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PENSION SYSTEM MODELS BASED ON THE EXPERIENCE OF FOREIGN COUNTRIES

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Abstract

The financial threats of the pension system and the aging of the population are noteworthy in all countries of the world, that is why experts are constantly working to alleviate the mentioned problem.

Pension indexation is an accepted practice around the world. The majority of countries use the inflation method for pension indexation, in order not to decrease the purchasing power of older people, in spite of increasing in prices.

The accessibility and structure of pension systems in the world vary widely according to various dimensions: the number of participants in the system, the replacement rate, the type of financing, and others. It is clear that the design of the pension system greatly affects on the number of participants in it.

The paper aims to analyze the pension models of developed countries, analyze their advantages and disadvantages.

Keywords: *population aging, indexation, pension system*

Introduction

In 21st century, almost every country recognizes the social rights of people and fights for the protection and expansion of these rights. While talking on the social protection, we should pay attention to the pension insurance system, because it is the most important part of the state and ensures to maintain dignified old age.

According to the data of the united nations, the number of elderly people (60 years and older) will consist of 21% of the world`s population by 2050. Exceeding the number of pensioners over the number of able-bodied people negatively affects the pension system and, accordingly, the social situation of the country. Exceeding the number of pensioners over the number of people able to work has a negative effect on the pension system and accordingly on the social situation of the country. As a result of it, the state is forced to increase the social costs, what causes an economic crisis, that's why it is necessary to develop a mechanism of accumulative pension insurance.

Today there are many large pension systems in the world, which are the guarantors of carefree old age and they have become one of the largest investors as well: they own shares and bonds of the largest companies around the world.

Pension systems have been developed and improved in parallel with the development of humanity, the main purpose of which was to replace the average income on per capita during the working age in such a way that it would improve the living conditions.

Therefore, pension replacement rate has become a measure for evaluating the system of a particular country. The replacement rate in the pension system of developed countries is within 60–80%, in developing countries 15–30%. In the contemporary period, the development of pension policy is still a major component of debate in many countries of the world. Many developed and developing countries are still in the process of establishing of pension system, the goal of which is to ensure adequate retirement income, fiscal sustainability of pension costs and more effective response to demographic changes of the population.

Literature review

Pension funds, investment flows, ratios and the general pension system have a great influence on the economic growth of any country of the world and therefore this issue is in the center of attention of many researchers and economists research.

Martin Kavinsky and others (2012) paper reviews various types of protection mechanisms of pension system of selected central European countries. He reviews both the mandatory and voluntary retirement markets, identifies existing and possible threats in the existing framework, which may harm the social security. The paper comes to an end with a general evaluation and policy recommendation.

Olivia Mitchel and others (1995) in their paper discuss pension systems in the long-term perspective of the economies of developing countries, aims the restructuration of fiscal policy.

The paper aims to evaluate the income system and labor market by defining the goals of a well-functioning pension system, as well as outlining the risks, which should be taken into account while developing a sustainable pension system.

In the study of Fisnik Morina and others (2022), authors aim to analyze the impact of pension assets investments on economic growth of selected non-OECD countries by taking into account gross fixed capital formation, inflation, public debt and others. In order to conduct econometric analysis in the study, authors rely on the secondary data, published in annual reports of OECD, world bank and IMF. Based on the econometric results of this study, authors conclude that investing the assets of the pension fund had a positive effect on economic growth of OECD selected countries (2002–2018). The authors, through the scientific paper, provide new scientific evidence to the governments and policy makers of these countries how to develop appropriate strategic investment policies to ensure economic growth and efficiency in capital markets.

Considering that, most of non-OECD countries are developing and transition economies, the importance of this study is that authors with the empirical conclusions emphasize the importance of pension fund investments in global financial markets and the effect of these investments on the economy.

