

DIRECTIONS OF DEVELOPMENT OF THE PENSION PROVISION SYSTEM OF CITIZENS IN THE REPUBLIC OF UZBEKISTAN

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ABSTRACT-- *This scientific article is devoted to the study of the pension system of citizens in Uzbekistan. The article studies the stages of evolution of the national pension system, the current state and development trends of pension provision, and identifies problems in the pension system of the republic. Based on the results of the study, scientific proposals and practical recommendations aimed at developing the pension system of citizens of the Republic of Uzbekistan have been developed.*

Key words-- *pension, pension provision, old-age pension, salary, seniority, pension fund, pensioner, pension amount, funded pension system, demography, income, expenses, financial stability.*

I. INTRODUCTION

Social protection of the population is an urgent task of any state and society. Therefore, people's lifestyle, their moods are closely related to the level of social security. According to the United Nations (UN) “45 percent of the world's inhabitants receive at least one of the types of cash payments within the framework of social protection systems. The remaining 55 percent (that is, up to 4 billion people) do not receive such payments”[1]. The proportion of the population covered by social protection systems depends on the particular type of system and on the region.

At the same time, the system of social protection of the population includes the pension system. Pensions are a priority for most developed and developing countries. Studies show that “globally, old-age pensions receive 68 percent of people of retirement age, which is associated with the development of both funded and insurance pension benefits in many middle and low income countries” [2], and is also the result of increased payments of both insurance and social pensions in many middle and low income countries of the world. Throughout work, when good health and the ability of working productively are the norm for the majority, people contribute to national development and progress. And it would be fair not to forget about them in old age, providing them with well-being and prosperity.

In the World Social Security Report 2017–2019, “retirement costs and other benefits for older people constitute average 6,9 percent of GDP, and this indicator varies significantly from region to region” [3]. The report notes that the level of benefits is often low and insufficient to save older people from poverty. To solve this problem, it is important to reform and further develop the pension system of citizens.

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In order to implement the priority areas of liberalization of the entire sphere of life and modernize the economy, create conditions for further and comprehensive development, and further increase the effectiveness of the reforms being implemented in Uzbekistan, an Action Strategy was adopted in five priority areas for the development of the Republic of Uzbekistan in 2017-2021 [4].

The Action Strategy has developed priority areas for the development of the social sphere, including the main areas related to social security and the further development of the pension system. In particular, the further development and improvement of the system of medical and social assistance to pensioners, people with disabilities, lonely elderly and other vulnerable categories of the population to ensure their full functioning. This idea is supported by respectable international organizations such as the International Labor Organization (ILO), the International Confederation of Trade Unions (ITUC), the Pan-European Regional Trade Union Council (ARSP), and the International Organization of Employers (IOE).

The discussion on the reform of pension systems has gained international scope after the publication of the World Bank's report on "Preventing the Global Aging Crisis" in 1994. The main problem which is considered in the report, is the increase in the life expectancy of the population and, as a result, the predicted deficit of pension funds for payments. The report indicates that by 2030 the number of people over the age of 60 will increase by 900 million compared to 1990 and reach 1.4 billion [5]. In recent years, in Uzbekistan, in the context of increasing the average life expectancy of the population, ensuring the financial stability of the pension system, improving the pension system is an urgent task.

II. LITERATURE REVIEW

Research and solution of issues related to pension provision was carried out by scientists from far abroad countries: O.Bismarck, U.Beveridge, J.Peng, E.Palmer, F.William, E.Whitehouse, etc. The problems associated with the pension system were investigated by scientists from neighboring countries: N.Borisenko, V.Roik, S.Brovchak, D.Gusakov, A.Soloviev, A.Fedotov, V.Romanchenko, A.Shemetov, S.Orlov and others. Scientists of Uzbekistan such as A.Vakhabov, N.Mazhidov, T.Malikov, M.Ziyadullaev, D.Rustamov, G.Kasimova, Sh.Davronov and others studied the issues of state pension provision.

The first distributional pension system based on the principle of generational solidarity was introduced by O.Bismarck in 1889 in Germany. Then social insurance was occurred compulsory and pensions were provided at the expense of insurance contributions of workers and employers. W. Beveridge created the foundation for social security in the UK in 1942. In his studies, the principle of the need for state guarantees for social protection of the population was pronounced, the provision of social insurance for hired workers by employers and workers should have additional private insurance [6]. The scientific work of the American scientist J. Peng investigated the issues of effective management of pension funds [7]. On the part of E. Palmer, a three-level pension system was studied, which includes a mandatory-distributive, mandatory-funded and individually voluntary funded pension systems [8]. F. William paid particular attention to the development of private pension funds [9]. The studies of E. Whitehouse reflect the development of a multi-level pension system [10].

Also, research on the development of the pension system was dealt with by scientists from neighboring countries. The scientific works of N. Borisenko reflect the features of the pension provision of citizens,

demographics of the population, and foreign experience of the pension system [11]. V.Roik investigated the issues of social insurance, which form the basis of pension provision [12]. S.Brovchak comparatively analyzed the experience of pension provision in Russia and foreign countries [13]. D.Gusakov revealed the history of formation and features of pension provision and social insurance [14]. In the scientific works of A.Solovyov, demographic factors affecting the pension system were studied [15]. A.Fedotov studied the history of the emergence of the pension system and the experience of foreign countries in this regard [16]. In the studies of V. Romanchenko, it reveals international experience of pension system development and possibilities of its use [17]. In the monograph by A. Shemetov and S.Orlov, the current state of the Russian pension system, models of the pension system, their features and principles were studied and analyzed, problems and causes in pension systems were identified, scientifically based proposals and recommendations on positive ways to solve problems were developed [18].

As well as Uzbek scientists investigated the issues of reforming and improving the pension system. In particular, the theoretical foundations of the development of the pension system and non-state pension provision, as well as ensuring the financial sustainability of national pension system, were studied by A.Vakhabov and N.Mazhidov [19]. In the scientific works of T.Malikov, the essence, content, types and role of pensions in the system of social protection of the population were studied [20]. In the dissertation of M.Ziyadullaev, the pension system by age and its legal basis were improved [21]. In the monograph of D. Rustamov, the scientific and theoretical foundations of ensuring the financial stability of the Pension Fund of Uzbekistan were studied [22]. In the scientific works of G. Kasymova, the role and importance of pension provision in the system of social protection of the population, financial risks in pension provision and effective management of pension funds have been studied [23]. On the part of Sh. Davronov, the state pension system was improved, including the development of effective mechanisms to stimulate the continued participation of citizens in the social insurance system based on ensuring interest in achieving a decent pension for the self-employed category of the population [24]. However, in Uzbekistan the stages of the development of the pension system, the directions of the Concept of reforming the state pension system, the introduction of a three-level pension system based on international best practices are not sufficiently disclosed.

