIF

CSSIF	government bonds	notes of the Central Bank	instruments for interbank credit (manat)		
million manat	average profitability	average profitability	average interest rate		
	8%	8,77%	7,55%	5,12%	
			with manat	with foreign currency	
portfolio allocation	50%	30%	10%	10%	
3843380000	1921690000	1153014000	384338000	384338000	
	153735200	101119327,8	29017519	19678105,6	
	2075425200	1254133328	413355519	404016105,6	4146930152
3843380000	30%	40%	15%	15%	
	1153014000	1537352000	576507000	576507000	
	92241120	134825770,4	43526278,5	29517158,4	
	1245255120	1672177770	620033279	606024158,4	4143490327
3843380000	30%	50%	10%	10%	
	1153014000	1921690000	384338000	384338000	
	92241120	168532213	29017519	19678105,6	
	1245255120	2090222213	413355519	404016105,6	4152848958

Note: Table was compiled by the author.

According to the indicators of Table 1, in 2022, the average yield of government bonds was 8%, notes of the Central Bank were 8.77%, interbank loans were 7.55% in manat, and 5.12% in foreign currency. Table 2 shows the portfolio distribution of the funds received by the SSPF from CSSIF in three different directions. In first case, 50% of the revenues from CSSIF were invested in state bonds, 30% in Central Bank notes, 20% in interbank loans, by sharing 10% in manats and 10% in foreign currency. In this case, the income from CSSIF will be 303550152.4 manats per month, and it can increase approximately 2 times during the year.

In second case, 30% of the revenues from CSSIF were invested in state bonds, 40% in Central Bank notes, 30% in interbank loans, by sharing 15% in manats and 15% in foreign currency. In this case, the income from CSSIF will be 300110327,3 manats per month, and it can increase approximately 2 times during the year.

In third case, 30% of the revenues from CSSIF were invested in state bonds, 50% in Central Bank notes, 20% in interbank loans, by sharing 10% in manats and 10% in foreign currency. In this case, the income from CSSIF will be 309468957,6 manats per month, and it can increase approximately 2 times during the year.

The calculations show that SSPF can obtain additional financial resources by correctly and efficiently assessing the compulsory state social insurance fees. This will lead to an increase in pensioners' incomes and in the level of well-being.

Thesis 6. The realization of allocations of those engaged in the economy collected in SSPF by depositing them in various banks has a positive effect on socio-economic development.

One of the missing features of the existing pension system in our country is the non-investment of the pension capital collected in individual accounts. Thus, those who pay social insurance fees can visually see those funds in their personal accounts, but they can neither use it nor increase it. However, according to the international experience, the people can deposit the minimum pension capital accumulated in individual accounts or the desired amount from the account in the bank of their choice and trust. In this case, they can get interest income in excess of the minimum pension amount. The

table below shows the minimum pension capital of 40,320 manats invested in banks.

If 40,320 manats of pension capital are deposited in different banks for a period of three years, the amount of pension can be increased through annual income. For example, the highest bank interest (10.5%) is in Turanbank and Bank of Baku. 4233.6 manats per year and 12700.8 manats per 3 years can be obtained. When that income is added to the minimum pension capital, it makes 53020.8 manat pension capital. Dividing that amount by 144, we get a monthly pension amount of 368.2 manat. This is 88.2 manats more than the minimum pension amount. Thus, the investment of the funds accumulated in individual accounts by putting them into bank deposits will lead to an increase in the pension amount, as well as an increase in the standard of living of pensioners (Table 2).