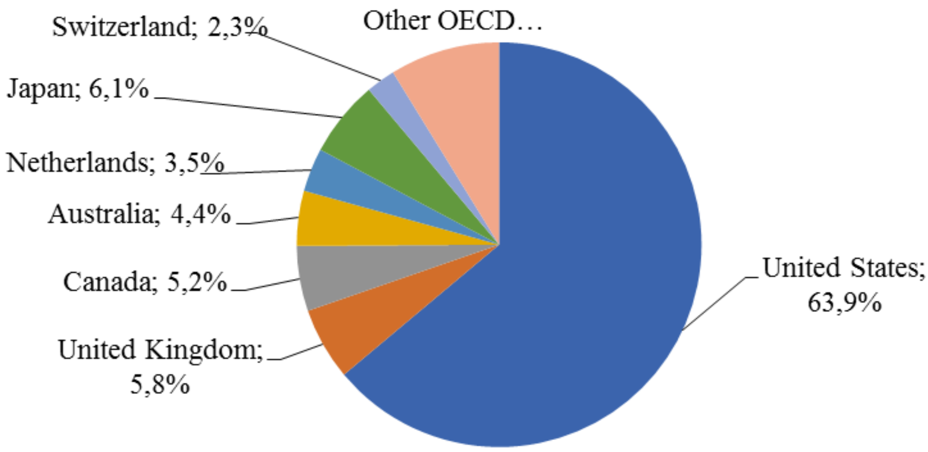
James Stavely and others (2016) review the influence of pension system structure on private savings and through them on the total foreign assets of the country. The paper presents the model of two countries, which studies the relationship between the size of pension guarantees and between the choices of workers portfolio.

According to the authors, a large number of pension costs is connected with the international debt, long share positions and short debt positions.

Pension System Models

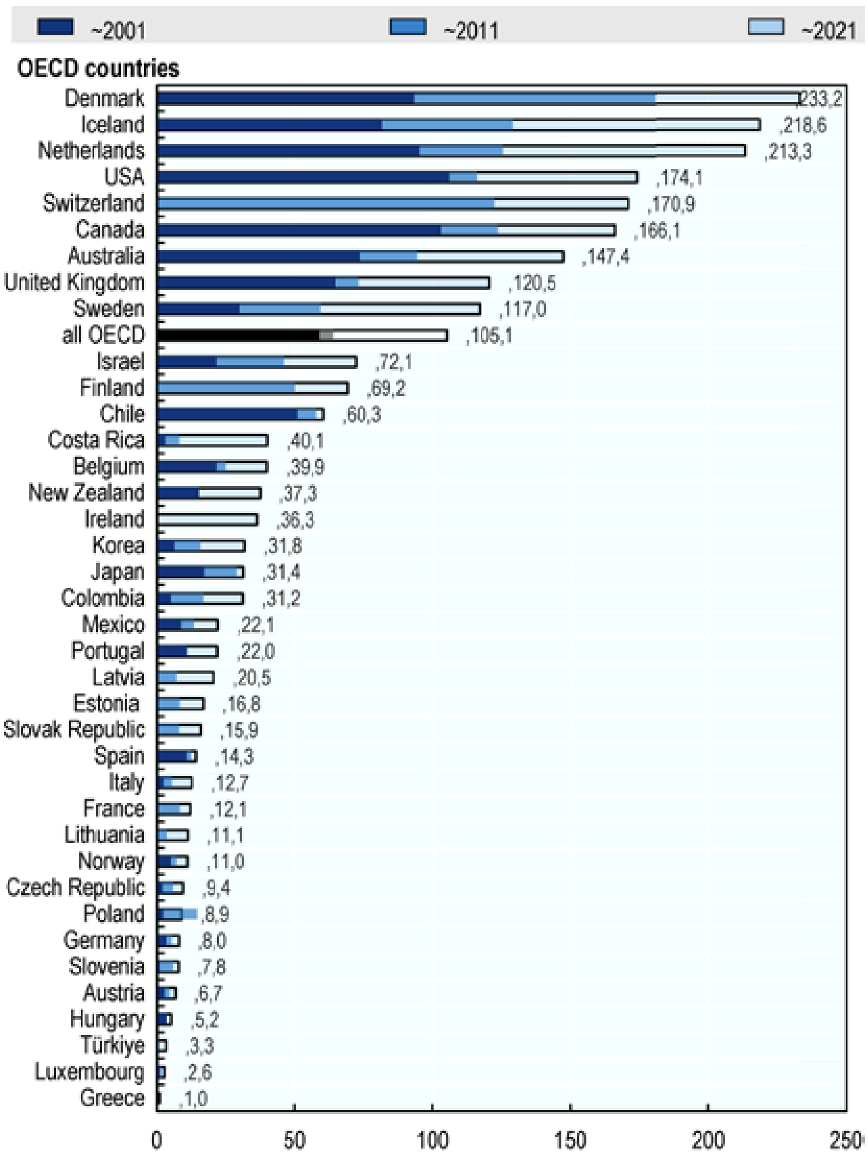
Based on the results of various researches, we can say that the structure of pension system effects on the country`s foreign assets and private savings, on the dynamics of international flows of capital. Many developed countries, including USA, Canada and Italy has debt liabilities, which are compensated by capital assets.