III. RESEARCH METHODOLOGY

The basis of methodological research is the principles and patterns of the pension system of citizens. The study of the pension system of citizens is based on the collection, processing and analysis of information about the pension system, determining the factors that affect it. In the study there are used methods such as generalization, logical analysis, synthesis, induction and deduction, a systematic approach, correlation and regression analysis.

IV. ANALYSIS AND RESULTS

The pension system is one of the main directions of the state policy of social protection and provides for a set of organizational, legal, social and economic measures aimed at providing material and social support to elderly people, disabilities and survivors.

Pension has a long history. The pension system as part of the social system originated during the Roman Empire (44-100 BC) at the head of J. Caesar. At the same time, "for the first time, servicemen were granted pensions at

the expense of the emperor's own funds (so that they could improve their social status in old age), which caused serious financial difficulties" [25]. It should be noted, "that in many sources it is alleged that pensions were invented by J. Caesar for the military" [26].

The legal basis for the establishment of the pension system of the Republic of Uzbekistan can be divided into the following stages. *The first stage is 1917-1956.* This period is characterized by the emergence of the concept of "pension". In 1930, the Regulation "On Pensions and Social Insurance Benefits" was developed, according to which the right to pension provision was reserved only to persons who received labor injuries or became disabled due to occupational diseases. The peculiarity of this stage is that there was no single pension system. Pensions were granted on the basis of a separate procedure determined for each industry separately [21].

The second stage is 1956-1990. On July 14, 1956, the USSR Law "On State Pensions" was adopted, on the basis of which workers and employees, military personnel, disabilities and survivors had the right to a state pension [27]. Pensions were granted: to men - at the age of 60 and with at least 25 years of work experience; and women - at the age of 55 and at least 20 years of work experience [28]. And also, a procedure has been developed for the payment of pensions to military personnel and their families. On May 15, 1990, the Law on Pension Provision of Citizens in the USSR was adopted and the following types of pensions were introduced to citizens: labor pensions (old-age pensions, disability, survivor and pensions for length of services) and social pensions [29]. All disabled citizens who did not have the right to a retirement pension had the right to a social pension, regardless of social status.

The third stage is 1991-2002. Since 1991, the national pension system began to operate. In accordance with the Decree of the Cabinet of Ministers under the President of the Uzbek SSR dated January 14, 1991 No. 9, the Uzbek Republican branch of the USSR Pension Fund was organized. In 1993, the Social Insurance Fund under the Cabinet of Ministers of the Republic of Uzbekistan was established. Since 1994, the Law of the Republic of Uzbekistan "On state pension provision of citizens" entered into force. A list of industries, institutions, jobs, professions, positions and indicators of the right to retirement on preferential terms was developed. In accordance with the Decree of the Cabinet of Ministers of the Republic of Uzbekistan dated June 24, 1994 No. 319 "On the Procedure for Assigning and Paying Benefits to Disabled Persons from Childhood, Elderly and Disabled Citizens," social pensions for citizens were abolished, social benefits were introduced for citizens who have no seniority [21]. Since 2001, the Pension Fund under the Ministry of Social Security of the Republic of Uzbekistan has been transformed into an Off-budgetary Pension Fund of the Republic of Uzbekistan and compulsory payments to an Off-budgetary Pension Fund have been equated with state taxes and fees.

The fourth stage is 2003-2009. According to the decision of the Government of the Republic of Uzbekistan dated October 21, 2004 No. 490, from January 1, 2005, the Off-budgetary Pension Fund of the Republic of Uzbekistan was transformed into an Off-budgetary Pension Fund under the Ministry of Finance of the Republic of Uzbekistan. Since 2005, in order to create conditions for an additional increase in the welfare of pensioners, a funded pension system has been organized. On the basis of the Decree of the President of the Republic of Uzbekistan dated December 30, 2009 "On measures to further improve the pension system of citizens", territorial subdivisions of the Off-budgetary Pension Fund have been created. This will ensure control over the targeted use of funds allocated for the pension provision of citizens of the republic.

The fifth stage is 2010-2019. During this period, all pension departments of the Ministry of Labor and Social Protection and medical and labor expert commissions were transferred to the off-budget Pension Fund. The organizational structure of the Off-budgetary Pension Fund under the Ministry of Finance of the Republic of Uzbekistan was reorganized. In 2011, the Regulation on the Procedure for Appointment and Payment of State Pensions was adopted. In accordance with this Regulation, the procedure for the appointment and payment of state pensions, the resolution of legal issues related to the pension provision of citizens and the introduction of pension benefits, the allocation and payment of state pensions, the application of pension benefits and other legal issues related to pension provision of citizens was determined. The Regulation "On the procedure for paying pensions to working pensioners" was adopted. In 2012, the centralized "PC Pension" program for the designation, payment and reporting of pensions and social benefits was developed and implemented. This software is an automated information system that provides effective electronic interaction between all divisions of the Pension Fund using modern innovative software products, creating a single centralized database and providing users with complete, reliable and timely information. In the framework of the PC "Pension" program, in 2013-2018, an electronic exchange of information was carried out with the Central Bank of the Republic of Uzbekistan and commercial banks, a medical and labor expert commission, tax authorities, justice authorities, the Treasury, etc. Since 2016, individual accounting of information on insurance contributions transferred to the Off-budgetary Pension Fund. Since 2016, citizens of the Republic of Uzbekistan working abroad and certain categories of people whose working hours cannot be recorded, a procedure has been developed for paying insurance contributions to an Off-budgetary Pension Fund, as well as a procedure for recording seniority and the amount of earnings for calculating their pension. Starting from July 1, 2016, the minimum length of service required for granting pensions was increased from 5 to 7 years.

In order to radically improve the system of paying pensions and social benefits, to ensure unconditional protection of the rights and legitimate interests of pensioners, starting in February 2017, all types of pensions are paid in cash in the republic in full without restrictions.

In 2018, a draft Concept for reforming the state pension system was developed and put up for public discussion. It should be noted that in accordance with the current legislation, pensioners working in the country were paid 50% of the pension amount. However, from January 1, 2019, pensions to all working pensioners are paid in full and increased the maximum amount of earnings accepted for calculating the pension from eight times to ten times the minimum wage. From January 1, 2019, in accordance with the concept of improving tax policy, insurance contributions (8%) of citizens to the Off-budgetary Pension Fund withheld from the income of citizens in the form of wages are canceled.

Based on the foregoing, the stages of formation and development of the pension system in Uzbekistan can be described as follows (Figure 1).