Table 2. Assessment of the minimum pension capital in banks, manat

Banks	bank rate, %	annual	3 years	Amount of pension capital	Monthly pension amount	difference
ABB	6.5	2620.8	7862.4	48182.4	334.6	54.6
AccessBank	10.5	4233.6	12700.8	53020.8	368.2	88.2
AFB Bank	9.5	3830.4	11491.2	51811.2	359.8	79.8
ASB Bank	7.0	2822.4	8467.2	48787.2	338.8	58.8
Azər Trük Bank	5.5	2217.6	6652.8	46972.8	326.2	46.2
Bank Avrasiya	8.0	3225.6	9676.8	49996.8	347.2	67.2
Bank BTB	10.3	4132.8	12398.4	52718	366.1	86.1
Bank of Baku	10.5	4233.6	12700.8	53020.8	368.2	88.2
Bank Respublika	9.5	3830.4	11491.2	51811.2	359.8	79.8
Bank VTB	7.0	2822.4	8467.2	48787.2	338.8	58.8
ExpressBank	9.5	3830.4	11491.2	51811.2	359.8	79.8
Günay Bank	7.0	2822.4	8467.2	48787.2	338.8	58.8
Kapital Bank	6.5	2620.8	7862.4	48182.4	334.6	54.6
Muğanbank	9.5	3830.4	11491.2	51811.2	359.8	79.8
Naxçıvanbank	10.0	4032	12096	52416	364	84
Premium Bank	8.0	3225.6	9676.8	49996.8	347.2	67.2

Rabitəbank	10.0	4032	12096	52416	364	84
Turanbank	10.5	4233.6	12700.8	53020.8	368.2	88.2
Unibank	9.5	3830.4	11491.2	51811.2	359.8	79.8
Xalq Bank	6.0	2419.2	7257.6	47577.6	330.4	50.4
YapıKredi Bank	5.5	2217.6	6652.8	46972.8	326.2	46.2
Yelo Bank	10.0	4032	12096	52416	364	84
Ziraat Bank	7.0	2822.4	8467.2	48787.2	338.8	58.8

Note: Table was compiled by the author.

Thesis 7. There is a great need to educate the population in order to ensure the formation and efficient operation of the non-state pension system.

In order to assess the current state of the pension system in Azerbaijan and the level of satisfaction of citizens with this system, we conducted a survey through Google Survey. 552 respondents participated in that survey, which consisted of 12 questions. The survey included the following questions:

1. Do you have pension (social) insurance?
2. Are you satisfied with the state pension provision in Azerbaijan?
3. Are you satisfied with the pension amount?
4. In your opinion, should the retirement age be the same for women and men?
5. Do you consider it acceptable to increase the retirement age due to the changes made to the Law "On Labor Pensions"?
6. What do you think is an acceptable retirement age?
7. What are the factors that do not satisfy you in the state pension provision?
8. What is the amount of pension, will you be satisfied?
9. Do you know about private pension system?
10. Is there a need to form private pension system in Azerbaijan?
11. Would you like the formation of private pension system in Azerbaijan?
12. Which pension scheme would you prefer?

It is clear from the results of the conducted survey that the Azerbaijan people is dissatisfied with the state pension provision, pension age, pension amount and existing gaps in the legislation,

consider it necessary to form non-state pension provision and wants to participate in non-state pension provision along with the state pension provision.

The respondents emphasized that they do not have detailed information about non-state pension provision, but there is a need to form a non-state pension system in our country. Most of the respondents indicated that they prefer both state and non-state pension provision.

As a result of the conducted research and survey, it was determined that there is a great need to educate the people in order to ensure the efficient operation of the non-state pension system in Azerbaijan. For this, first of all, a series of trainings should be held in the mass media, as well as in higher education institutions, enterprises and trade unions.

MAIN CONCLUSIONS

The research conducted to strengthen the pension provision of the population in the field of liberalization of pension systems provides the basis for obtaining the following results:

- ✓ The world population is aging and this process is causing financial difficulties in the pension system of most countries. Therefore, most countries have been making relevant reforms in the pension system in recent years, and these reforms are more liberal;

- ✓ The pension system of any country develops depending on social, economic and historical conditions. This means that one country's pension system cannot be applied to another country without modification;

- ✓ There is no significant correlation between the efficiency of pension systems and their liberality (dirigiste). International experience proves that pension systems operate more efficiently when they are liberal;

- ✓ Based on the measurement of the level of liberality of the pension systems of 30 countries of the world over a 10-year period, it was determined that the pension system of Azerbaijan is dirigiste;

✓ Liberalization of the pension system has a positive impact on economic growth, the development of financial markets, and the increase in the amount of pensions;

✓ Reducing state pension costs, removing the restrictions on private pension fund investments, and reducing social insurance rates for employers have a significant positive impact on the development of the pension system;

✓ In countries with a liberal economy, social insurance payments for the employer and the employee are either absent or in small amounts;

✓ The relative level of pensions can be high in countries where the pension system is liberal and dirigiste, or in contrary;

✓ The ratio of the average monthly pension to the average monthly wage can be high in countries with both liberal and dirigiste pension systems.