Chart 1. *Number of assets according to the countries*



Source: statistics of pension systems of the countries – https://stats.oecd.org

Chart 2. *Assets in relation to GDP in 2001–2021*



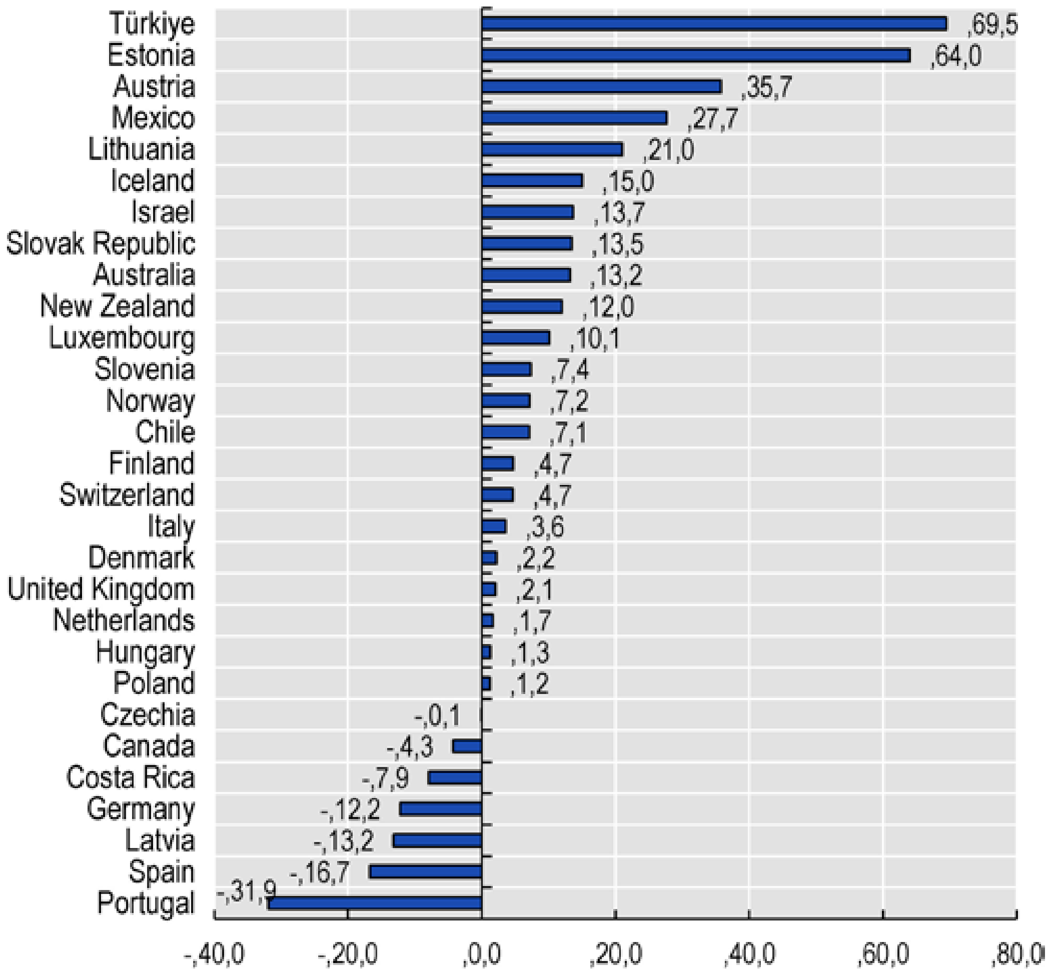
Source: statistics of pension systems of the countries – https://stats.oecd.org