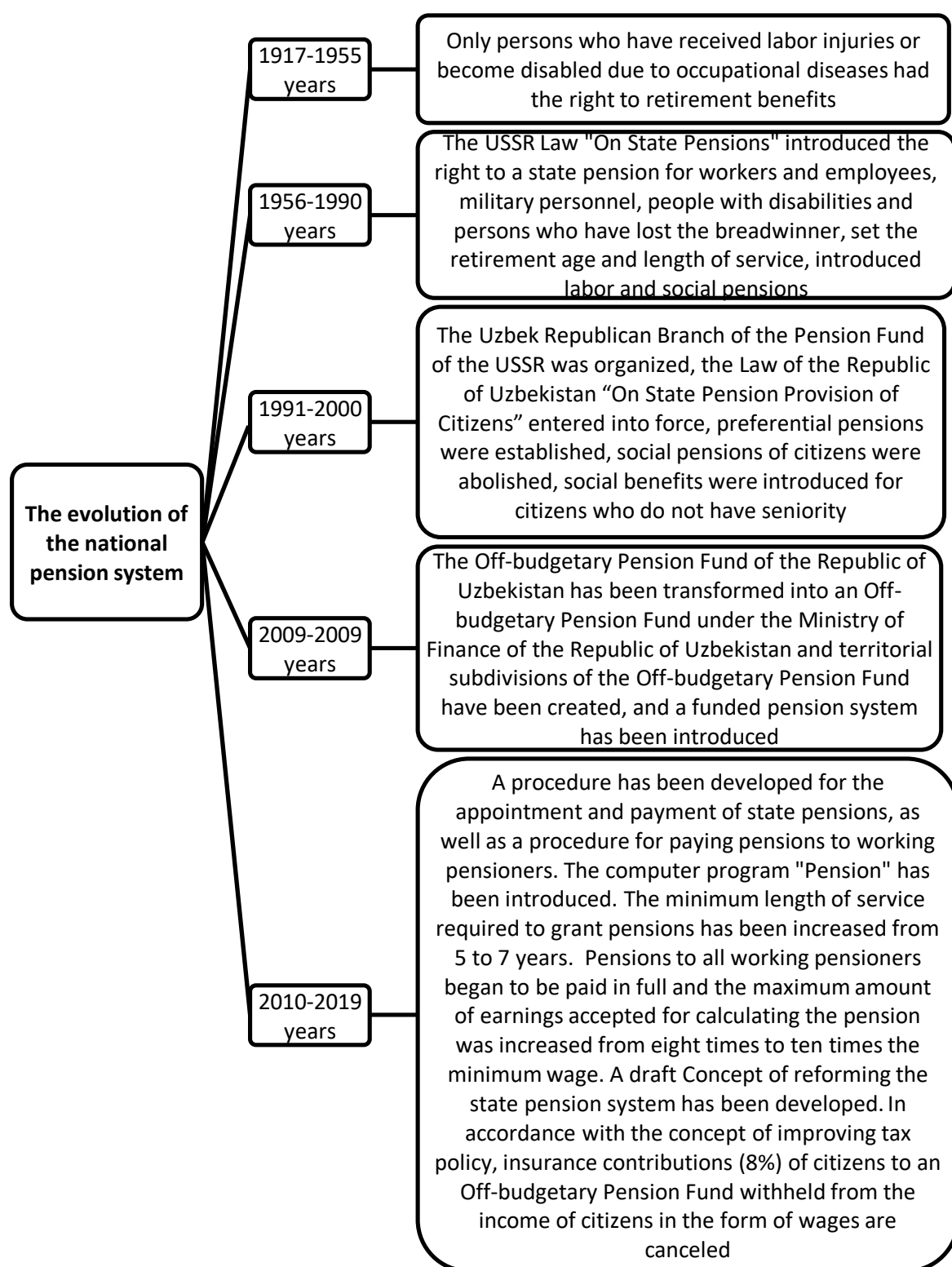


Figure 1: Stages of evolution of the national pension system

Today, the pension system of citizens in Uzbekistan is represented by two levels: the first is a “distribution” pension system based on generational solidarity, and the second is a funded pension system.

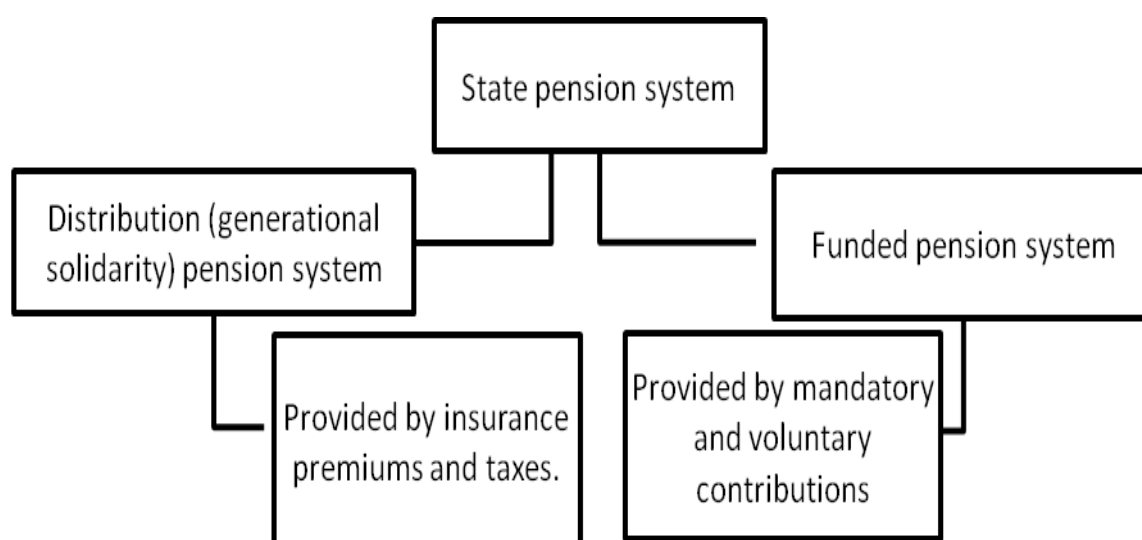


Figure 2: Organizational structure of the pension provision system of citizens in Uzbekistan [30]

1. “Distribution” pension system based on generational solidarity. The essence of this system is that the social insurance pension system consists of “distribution” elements based on the principle of “generational solidarity”. At the same time, employers and workers pay mandatory contributions and insurance contributions to the Pension Fund [24]. At the expense of the accumulated funds, pensions are paid to pensioners and this process continues continuously. For example, generation T retires, generation T + 1 pays for it, and for T + 1 pension will be paid by T + 2, and so on. Thus, no fund is created and no one pays for itself. Anyone who makes contributions to the Pension Fund means that it will be a source of pensions for previously retired citizens.

2. Accumulative pension system. In accordance with the Law of the Republic of Uzbekistan dated December 2, 2004 “On the funded pension provision of citizens”, a funded pension system was introduced in the country. The goal is to create a source of income for retirees in addition to existing retirement benefits and increase their well-being. In this system, deductions of citizens are accumulated before retirement and paid after retirement. At the same time, citizens' savings are formed through mandatory and voluntary contributions. Thus, both pension systems in Uzbekistan are aimed at creating conditions for further improving the welfare of pensioners.