✓ Poverty levels among pensioners may be high in countries with both liberal and dirigiste pension systems, or in contrary;

✓ The process of demographic aging in the world is also typical for our country. This creates difficulties in the efficient operation of the pension system and financial stability;

✓ Raising the retirement age has led to a decrease in the number of labor pensioners in Azerbaijan;

✓ Social insurance rates for employers in Azerbaijan are high. This leads to an increase in the level of informal employment. It is true that the level of informal employment is decreasing as a result of measures implemented by the government in recent years. However, the work done is not enough;

✓ Informal employment also affects the active-passive insured ratio in the pension system. This has created financial problems in the pension system of our country. As a result of measures taken to regularly increase the retirement age and prevent "hidden employment", this rate has been slightly increased;

✓ The current unsatisfactory level of the ratio between the number of insured persons and pensioners in our country will further increase the social burden of the state in the future;

✓ As the ratio of the pensionable population to the working-age population increases in Azerbaijan, the level of pension provision of the pensionable population by age decreases;

✓ Based on the conducted research, it was found that the weight of women in the labour force has been decreasing in recent years;

✓ The amount of pensions in Azerbaijan has increased in recent years. In our country, the ratio of the average monthly pension amount to the average monthly wage corresponds to ILO Convention No. 102, and the ratio of the average monthly amount of labour pension to the average monthly wage according to age corresponds to ILO Convention No. 128;

✓ SSPF can obtain additional financial resources by correctly and efficiently investing compulsory social insurance contributions. This will lead to an increase in pensioners' incomes and the level of well-being;

✓ As a result of the investment of the income from CSSIF in state bonds, notes of the National Bank and instruments for interbank credit, the income from CSSIF can increase twice during the year;

✓ 1% increase in the number of the population over 65 increases the volume of transfers from the state budget to the SSPF by 2.85%;

✓ CSSIF receipts will increase by 29.3% by 2030;

✓ The expenses of SSPF will increase by 44.8% by 2030;

✓ Currently, CSSIF revenues cover 79.36% of SSPF expenses in the best case, but according to the forecast calculations, in 2030, CSSIF revenues will be able to cover 71% of SSPF expenses in the best case;

✓ The amount of transfer from the state budget will increase, while the revenues from CSSIF will cover the expenses of SSPF by 8.36% less;

✓ Although the reforms implemented to eliminate informal employment have achieved an increase in the volume of revenues from CSSIF, in 2030 the revenues from CSSIF will cover the expenses of the SSPF by 8.36% less;

✓ The current situation in Azerbaijan's pension system makes it necessary to carry out liberal reforms;

✓ The level of awareness among the population about non-state pension provision in Azerbaijan is low.

Proposals over Azerbaijan

We consider it appropriate to implement the followings in the direction of improving the pension system, strengthening the social protection of pensioners and liberalizing the pension system in Azerbaijan:

1. Liberal reforms should be carried out in the pension system of Azerbaijan. When liberalizing the pension system, the current level of development of the country, demographic processes, including the mentality of the population, the implemented social policy, the forecasts made by international organizations should be taken into account;

2. In our country, it would be appropriate to create a non-state pension system as a complement to the state pension provision, rather than the complete privatization of the pension system. This will have a positive impact on the formation of a competitive environment in the field of pensions, socio-economic development, revitalization of the investment environment and the securities market in our country, and will also have a positive effect on the improvement of the social situation of pensioners;

3. In order to liberalize the pension system in Azerbaijan, first of all, a legislative framework should be created, and appropriate changes should be made to the existing legislative framework;

4. Non-state pension funds should be established in Azerbaijan, and their activities should be strictly controlled by the state;

5. Compulsory social insurance fees collected by SSPF should be invested correctly and efficiently;

6. In order to ensure the efficient operation of the non-state pension system in Azerbaijan, there is a great need to educate the population. For this, first of all, information on this topic should be shared in mass media and social networks, discussions should be organized, and series of trainings should be held in higher education institutions and trade unions;

7. In order to lower the ratio of the pension age population to the working age population in Azerbaijan, the involvement of women in the labour market and the level of employment should be increased.