Funded and private pension schemes accumulated significant assets to fund future pension benefits around the world. Pension assets consisted of 58.9 trillion US Dollars in OECD by the end of 2021, 50.1 trillion US dollars in 2022 and 55.7 trillion US Dollars by the end of 2023. The indicator of 2021 is 7% more than the indicator of 2020, in 2022 the assets were reduced as we see, but in 2023 it was still increased with 11% (OECD Pension Markets in Focus, 2023). The amount of assets in funded and private pension plans varies between countries. Seven countries owe more than 90% of the total pension assets of OECD. The largest pension market within OECD belongs to United States with 40 trillion US Dollars assets, what is 63.9% of OECD assets, which is followed by Japan and Great Britain, accordingly with 6.1% and 5.8%. Together, these three largest markets amount more than three-quarters of global pension assets. Great Britain overtook Canada and became the third largest market with total assets, which consisted of 3.2 billion US Dollars by the end of 2023. Australia is the fifth largest pension market (after Canada), 22nd largest pension market with 4.4% of assets. Australia also has the highest ratio of pension assets in relation to GDP with 145%, it is behind only the Netherlands, Switzerland and Canada (Gray, 2024).

Pension assets have grown up rapidly over the past couple of decades in relation to GDP too, what underlines increasing the significance of retirement savings around the world.

Chart shows that, in 2001–2011, assets in relation to GDP were increased with 59% and in 2011–2021 – up to 64%.

Chart 3. *Nominal growth rate of contributions into pension plans, 2022*



Source: statistics of pension systems of the countries – https://stats.oecd.org

From a nominal point of view, pension assets have been increased in all reporting jurisdictions over the past couple of decades. This growth was especially rapid in such countries, which have young funded pension system, such as Estonia (31%), Latvia (33%), Slovakia (54%), Turkey (48%). Asses growth has been slowed down in Estonia (14% per year on average), in Latvia (17%), in Slovak Republic (10%) during the last decades. It has already been slowed in Turkey, but still remained more than 30%. Please have a look on the chart to see more clearly (OECD Pension Markets in Focus, 2023).

In 2023, the retirement portfolio, which consisted of 60% global stocks and 40% global bonds, was 16,6% on average. Over the past two couple of decades, capital allocation was decreased from 51% of the year 2003 to 42% of the year 2023.

After a strong performance in 2021, assets earmarked for retirement fell in 2022 in most OECD countries. 1 Altogether, these plans held USD48.1 trillion of assets at end-2022, 15.6% less than a year before (Table 1). The decline in pension assets was widespread and visible in 32 out of 38 OECD countries. The sharpest drops occurred in the Netherlands (–20.7%) and the United Kingdom (–20.2%), with eight other OECD countries experiencing a drop in the value of assets between 10% and 20%, including the United States (–15%). As a result of these declines, there was no OECD country where pension assets exceeded twice the GDP at end-2022, unlike at end-2021 when Denmark (233%), Iceland (219%) and the Netherlands (213%) did (OECD Pension Markets in Focus, 2023).

Table 1. *Assets in asset-backed pension arrangements at end-2022 (preliminary)*

OECD countries	% change	in USD million	% GDP	data coverage
Australia	–1.5	2087 259	131.2	all available plans
Austria	–11.3	32990	6.9	all available plans
Belgium	–12.2	36550	6.2	21% of available plans
Canada	–6.0	1551 508	77.4	55% of available plans
Chile	4.4	174792	57.7	all available plans
Colombia	–0.5	71785	23.6	all system
Costa Rica	–0.1	26684	36.1	all system
Czech Republic	4.4	26527	8.8	all system
Denmark	–8.5	766796	191.1	all system
Estonia	–8.4	5032	13.0	all system
Finland	–5.7	154477	54.3	88% of available plans
France (1)	197.2	236145	8.4	27% of the system
Germany	–10.1	275299	6.7	all available plans
Greece	–1.4	1934	0.9	all available plans
Hungary	–2.6	7468	4.2	all available plans
Iceland	–1.4	48592	183.2	99% of the system
Ireland	–11.3	146222	27.3	all available plans
Israel	–3.6	307330	61.7	all available plans
Italy	–3.9	230396	11.3	all system
Japan	–1.1	1258 225	30.0	all available plans
Korea	14.7	268287	15.8	45% of the system
Latvia	–5.5	6794	16.3	all system
Lithuania	–4.7	6231	8.7	all system
Luxembourg	–17.2	1706	2.0	all available plans
Mexico	–0.2	269095	18.4	90% of available plans