It should be noted that both the distribution and funded pension systems have advantages and disadvantages. The purpose of the distribution pension system is to implement a mechanism of protection against poverty, but at the same time it is not adapted to demographic changes. The purpose of the funded pension system is economic efficiency, which is characteristic of countries with market economies. However, a funded pension system cannot be instantly implemented and it is highly sensitive to changes in financial markets.

The peculiarity of the "distribution" pension system is associated primarily with demographic factors. In 2010-2019, the population of Uzbekistan increased by 5,254,1 thousand people, labor resources - by 3383,4 thousand people, economically active population - by 3002,1 thousand people, and the number of recipients of pensions and social benefits - by 625,1 thousand people (Table 1)

Table 1: Dynamics of changes in the number of recipients of pensions and social benefits in the total population of Uzbekistan (in thousands)

№	Indicators	Years						
		2010	2012	2014	2016	2017	2019	2019
1.	Population	28001,4	29555,3	30492,8	31575,3	32120,4	32656,6	33255,5
2.	Labor resources	16726,0	17564,3	18048,0	18488,9	18666,3	18829,6	20109,4
3.	Economically active population	12286,6	12850,1	13505,4	14022,4	14357,3	14641,7	15684,3
4.	Employment in the economy	11628,4	12223,8	12818,4	13298,4	13520,3	13273,1	15288,7
5.	Pensions and social benefits	3036,7	2903,5	2947,6	3141,0	3296,5	3429,3	3661,8
	Of them:							
5.1.	Old age pensions	2092,0	2118,1	2181,7	2369,3	2481,4	2582,8	2741,0
5.2.	Disability pension	525,6	397,2	371,3	351,5	359,2	366,2	381,5
5.3.	Survivor pensions	190,9	169,81	160,7	161,22	166,8	168,7	179,6
5.4.	Social benefits	228,2	218,4	233,9	259,0	289,1	311,6	359,7

Source: State Committee of the Republic of Uzbekistan on Statistics.

This trend indicates a high birth rate due to natural population growth and an increase in life expectancy. For example, the number of births in 2018 amounted to 768,5 thousand, which is 21 percent more than in 2010. Life expectancy in 2010 was 73 years, and by 2018 - 74 years. The main reason for this is the provision of medical and preventive and patronage assistance to the population in the country, the protection of the health of mothers and children, the result of public events among people promoting a healthy lifestyle and physical activity. In some developed and developing countries, this figure is much higher (Table 2). In particular, in 10 developing countries, life expectancy was 81,8 years, compared with 72,8 years in 10 developing countries. The life expectancy of a person is affected by a number of factors. In particular, people's lifestyles, genetics, environment and health systems are important factors. Life expectancy also depends on economic, political, social and other factors.

According to the World Health Organization, today's progress has led to people becoming more immobile in their lifestyle and this is the cause of many medical and social problems. This is one of four causes of death worldwide. For example, 25-30% of all cases of breast and colon cancer, diabetes and coronary heart disease contribute significantly to this [31]. To prevent this social problem, it is important to do 30-40 minutes of exercise every day and walk 2-3 kilometers a day. This allows the body to protect itself from serious diseases such as digestion, heart attack, stroke and cancer, providing oxygen and improving metabolism.

Table 2: The average retirement age and life expectancy in 2018

№	Developing countries			The developed countries		
	The country	Retirement age	Life expectancy	The country	Retirement age	Life expectancy
1.	China	58	76,4	Japan	65	83,9
2.	Armenia	63	74,8	Switzerland	64,5	83,5
3.	Georgia	62,5	74,5	Australia	67	83,1
4.	Uzbekistan	57,5	74	France	65	82,7
5.	Belarus	59,1	73,1	Canada	65	82,5
6.	Azerbaijan	62,5	72,1	South Korea	60	82,4
7.	Russia	58,1	71,2	Great Britain	62,5	81,7
8.	Tajikistan	60,5	71,2	Germany	67	81,2
9.	Kyrgyzstan	60,5	71,1	USA	67	79,5
10.	Kazakhstan	61	70	Estonia	62	77,7

Source: Rating of countries in terms of life expectancy. United Nations Development Program (UNDP)/ United Nations Development Programme (UNDP). Life Expectancy Index 2018. <https://gtmarket.ru/ratings/life-expectancy-index/life-expectancy-index-info>.; Pension benefits and social insurance in the CIS, Baltic countries and Georgia in 2019. International Association of Pension and Social Funds. - M. No. 25 (26) 2019. Bulletin. - S. 14-16.

The share of recipients of pensions and social benefits in the total population was 9.8% in 2012, 10,3% in 2017 and 11% in 2019 (Table 1). This indicates an increase in the share of persons of retirement age in the total population and the number of applications for retirement. For example, since 2014, there has been an increase in the number of applications for pensions (the average annual increase is more than 20,000 citizens) and by 300,000 by 2025 [32]. The main increase in the number of applications for the appointment of old-age pensions is associated with the achievement of the generally established retirement age by citizens born during the high birth rate ("baby boom" in the 50-60s). As a result of improving the mechanism for calculating pensions, increasing the life expectancy of the population and increasing the number of applications for pensions every year, paying full pensions to all working pensioners, the Pension Fund expenses tended to increase. In particular, the expenses of the Pension Fund in 2019 amounted to 26,6 trillion. soums, which is 5.3 times more than in 2010 (Fig. 3). However, there is a downward trend in the share of Pension Fund expenditures in the country's GDP.

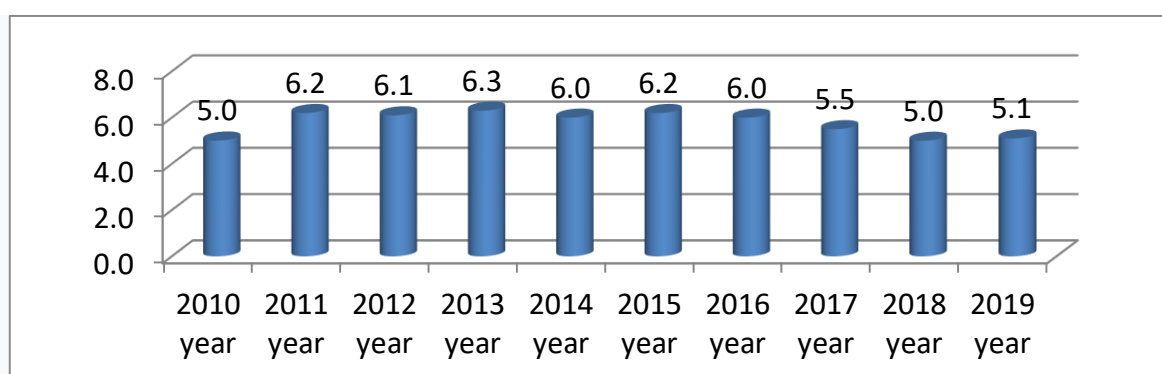


Figure 3: The share of the expenses of the Pension Fund in gross domestic product (in%)

Source: State Committee of the Republic of Uzbekistan on Statistics.