8. When carrying out reforms in the state pension systems, first of all, measures such as preventing informal employment, increasing the number of salaried labour force, applying incentive mechanisms to increase employment, attracting the working age population to the country, and finally increasing the share of women in employment should be implemented.

9. As the ratio of the pension-age population to the working age population increases in Azerbaijan, the level of provision of the pension-age population with age-related labour pension decreases. Therefore, in order to ensure the access of the population to the labour pension, it is necessary to mitigate the conditions for retirement.

10. Although there is an “allocation” pension system based on individual account in Azerbaijan, the active-passive insured ratio is very important for our country. Therefore, the current level of the ratio between the number of insured persons and pensioners in our country should always be kept under state control;

11. Involvement of workers in compulsory social insurance leads to pension provision. Informal workers are deprived of pension security. Reforms should be continued in order to reduce the level of informal employment in our country. The people should be educated about the socio-economic consequences of informal employment. The more CSSIF are paid, the more people can benefit. The increase in CSSIF collections will increase both the costs of paying labour pensions and the costs of benefits at the expense of CSSIF;

12. Funds collected in individual accounts should be realized by depositing in different banks;

13. The mechanism for the use pension capital and inheritance should be formed in our country. It is appropriate to implement this mechanism strictly under state control. For this purpose, appropriate changes should be made to the Law of the Republic of Azerbaijan "On Labour Pensions".

14. Pension capital can be used in Azerbaijan under the following conditions:

- Implementation of operations those are not included in the compulsory medical insurance package;
- Payment of existing bank loan of high amount;
- Improving housing conditions or paying off a mortgage loan.

In our opinion, the implementation of mentioned reforms will lead to improve the sustainability of the pension system, more efficient functioning, strengthening the social protection of pensioners in our country and will have a positive impact on the socio-economic development.

Scientific works of the author

1. Abdullayeva, R.S., Həşimova V.X. Qloballaşma şəraitində Azərbaycanın pensiya siyasəti // “Qloballaşma və regional integrasiya” Respublika elmi konfransının materialları, - Mingəçevir Dövlət Universiteti: - 2016, - s. 113-115.

2. Həşimova, V.X. Pensiyaçıların həyat səviyyəsi və yoxsulluq həddi // Əmək və sosial problemlər üzrə elmi-tədqiqat və tədris mərkəzinin 20 illiyinə həsr olunmuş “Əmək, məşğulluq və sosial müdafiənin aktual məsələləri” mövzusunda beynəlxalq elmi-praktik konfransın materialları: - 2017, - s. 178-180.

3. Abdullayeva, R.S., Həşimova, V.X. Pensiya sisteminin liberallıq-inzibətilik səviyyəsi və sosial-iqtisadi inkişaf // Kollektiv monoqrafiya İS(S)İ – 2015: İqtisadiyyatın liberallıq potensialı (Nazim Müzəffərlinin elmi redaktəsi ilə): - 2017, - s. 136-163.

4. R.S.Abdullayeva, Həşimova, V.X. İqtisadi inkişafın ictimai rifaha təsrinin qiymətləndirilməsi // Strateji iqtisadi islahatlar: qabaqlayıcı vergi siyasəti (Beynəlxalq elmi-praktiki konfransın materialları): - 12 oktyabr 2017, - s. 84-90.

5. Həşimova, V.X., Əsədov, D.E. İşçiliyin dövlət tənzimlənməsinin qiymətləndirilməsi metodları // AMEA İqtisadiyyat İnstitutu “Elmi əsərlər”: - 2017, - №5, - s. 88-96.

6. Həşimova,V.X. Azərbaycanda pensiyaçıların sosial vəziyyətində baş verən dəyişikliklərin qiymətləndirilməsi // “İqtisadi

artım və ictimai rifah” Beynəlxalq elmi-praktik konfransı, - Bakı: - 2018, - s. 694-698.