OECD countries	% change	in USD million	% GDP	data coverage
Netherlands	–20.7	1543016	153.7	all available plans
New Zealand	5.1	78423	32.0	all system
Norway	–5.0	44004	7.8	all available plans
Poland	–16.5	35798	5.1	81% of the system
Portugal	–11.3	39844	15.6	91% of available plans
Slovak Republic	–2.3	16069	14.0	all system
Slovenia	–2.8	4232	6.7	all system
Spain	–9.2	166388	11.8	all system
Sweden	–8.2	561147	98.7	all available plans
Switzerland	–7.1	1148 286	137.5	90% of the system
Türkiye (2)	79.1	23019	2.9	all available plans
United Kingdom	–20.2	2402 270	88.7	all available plans
United States	–15.0	34003885	133.5	all system
Total (3)	–15.6	48064506	81.3	96% of available plans

Source: statistics of pension systems of the countries – https://stats.oecd.org

In contrast, pension assets grew in 24 out of 32 reporting jurisdictions from outside the OECD area. The aggregate growth in pension assets across these 32 jurisdictions was 4.7%. Asset-backed pension arrangements were introduced relatively recently in a number of non-OECD jurisdictions. For example, Georgia, which had one of the largest increases in pension assets (48.5%), introduced mandatory pension plans in 2019. These newly introduced plans, in Georgia and elsewhere, are gaining new members and benefit from growing amounts of contributions. These contributions exceed benefit payments that have just or not started yet and offset potential investment losses (OECD Pension Markets in Focus, 2023).

Pension assets trends are usually stipulated by a number of factors, such as the number of participants, having a retirement plan, contributions, benefits, which these plans pay to retirees and fulfillment of financial pension plans. Participation in funded or private pension plan can be mandatory, voluntary (or encouraging). Employers may be required by law to establish a retirement plan for their employees, who will be obliged to join this plan (e.g. Finland, Norway, Switzerland). The legislation does not obligate employers to draw up the plan for their employees in Denmark, Netherlands, Sweden. Some countries of Latin America and Europe don`t ask the employers to draw up the plan for their employees, but they require from their employees to join private pension fund, selected by them (for example, Chile, Colombia, Mexico). Some countries use soft coercion to motivate their employees to take part in the plan to join automatically (Estonia, Lithuania, New Zealand, Poland, Turkey and United Kingdom). Auto-join rates are lower in Poland (11%) and Turkey (13.4%), where there is a lack of trust in plans. However, more people are involved in sponsored pension plan than 10 and 20 years ago.

Many countries contribute the idea of investing in retirement savings. Considering this fact, pension funds in different countries make pension contributions in financial capital markets, which positively affects their financial indicators. Investing in pension assets in international capital markets can directly stimulate the economic growth of those countries by providing more funds for investment. Also, these pension assets investments have a positive effect on private capital markets in terms of better capital allocation and overall efficiency of institutional investors. These investments in the pension systems of these countries can directly increase the efficiency of companies in various sectors of the economy and improve governance.

Let us review the pension systems of several countries:

Pension System of USA

(Lebedeva, Feiguine, 2015)

America is considered an example of a successful pension system – the US government is doing everything possible in order to provide the citizens of the State with a dignified old age after termination of employment. The current system was created and launched in 1935. Over a few decades the system was improved, refined, reformed, but its essence remained unchanged. The pension legislation of the country has been developed in such a way that citizens living here have equal rights after retirement. In the United States, it does not even matter whether the applicant is an immigrant or a resident of the State. However, there are nuances in this system as elsewhere.