In particular, the share of Pension Fund expenditures in the country's GDP in 2010-2019 amounted to an average of 5,7%, and since 2013, a downward trend has been observed. This can be explained by the fact that the GDP growth rate exceeds the growth rate of the Pension Fund expenses and is a positive factor in terms of economic development.

Retirement age is one of the main indicators of the pension system of citizens. In Uzbekistan, men have the right to an old-age pension - upon reaching 60 years of age and at least 25 years of work experience, women - upon reaching 55 years of age and at least 20 years of employment [33]. However, in the world the average retirement age for men and women averages 62 years. In Uzbekistan, this figure is 57,5 years. In some developed and developing countries, the retirement age is much higher than in Uzbekistan (Table 2). When establishing a retirement age, factors such as life expectancy, social policy, the country's economic development, job creation and employment, as well as the welfare of the population should be taken into account. Based on the foregoing, in the future it is advisable to gradually increase the retirement age (every 6 months per year) to 58 years for women and up to 63 years for men in Uzbekistan. This will positively affect the efficiency and financial sustainability of the national pension system.

In 2019, 60,4% of the total population was made up of labor resources, which is 0,74 percentage points more than in 2010. According to this ratio, Uzbekistan has a full labor force and its reserves are increasing. This is also related to the age composition of the population, which is explained by the increase in the number of working age and can be considered as a positive factor. However, this trend shows the need to create 4-5 million jobs over the next 5-6 years. Otherwise, economically active segments of the country will leave the country massively and this process will have a negative impact on the economy. In the long term, there may be some problems with providing them with state pensions and social benefits.

The total number of economically active population of Uzbekistan in 2010 was 12.2 million people and by 2018 14,6 million people. However, in 2018, about 4,8 million people or 32.8% of the economically active population made mandatory insurance contributions to the Off-budgetary Pension Fund. According to the ILO requirements, for the sustainable development of the citizens' pension system, the ratio of insurance premium payers to pensioners should be 4 to 1 [34]. However, in 2018, this indicator in Uzbekistan was 1,5 to 1, which is almost 2,5 times lower than the established norm.

The effectiveness of the above-mentioned mechanism is affected by the weakened relationship between the amount of the pension received and the contributions (the formation of the Pension Fund's income in accordance with the established procedure) of the employee performing social work in the company. An important factor is the minimum length of service required for awarding pensions. In the world pension practice, certain work experience is required to obtain a minimum pension of a certain type. For example, ILO Convention No. 102 "on minimum social security standards" States that the minimum length of service required for an age pension is 15 years. In many countries, including the Commonwealth of Independent States (CIS), the required minimum length of service is 10-15 years (figure 4).

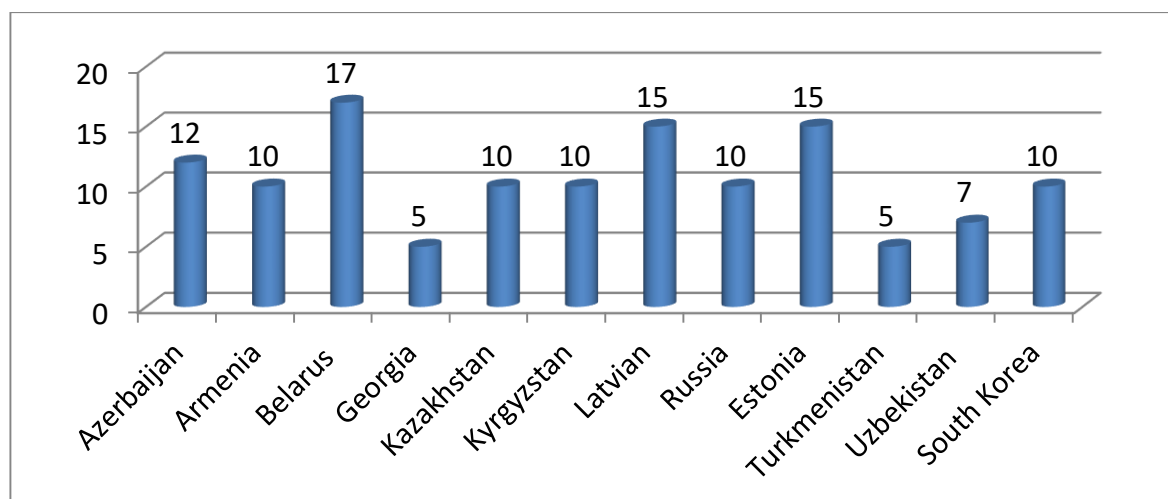


Figure 4: Minimum length of service required for the appointment of an old-age pension (year)

Source: Pension and social insurance in the CIS, Baltic countries and Georgia in 2019. International Association of Pension and Social Funds. No. 25 (26) 2019. Bulletin. - P. 14-16.

Persons who do not have sufficient work experience to receive pensions in Uzbekistan are assigned an old-age pension in proportion to their experience if they have at least 7 years of work experience. This means that in order to receive a pension, work experience must be at least 7 years. If the work experience of a citizen is absent or is less than 7 years, in these cases, women will receive the right to age benefits at the age of 60 years, and men at the age of 65 years.

It should be noted that persons who have worked for only 7 years and have made a minimum contribution to the formation of Pension Fund income over their entire working life, receive the right to receive a pension. The establishment of a minimum 7 years requirement for seniority affects the participation of citizens in state social insurance and does not encourage them to have more seniority in the future to increase pensions. For example, at present, the difference in the amount of a pension with an average level of earnings for a man with 30 years of experience (with the required 25 years of experience) and a man with 10 years of experience (with a minimum of 7 years) amount to only approximately 220-250 thousand sums [37]. This will require a step-by-step increase in

the minimum length of service required to assign an old-age pension and bring it closer to the standards established by the International Labor Organization Convention No. 102 “On Minimum Welfare Standards”.