7. Həşimova, V.X. Pensiya sisteminin konseptual əsasları // - Bakı: AMEA-nın Xəbərləri, İqtisadiyyat seriyası, - 2019. №1 (yanvar-fevral), - s. 117-125.

8. Həşimova, V.X. Pensiya sisteminin libarallaşdırılmasının iqtisadi təsirlərinin konseptual əsasları // - Bakı: AMEA-nın Xəbərləri, İqtisadiyyat seriyası, -2019. №6 (noyabr-dekabr), - s. 51-60.

9. Абдуллаева, Р.С., Гашимова, В.Х., Махмудов, С.М. Влияние неформальной занятости на пенсионное обеспечение // VII Международной научно-практической конференция "Актуальные проблемы социально-трудовых отношений", посвященной 60-летию основания Института Социально-Экономических Исследований ДФИЦ РАН, - Махачкала: - 15 декабря, - 2019, - с. 49-52.

10. Həşimova, V.X. Azərbaycanca pensiya sisteminin liberallaşdırılmasına təsir göstərən iqtisadi amillər // - Bakı: İqtisadi Artım və İctimai Rifah, - 2021. № 1, - s. 91-101.

11. Həşimova, V.X. Pensiya sistemlərinin liberallıq səviyyəsinin ölçülməsinin ölkələrarası müqayisəli təhlili // - Bakı: AMEA-nın Xəbərləri, İqtisadiyyat seriyası, - 2021. №6 (noyabr-dekabr), - s. 14-21.

12. Hashimova, V.Kh. Demographic factors influencing the formation of the pension system in Azerbaijan // - Россия: Экономика и предпринимательство, - 2021. №12, - p. 638-641.

13. Abdullayeva, R.S. Hashimova, V.Kh. The role of demographic determinants in the liberalization of the pension system: cross-country analyze // TUDOMÁNYOS MOZAIK 20. Kötet Magyar Tudomány Ünnepe konferenciakötet Kultúrák találkozására a tudományban - Jövőformáló tudomány, - Budapest, - 2021, - p.168-179.

14. Гашимова, В.Х. Оценка социально-экономических реформ в пенсионной системе Азербайджана // «Технологии социальной работы в различных сферах жизнедеятельности» VII

международной научно-практической конференция, - Россия, Махачкала: - 12 мая, - 2022, -с. 241-246.

15. Гашимова, В.Х. Социальные факторы влияющие на либерализацию пенсионной системы в Азербайджане // X Международной научно-практической конференция «Актуальные проблемы социальных и трудовых отношений», посвященной 300-летию образования Российской Академии Наук, - Махачкала, - 16 декабря, -2022, - с. 178-181.

16. Həşimova, V.X. Azərbaycan Respublikasında pensiyaçıların sosial vəziyyətinin yaxşılaşdırılması istiqamətləri // Ulu Öndər Heydər Əliyevin 100 illiyinə həsr olunmuş “İqtisadiyyatın idarəedilməsinin müasir problemləri və perspektivləri” mövzusunda Respublika Elmi Konfransının materialları: Azərbaycan Dövlət Neft və Sənaye Universiteti PHŞ, Elm və Təhsil Nazirliyinin İqtisadiyyat İnstitutu, - 23-24 noyabr, 2023. - s. 253-258.

17. Həşimova, V.X. Azərbaycanda pensiya sisteminin təkmilləşdirilməsi istiqamətləri // - Bakı: İqtisadi Artım və İctimai Rifah, - 2024: Xüsusi buraxılış, - s. 115-126.

The defense will be held on 21 June 2024 at 11:⁰⁰ o'clock at a meeting of the Dissertation council ED 1.10 of Supreme Attestation Commission under the President of the Republic of Azerbaijan operating at Institute of Economics operating under the Ministry of Science and Education of the Republic of Azerbaijan.

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The dissertation can be found in the library of the Institute of Economics of the Ministry of Science and Education of the Republic of Azerbaijan.

Electronic versions of the dissertation and its abstract are available on the official website of of the Institute of Economics of the Ministry of Science and Education of the Republic of Azerbaijan (economics.org.az)

The abstract is sent to the necessary addresses on 13 May 2024.

Signed for print: 01.05.2024
Paper format: A5
Volume: 38543
Number of hard copies: 20