There are 3 levels of retirement insurance in the United States:

- Public, which is guaranteed by the government;
- Corporate, which is financed by the employer;
- Private, which is the employee's personal bank accounts, mutual aid funds and insurance companies.

By using all these systems, citizens can get adequate retirement protection and USA government can solve several important tasks simultaneously:

– Guaranteed minimum retirement protection for all citizens of retirement age;

– Ensure healthy competition between federal public and private entities of pension insurance;

– Ensure that the employer competes with the best specialists for the opportunity to offer the best pension insuranc;

– Promote citizens to take care of their safe old age from the very first years of their careers;

– Allow older generation to bequest their saved retirement savings to their descendants;

– Provide a strong domestic investment resource.

State provision is based on insurance pension contributions that are part of the social insurance system. There are more than 43 million retirees in the united States – almost 13% of the total population. Contributions in state pension fund is done in equal shares with 7,65% by the employer and employee, but only within 65,4 thousand US Dollars per year. The self-employed persons pay – 15,3% his and employer`s share simultaneously. About one-fifth of these funds go to health insurance for retirement period.

While calculating the pension, the length of service, amount of insurance premium and inflation indicators are taken into account. Average monthly state pension in USA is $1100-$1200.

In the United States, all citizens have a right to conclude the contract with non-state owned enterprises. People open an individual pension accountin such companies. Contributions are made on a voluntary basis. The procedure for opening and keeping these accounts is also strictly regulated by US law. During the entire period of accumulation of funds, taxes are not paid on them, however, after their withdrawal and closing of the account, income tax is deducted from the accumulated amount. As a rule, pension accounts are being opened in commercial and savings banks, mutual aid funds, insurance companies. Accounts can be moved from one place to another at any time. Also, at the request of the account owner, he is able to make investment decisions himself (or plan the most profitable placement of accumulated funds) or entrust account management to financial institutions. After reaching the retirement age, a person has the right to receive a pension, withdraw all the money, spend it on treatment, tourism or give it to descendants. However, in this case, payments are stopped and the pension account is closed.

Pension System of United Kingdom

(Lebedeva, Feiguine, 2015)

Pension system of United Kingdom is based on the combination of public and private elements. It includes three types of pensions: basic state pensions, state pensions and private pensions. The British pension system is one of the oldest in the world (Bozio et al., 2010). Meanwhile, a constant effort is being made to increase the effectiveness of its structure. British people, who have reached retirement age are entitled to receive a state pension

(65 year is for men and 60 year is for women). The main source of this type of pension is the pension contributions of employees. The size of the basic state pension is set by the government and is indexed according to the inflation rate. Over a long period of time, the size of the basic pension was independent of the employee's income and length of service. Currently, after the reform, the basic pension is 20% of the employee's average salary, calculated over the entire period of employment. Unlike state basic pensions, private pensions are funded by contributions made equally by employers and employees. Herewith, state pensions are not compulsory. Employees have the choice of participating in either public pension programs or private pension programs. In the country, a trend has been clearly identified, according to which employees prefer the second option. Thus, the size of the state pension is currently no more than 30% of the total amount of pensions paid to British people. Therefore, in case of refusal to participate in the state pension program, the employees are obliged to participate in any other private pension program. In the modern United Kingdom, the list of such programs is quite large. In particular, there are collective and individual programs. Collective programs assume that a certain scheme should be applied to the entire company's personnel. Individual schemes assume that the individual employee should independently decide on a contribution transfer scheme in order to build up a subsequent private pension. Pension contributions are paid either to the accounts of private pension funds or to the accounts of insurance companies, which offer programs for personal and professional retirement protection. Recently, the UK government has implemented a pension reform, which resulted in the introduction of the so-called stakeholder pensions. The reform was intended to further increase the role of the sponsored scheme. It is a form of financed investments, such as participation in mutual investment funds. Participation in mutual schemes is voluntary for individual employees, but it is mandatory for most employers. The pension reform makes the number of pensions paid by British people more dependent on the following factors: the choice of mutual investment fund, the overall state of the economy, trends in the development of the financial market.