At the same time, a small, although insignificant, low length of service will also lead to a proportional reduction in the size of pensions. This is due to the fact that the size of pensions depends mainly on the size of wages and length of service and consists of the following components:

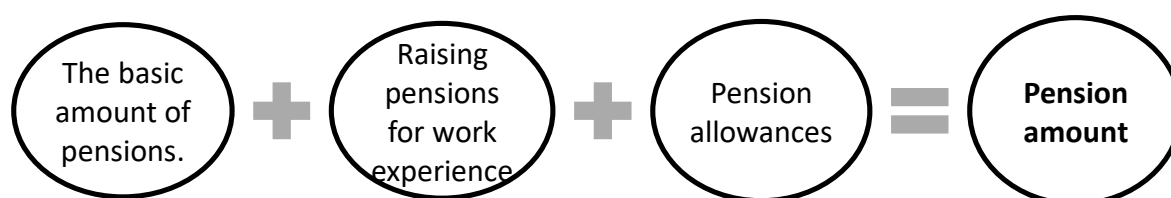


Figure 5: Formation of the amount of pension

1. The basic amount of pensions. Earnings for calculating a pension are taken for any five consecutive years (at the choice of the one applying for a pension) during the last ten years of work, regardless of any breaks in work. Earnings for calculating pensions are recalculated to bring the earnings of past years to the level of earnings on the day the pension is appointed in the manner determined by the Cabinet of Ministers of the Republic of Uzbekistan. The average monthly earnings for calculating the pension is determined by dividing the total amount of the recalculated earnings for sixty calendar months of work in a row by sixty. The basic amount of old-age pensions is 55 percent of the average monthly income accepted for calculating pensions, but not less than 100 percent of the officially established minimum age pension.

2. Raising pensions for work experience. For each full year of work in excess of the required (25 years for men and 20 years for women) for granting a pension, the basic amount of old-age pensions increases by 1 percent of the average monthly earnings accepted for calculating the pension.

3. Pension allowances. Disabled war group I - 150 percent of the base pension calculation; invalids of war of group II - 125 percent of the base value of calculating pensions; visually impaired group I - 100 percent of the base pension calculation; disabled people of group I - 75 percent of the basic amount of calculating pensions; for single disabled people of group II - 75 percent of the basic amount of calculating pensions; to participants in the war and persons equated with them - 50 percent of the basic amount of calculating pensions; to persons who worked and performed military duties in the rear during the war of 1941-1945 - 30 percent of the base pension calculation.

This means that the size of pensions mainly consists of the basic size of the pension and the increase in pensions for work experience. The basic amount of the pension is directly related to the size of the salary. In 2010, the average salary in Uzbekistan was 318,1, in 2015 – 478,7, and in 2016 – 590,5 US dollars, but since 2017 this indicator has significantly decreased due to a change in the national currency in relation to foreign exchange rate. In particular, in 2018, these indicators tended to decrease: the average salary was \$ 219,6, and the average pension was \$ 75,7. In 2018, the average monthly salary and pensions in Uzbekistan are almost in last place compared to the CIS countries (Table 3).

Table 3: The average monthly salary in 2010-2018 (in US dollars)

Countries	Years
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	2010	2011	2012	2013	2014	2015	2016	2017	2018
Azerbaijan	412,8	461,2	507,1	541,9	567,0	452,6	313,2	306,9	317,7
Armenia	274,8	290,2	281,8	357,6	381,3	386,3	363,0	404,2	355,2
Belarus	406,6	338,9	439,2	564,2	598,8	413,1	361,4	425,7	449,4
Georgia	335,2	377,2	449,0	464,8	437,8	389,5	397,2	454,8	420,8
Kazakhstan	526,5	613,8	679,4	717,2	672,5	568,4	417,6	462,6	398,2
Kyrgyzstan	156,4	201,9	228,3	234,1	229,0	206,0	212,4	227,9	230,0
Latvia	838,8	918,4	882,6	949,1	985,1	907,2	953,4	1046,5	1442,6
Lithuania	657,0	705,8	672,7	903,6	868,9	789,7	859,0	949,3	1054,8
Russia	681,6	796,2	857,1	936,3	855,8	560,2	548,7	671,1	652,3
Tajikistan	80,8	95,9	116,6	145,9	165,3	142,5	122,7	134,3	129,5
Uzbekistan	318,1	323,1	559,3	574,4	436,4	478,7	590,5	290,7	219,6
Ukraine	282,0	330,5	378,7	408,5	293,3	192,5	202,9	272,8	312,2
Estonia	1049,3	1172,0	1149,0	1314,5	1289,3	1289,3	1271,9	1379,8	1466,3

Source: Dynamics of social indicators in the CIS countries, Georgia and the Baltic states in 2000-2018.
International Association of Pension and Social Funds. – Moscow. – P. 28-29.

This indicates the need to increase wages and pensions in order to further improve the welfare of the population.
This trend shows that wages and pensions in Uzbekistan are relatively small and negative in terms of providing decent living conditions for the population.

Table 4: The average monthly pension in 2010-2018 (in US dollars)

Countries	Years								
	2010	2012	2014	2016	2017	2019	2019	2010	2012
Azerbaijan	140,5	183,3	193,5	217,2	221,2	172,4	120,4	121,0	130,9
Armenia	72,5	72,6	73,9	71,1	80,8	79,0	78,0	84,2	83,6
Belarus	195,3	167,7	225,3	246,0	257,6	172,6	148,5	162,6	178,8
Georgia	44,9	56,3	68,4	90,2	80,8	63,4	71,6	67,7	74,7
Kazakhstan	186,5	243,3	261,4	267,6	193,8	226,0	159,1	165,6	272,9
Kyrgyzstan	55,2	75,9	83,8	86,3	80,4	70,0	69,2	75,2	80,0
Latvia	325,8	347,0	328,6	346,5	345,6	303,8	132,2	336,1	398,1
Lithuania	286,3	301,6	304,7	319,7	320,5	282,0	283,5	313,0	383,4
Russia	247,2	282,0	294,9	315,2	286,8	199,2	185,7	228,4	211,9
Tajikistan	28,6	33,0	38,2	47,9	46,6	37,0	34,7	31,8	28,8
Uzbekistan	105,2	123,5	141,9	152,8	170,6	168,9	168,0	102,6	75,7
Ukraine	141,3	153,5	179,0	190,9	133,3	78,0	71,6	95,2	93,2
Estonia	360,0	376,3	361,4	390,0	391,5	391,5	388,5	436,3	482,5

Source: Dynamics of social indicators in the CIS countries, Georgia and the Baltic states in 2000-2018.
International Association of Pension and Social Funds. - Moscow. - P. 28-29.

We calculate the coverage ratio based on the data in tables 3 and 4. This indicator represents the ratio of average pension (Db) to average wage (Da) ($K = Db / Da * 100$). According to the recommendations of the International Labor Organization [36], the size of pensions to citizens should be at least 40% of wages. However, in 2018, the coverage ratio in Uzbekistan amounted to 34,5% and was 5,5 percentage points below the required norm (table 5).

Table 5: Change in the coverage ratio in the pension system in 2010-2018 (in%)

Countries	Years								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Azerbaijan	34,0	39,7	38,2	40,1	39,0	38,1	38,4	39,4	41,2
Armenia	26,4	25,0	26,2	19,9	21,2	20,5	21,5	20,8	23,5
Belarus	48,0	49,5	51,3	43,6	43,0	41,8	41,1	38,2	39,8
Georgia	13,4	14,9	15,2	19,4	18,5	16,3	18,0	14,9	17,8
Kazakhstan	35,4	39,6	38,5	37,3	28,8	39,8	38,1	35,8	68,5
Kyrgyzstan	35,3	37,6	36,7	36,9	35,1	34,0	32,6	33,0	34,8
Latvia	38,8	37,8	37,2	36,5	35,1	33,5	13,9	32,1	27,6
Lithuania	43,6	42,7	45,3	35,4	36,9	35,7	33,0	33,0	36,3
Russia	36,3	35,4	34,4	33,7	33,5	35,6	33,8	34,0	32,5
Tajikistan	35,4	34,4	32,8	32,8	28,2	26,0	28,3	23,7	22,2
Uzbekistan	33,1	38,2	25,4	26,6	39,1	35,3	28,5	35,3	34,5
Ukraine	50,1	46,4	47,3	46,7	45,4	40,5	35,3	34,9	29,9
Estonia	34,3	32,1	31,5	29,7	30,4	30,4	30,5	31,6	32,9

Source: Calculated based on the data in tables 4 and 5.

It is also affected by the growing number of people retiring with part-time jobs. For example, in newly appointed pensions, the proportion of citizens retiring with part-time employment increased from 32,5% in 2012 to 53,2% in 2018. The highest replacement rates in Kazakhstan (45,6%), Belarus (40,2%) and Azerbaijan (39,3%). In the EU countries, the replacement coefficient varies around 60%, while in OECD countries this indicator is 54,5% [37].

The change in the average monthly pension is actively affected by the average monthly salary of citizens. There is theoretical reason to believe that there is a correlation between these two factors:

when indexing the wages of public sector workers in Uzbekistan, pensions are indexed at the same rates; in accordance with applicable law, the size of the pension for retirees is determined on the basis of wages received over the past decade; Pension fund income is generated from insurance premiums of employees and social contributions of employers.

These aspects indicate the relationship between wages and pensions. We analyze the relationship of these two factors based on the latest data for 2001-2019 in Uzbekistan.

Table 6: Monthly Average Information between salaries and pensions in Uzbekistan for 2001-2019 (in US dollars)

Years	The size of the average monthly pension	The average monthly wage
2001	25,2	39,3
2002	18,4	39,3
2003	17,7	41,3
2004	21,2	52,2
2005	27,7	73,8
2006	35,2	120,5
2007	51,6	179,3
2008	75,5	172,4
2009	90,4	266,0
2010	105,2	318,1
2011	123,5	323,1
2012	141,9	559,3
2013	152,8	574,4
2014	170,6	436,4
2015	168,9	478,7
2016	168,0	590,5
2017	102,6	290,7
2018	75,7	219,6
2019	74,2	243,0

Source: Dynamics of social indicators in the CIS countries, Georgia and the Baltic states in 2000-2018. International Association of Pension and Social Funds. – Moscow. – P. 28-29.

The table shows that as of 2019, the average monthly salary was \$ 243, and the average monthly pension was \$ 74,2, i.e. the ratio is 30%. According to statistical analysis, the correlation coefficient between the average wage and the average pension is 0,961 calculated according to the Pearson formula (the Pearson correlation coefficient characterizes the existence of a linear relationship between the two values). It can be concluded that the average monthly pension is directly related to the increase in the average monthly salary of citizens, and this relationship is very strong. However, given the insufficient number of indicators used in statistical analysis, the calculation of Spearman's formula (this is a quantitative assessment of the statistical study of the relationship between phenomena used in nonparametric methods) can give more accurate information. The Spearman correlation coefficient is 0,953, which is statistically significant. The correlation between these two factors is very strong and a change in average wages directly leads to a change in average pension. As can be seen in Figure 5, the location of the coincidence points between these two indicators is close to the line of correspondence.

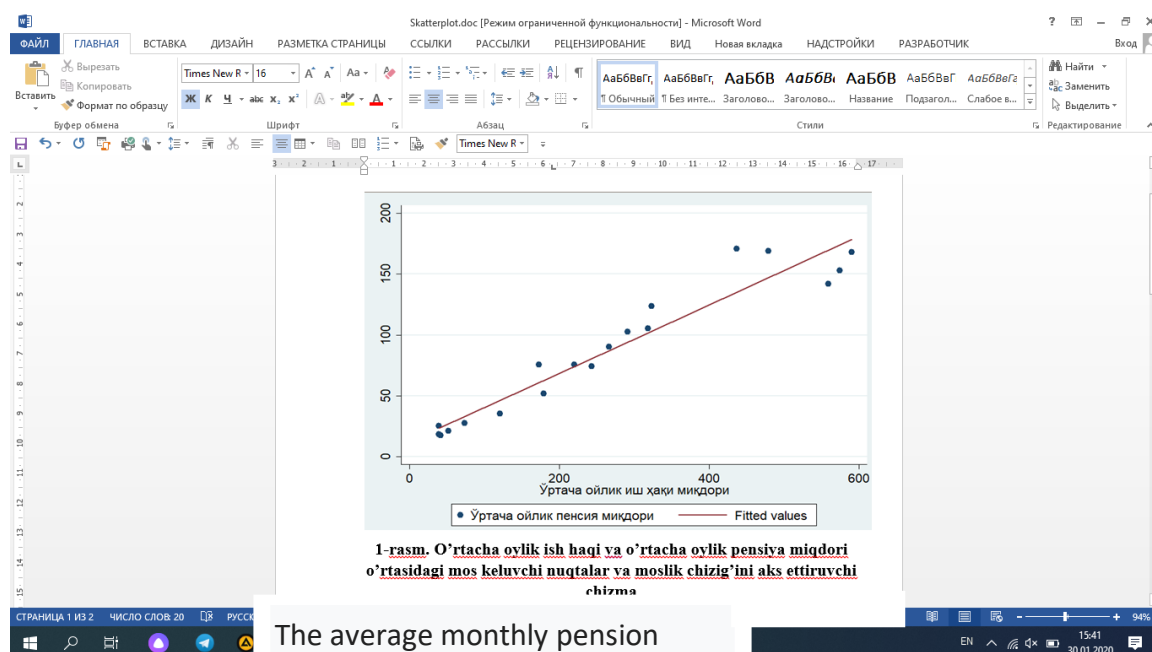


Figure 6: Average monthly salary and pension between points and line of correspondence

We are creating an econometric model of the ratio of average monthly wages to changes in average monthly pension. An inductive analysis of this model shows that the above model represents a statistical significance of less than 0.05 and is consequent, this model is statistically significant. The influence of an independent variable (average monthly wage) on the dependent variable is also less than 0.05 and is statistically significant (the calculations were calculated in the Stata software package).