Pension System of Norwegian

(The Norwegian Social Insurance Scheme. 2022).

The Norwegian Pension Fund can be singled out from the world's pension systems, which is distinguished by successful investments, its assets in 2017 exceeded 1 trillion dollars. Half of this amount is the income received from investments. Perhaps it is difficult to imagine that twenty years after the first revenues of the company, its assets, which were obtained from oil sales, would exceed 1 trillion dollars. This indicator is even more impressive when it`s calculated on per capita. The population of Norway is less than 5 million, accordingly, it consists of 200000 dollars on per capita. For comparison, the assets of the fund are equal to the economy of Mexico and about 70 times larger than the economy of Georgia. The amount of pension contributions in Norway is 5% of salary. This indicator is considered the lowest in Europe. There is the question, how the Norwegian manages to save for such a high pension:

1. First of all, pension contributions are not only accumulated, but they are also invested to increase cash flow. The average income from such investments over the past years was more than 13%.
2. The main source of pension contributions in Norway is "Black Gold". This is the country, which produces and sells the oil. The country gets a lot of income from this, what is wisely spent by the government of the country: invests in a pension fund. The funds are then invested around the world.

The Norwegian Pension Agency owns shares of such companies as they are: "Google", "Nestle", "Microsoft", "Apple". Also, the fund owns the assets of real estate (Nadiradze, 2020).

In Norway, more than 23% of the population is 60 years old. This indicator is increasing every year, but you won't hear any complaints from older Norwegians about their difficult living conditions. On the contrary, people here are waiting for retirement, because they know that this will be the best time of their life. Country has high social benefits, what gives the elder people a dignified old age.

The retirement age in Norway, a country with a fairly liberal and transparent system, which attracts citizens of other countries is considered to be one of the highest ages in the world and is 67 years old. However, life expectancy in Norway is almost 90 years. Mainly, it is merit of the government – social programs, employment of retired people and possibility of providing good income, high-quality medical service does its job. How can a small country with five million people have such an opportunity? It is simple: Norway has the largest pension fund in the world, which is generated by huge profits from oil and gas exports.

In Norway, the pension consists of a combination of three parts:

– Basic pension – its calculation is not depended on the total contributions and is based only on the pensioner's length of service;

– The special pension is depended on the actual income of the pensioner, so called "retirement points". People whose annual income does not exceed six average monthly salaries earn the most. If the person has exceeded this limit twelve times or more, then the special pension is not paid at all. In this case, the state considers that, with such a salary, a citizen should be able to collect a substantial amount of money for a comfortable future;

– Benefit package – this part is charged to people with a very small pension, if the total sum of the latter and the benefit itself does not exceed more than 1,94 times of the average annual salary.

There are also benefits for pensioners in Norway. The government is particularly proud of the availability of free medicines, which is considered a significant achievement in the mountainous terrain of this state (Yalçın, Uluç, Karaçam, and Etik, 2022).

Pension System of Turkish

(Yalçın, Uluç, Karaçam, and Etik, 2022)

Turkey is a developed Asian country, which provides its citizens not only with a high standard of living, stability and significant salaries, but also with a very good pension.

In accordance with the changes made today, women are required to retire at age 58 and men – at the age of 60, this is the minimum retirement age for which certain pension parameters must be observed – working days.

In order to receive a pension on the territory of Turkey, it is necessary:

– Reaching the retirement age;

– Official employment for a period of at least 5 years and regular pension contributions.

There are hree typesof pension:

– Salary-based, contributions are made by the employer;

– Individual (entrepreneur) – contributions are made by him;

– Civil servants (public officials) – contributions are made by the state.

Turkey has Bireysel emeklik sistemi (BES), what means private pension system. According to this system, even those who do not work can receive a pension. In order to take part in this program, it`s necessery agreement with a bank or insurance companies and monthly deduction. Programs differ in the amount and duration of contributions. The amount can be withdrawn after 10 years.

If a citizen of the Republic of Turkey lived and worked in another country, then he is not entitled to receive a pension, he can apply for a pension in Turkey only after paying 3.5 USD for each day of missed work experience.

Maximum pension in the republic of Turky is 3500 Turkish Lira. As a rule, such pension benefits are received by the pensioners working in the government sector (mayors, heads of administration, ministers, etc.). A foreigner has the right to receive a Turkish pension only in case of payment of the necessary social contributions, but it should be noted that foreign residents are not allowed to make contributions in the state pension fund.

If they want to receive pension in Turkey, they should transfer 32% of salary in a private fund. Making contributions to such funds and applying for accumulated pension can only those foreign residents, who have a residence permit in Turkey.

The following benefits are available for pensioners:

– Buy the medicines at a discount of 90% from the full price;

– Free access to state gyms and clubs.

Pension system of Georgia

(Urotadze, 2016)

After gaining independence, Georgia inherited the Soviet Union's pension system, according to which the amount of pension was calculated in the amount of 55% of the average salary of the last or the last 5 years of the retired person`s work. The goal of this model of the pension system was for the employee to maintain the conditions of life that he had before retirement. The existing single-pillar pension system, which was spread in Georgia till 2019, had significant shortcomings. But the main reason, what caused the need to establish the second pillar of the pension system is the demographic problems that Georgia is facing.

From January 1, 2019, the Law on accumulating pension system came into force, which provides for:

Participation in the accumulated pension scheme is mandatory for all employees except for non-residents, who, according to August 6, 2018, had not yet reached the age of 60 in the case of men, and 55 in the case of women. Participation in the scheme is voluntary for self-employed persons and employees, who were 60 years old for men and 55 years old for women on August 6, 2018.

2% of the accrued salary will be transferred to the individual pension account of the participant in the agency for the benefit of the employee participating in the pension scheme. In addition, the employer and the state contribute 2% of the accrued salary each to the participant's individual retirement account.

2% of the accrued salary is transferred to the individual pension account of the employee participating in the state pension scheme, until the total amount of the employee's accrued salary does not reach 24,000 GEL per year. After that, the state transfers 1% of the accrued income to the employee's individual pension account until the total amount of the accrued salary exceeds 60,000 GEL annually, after that, the state treasury will no longer make contributions to the employee`s individual pension account. Participants of the self-employed pension scheme who are treated as self-employed will contribute 4% of taxable income into an individual pension account, and the government pays an additional 2%. Participation in the accumulated pension scheme ensures a financially secure and dignified old age of the scheme participants after retirement. The amount accumulated in the individual pension account of the participant is the unconditional and untouched property of the participants, which is protected by law and is not subject to seizure, deduction, any other means of debt collection (INCASSO) or enforcement. The amount accumulated in the individual pension account of the participant is subject to transfer by inheritance. Pension assets will create a significant investment capital base in the country in the near and medium term, which will be crucial for the development of the capital market in Georgia and at least 80% of which will "work" on the growth of the Georgian economy and provide a significant acceleration of the economic growth. The beneficiary of the said development will be every citizen and resident of Georgia, regardless of whether he participates in the accumulation pension scheme or not. (Georgia Pension Agency).

Conclusion

Based on all of the above, we can conclude that, in the 21st century, where the ratio between capable of working and retired population is decreasing day by day, it is necessary to develop a system that will improve the social background. Private pension scheme of savings is such system. As we have already seen in the countries discussed above, the accumulation system works perfectly and provides the population with a dignified old age. Also, the number of participants in these schemes is increasing day by day, and accordingly, the number of assets is also increasing.

It is necessary for pension funds to develop a strategy for regulating asset management in order that investments of pension assets were profitable, liquid and less risky.

The pension reform investment strategy enables the public sector to focus on correcting the external influences and on fighting against property. It is also important to develop a long-term investment strategy and not just make short-term plans.

Retirement activities are an area of growing interest from regulators. The government has a large influence on pension schemes, as they seek new ways to finance investments, which is required to overcome systemic issues. The government must manage to implement appropriate measures to maintain positive impulse and well-funded retirement income for investors.

Countries should encourage corporations, provide more methods for real and financial investment, provide more financial products and improve the investment environment for the efficiency of capital markets. These changes will encourage public and private pension funds and financial markets to have a positive and efficient relationship.

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