Econometric model of average monthly pension and average monthly wage:

$$P = 12,4 + 0,28W + e \quad (1)$$

Here: P – is the average monthly pension;

W – is the average monthly salary;

e – is an unaccounted factors

The coefficient of determination (the coefficient of determination is the fraction of the variance of the dependent variable, explained by the model of dependence under consideration, that is, explanatory variables. More precisely, this is a unit minus the share of unexplained variance in the variance of the dependent variable) of the compiled equation is 0,92, and the size of the average monthly wage can explain 92% of the change in the average monthly pension. Coefficient (0,28) W (monthly salary) - means a change in the average wage per unit, which leads to a change in the average pension by 0,28 units. The coefficient of the normal distribution of remains between the regression line and the coincidence points between the two factors is 0,38. For this reason, both residues are assumed to be normally distributed. Based on the compiled model, we formulate pension forecasts for three different scenarios for 2020-2025 (table 7).

Table 7: Forecasts of changes in the average monthly wage to the average monthly pension in 2020-2022 (US dollars)

Years	Scenario №1		Scenario №2		Scenario №3	
	The size of the average monthly wage	The size of the average monthly pension	The size of the average monthly wage	The size of the average monthly pension	The size of the average monthly wage	The size of the average monthly pension
2020	256,4	84,2	231,4	77,2	267,3	87,2
2021	271,2	88,3	220,4	74,1	294,0	94,7
2022	288,1	93,1	209,9	71,2	323,4	103,0

In scenario No. 1, it is assumed that the changes in the average monthly wage will be adjusted in accordance with the country's GDP forecasts for 2020-2022 (5,5%, 5,8% and 6,2%, respectively). According to the model's calculations, it is safe to say (accurate to 92%) that the average monthly pension will be \$ 93,1 in 2022.

According to scenario No. 2, the average monthly salary in 2020–2022 decreases by 5% than in the previous year and according to the model's calculations, it can be said with certainty (with an accuracy of 92%) that the average monthly pension is \$ 71,1 in 2022.

According to scenario No. 3, it is assumed that the average salary in 2020–2022 will increase by 10% compared to the previous year and according to the model's calculations, it can be said with certainty (with an accuracy of 92%) that the average monthly pension will be 103.0 US dollars in 2022.

Based on the analysis, the following conclusions can be drawn:

1. According to the analysis of the average monthly pension and the average monthly wage for 2001-2019, the correlation coefficient between these two indicators is 0.953, and this relationship is very strong.
2. The econometric model obtained from the statistical analysis is statistically significant, explaining that the changes in the average monthly wage make up 92% of the average monthly pension change.

V. CONCLUSION

1. Pension provision is a priority area of the social protection system and the level of coverage of citizens with retirement benefits depends on economic development and the development of the pension system.

2. The formation and development stages of the pension system in Uzbekistan can be divided into five stages. At the same time, until 2004, the so-called “distribution” pension system was operating, based on the solidarity of generations, and since 2005, in addition to the state pension system, a funded pension system was introduced. Distribution and funded pension systems have certain advantages and disadvantages. The main purpose of the distribution pension system is to implement a mechanism to protect citizens from poverty, and this system is not adapted to demographic changes. The purpose of the funded pension system is economic efficiency, which is typical for countries with market economies. However, it is impossible to immediately introduce a funded pension system, and it is very sensitive to changes in financial markets. It is obvious that the structure of the pension system of Uzbekistan should be based on various levels of support, including mandatory, additional and personal savings

of citizens in order to create favorable conditions for further social support of pensioners in Uzbekistan, increase the efficiency of the pension system and achieve a decent pension in the future.

3. The increase in fertility and life expectancy due to natural population growth and other factors (medical development, healthy lifestyle, etc.) increased the total population, labor resources, economically active population, as well as pensioners and recipients of social benefits. An aging population shows that the share of recipients of pensions and social benefits in the total population increased from 9,8% in 2012 to 11% by 2019. At the same time, an increase in life expectancy will lead to an increase in the number of pensioners, an increase in the burden on the pension system, and despite the ongoing pension reforms, it will continue to grow due to structural demographic changes. If radical reforms in the pension system are not carried out in the near future, the budget of the Pension Fund will not allow for the full financing of the pension of the population. At the same time, an increase in pension payments is associated not only with an increase in the number of recipients, but also with an increase in the size of pensions. When strengthening the budget of the Pension Fund, it is a priority to improve the mechanism for legalizing citizens' incomes, including by expanding the coverage of payers of self-employed and migrant workers working abroad.

4. Retirement age is one of the main indicators of the pension system of citizens, and the average retirement age in Uzbekistan, today it is 57,5 years. The world's average retirement age is 62 years. In developed and developing countries, the retirement age is much higher than in Uzbekistan. When determining the retirement age, factors such as life expectancy, social policy, the country's economic development, job creation and employment, as well as the welfare of the population should be taken into account. Based on this, in the future it is recommended to gradually increase the retirement age (6 months per year) to 58 years for women and up to 63 years for men. At the same time, it is necessary to inform in advance about new changes (for example, 1-3 years ago) in order to prevent social discontent of citizens and prepare them for changes in the pension system. An increase in the retirement age will have a positive impact on the efficiency and financial stability of the national pension system.

5. Persons who do not have sufficient seniority for the assignment of a pension shall be assigned an old-age pension in the amount proportional to the existing seniority, provided that they have at least 7 years of employment. In this case, the difference between the size of the pension of a citizen with 30 years of experience and the size of the pension with 10 years of experience is insignificant. Therefore, it is necessary to ensure the relationship between the size of pensions and the length of service of an employee. For this: it is necessary to gradually increase the minimum length of service required for granting pensions from 7 to 10 years (According to the Convention of the International Labor Organization No. 102, the minimum length of service required for awarding pensions by age is 15 years); it is advisable to increase the basic size of pensions for each full year of work in excess of requirements (25 years for men and 20 years for women), for the purpose of pensions by 1.5% of the average monthly salary for calculating the old-age pension.

6. Coverage ratio in Uzbekistan - the ratio of the average pension to the average salary was 34,5% in 2018. According to the recommendation of the International Labor Organization, this indicator should be at least 40%. In addition, an analysis of the average monthly pension and wage in 2001-2019 shows that the assigned average monthly pension is directly related to the increase in the average monthly wage of citizens, and this relationship is very strong. Given this, it is advisable to increase the limit from the current 10-fold to 12-fold average monthly wages accepted for calculating pensions and to increase wages in our country at least 2 times in the near future.

This will have a positive impact on citizen participation in state social insurance, increase the connection between pensions and work experience, and ensure the economic and social justice of the pension system

7. Based on international experience, it is necessary to create a three-level pension system to increase the interest of the population in the payment of insurance premiums:

- 1) State minimum pension provision;
- 2) Pension coverage based on the forced transfer of a pension insurance contribution from a citizen's salary to his personal account (payment of interest on pension accumulations accrued to the personal account must not be lower than the Central Bank refinancing rate);
- 3) Voluntary private pension provision (voluntary establishment and payment by the population of insurance contributions to the Pension Fund).

The introduction of a three-level pension system will allow citizens to receive a guaranteed state pension and, at their discretion, determine the amount of their own pension in the future.

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