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MODELS OF DEFINED CONTRIBUTION PENSION SYSTEMS IN FOREIGN COUNTRIES

Abstract. The paper is focused on the analysis of the foreign experience in the field of creation and reforming of the pension systems. The paper is aimed at studying the economic bases of the forming of defined contribution pension systems in foreign countries and revealing of the main tendencies in pension reforms in foreign countries to define the possibilities of the pension reform for Kazakhstan. To achieve the set goal the paper investigates the main types of the pension system and its existing levels. The analysis of the stated elements of the pension system was based on the example of the countries of the Organization of Economic Cooperation and Development. The conducted investigation allowed revealing the advantages and disadvantages of the pay-as-you-go, defined contribution, and mixed pension schemes. Basing on the conclusion on the necessity to use the foreign experience in implementing the Kazakhstan pension reform, the concrete trends of its further reforming aimed at improving the effectiveness of the Kazakhstan pension system and its approach to the worldwide standards were proposed.

The investigation results can be used for developing the program documents defining the strategy of the pension schemes development under the contemporary economic and demographic conditions. The conclusions and recommendations on the pension scheme improving proposed in the work can be used for the pension reform in Kazakhstan.

Keywords: pension system, unfunded pension system, defined contribution pension system, insurance payments, foreign experience.

Introduction. The first pension systems in the world appeared by the end of the XIX century and were subjected to numerous reforms. But none of them took into account the demographic factors. At the end of the last century, a lot of developed countries experienced an increase in the pension age population due to the increase in the lifetime and decline in the birth rate. These factors increased the load on the able-bodied population, and a lot of countries were not able to provide a decent standard of pension payments. At the same time, the occurring and forecasted demographic changes showed the keeping of the unfunded pension system to be bleak. This means that the transfer to the defined contribution pension system has almost no alternative.

Along with this, the defined contribution pension system has not only the advantages but definite shortages too. The countries conducting the pension reform encounter problems related to the effective introduction and functioning of the defined contribution mechanism and comprehension of this mechanism by the broad sections of the population. These issues are especially acute for Kazakhstan where the existing unfunded component of the pension system, in the nearest time, will not be able to function to its full scale as it is necessary to elaborate the adequate policy of the pension system reforming. As a whole, these and other reasons stipulated the necessity of the detailed investigation of the mechanism of the defined contribution pension systems in some foreign countries.

Methodology. The methodology of the research is based on the application of dialectical logic and system approach, methods of analysis and synthesis, deduction, and induction. The methods of comparison, observation, detailing, grouping, and generalization were widely used. The system approach was applied to study the reasons and development forms of crisis state in pension systems in some countries, to the selection of instruments to manage them for the more effective revealing of important factors, prevention and decreasing the level of losses under unfavorable development of demographic and economic tendencies.

Results and discussion. Today, most countries of the world run two main types of pension systems: unfunded (PAYG) and defined contribution pension system. And, as to be shown further, the more popular is the defined contribution system due to the advantages it represents at the current stage of economic development.

The unfunded system, considering the current peculiarities, becomes less convenient. Its feature is the payment of pension contributions at the expense of the current income of people working on the territory of the country, hence the second name - pay-as-you-go.

The defined contribution system, in its turn, implies the contributions paid by the working generation that is accumulated (hence the name) and are used for the investments into different assets. In the future, the accumulated money along with the investment income is paid to the same employees after retirement.

It is possible to mention separately the conditionally defined contribution system that combines the elements of the unfunded and contribution systems. Under this system, an employee earns the *right for pension* owing to contributions. Upon the attainment of the pension age, the conditional accumulated pension capital of an employee is transformed into the annual payments [1].

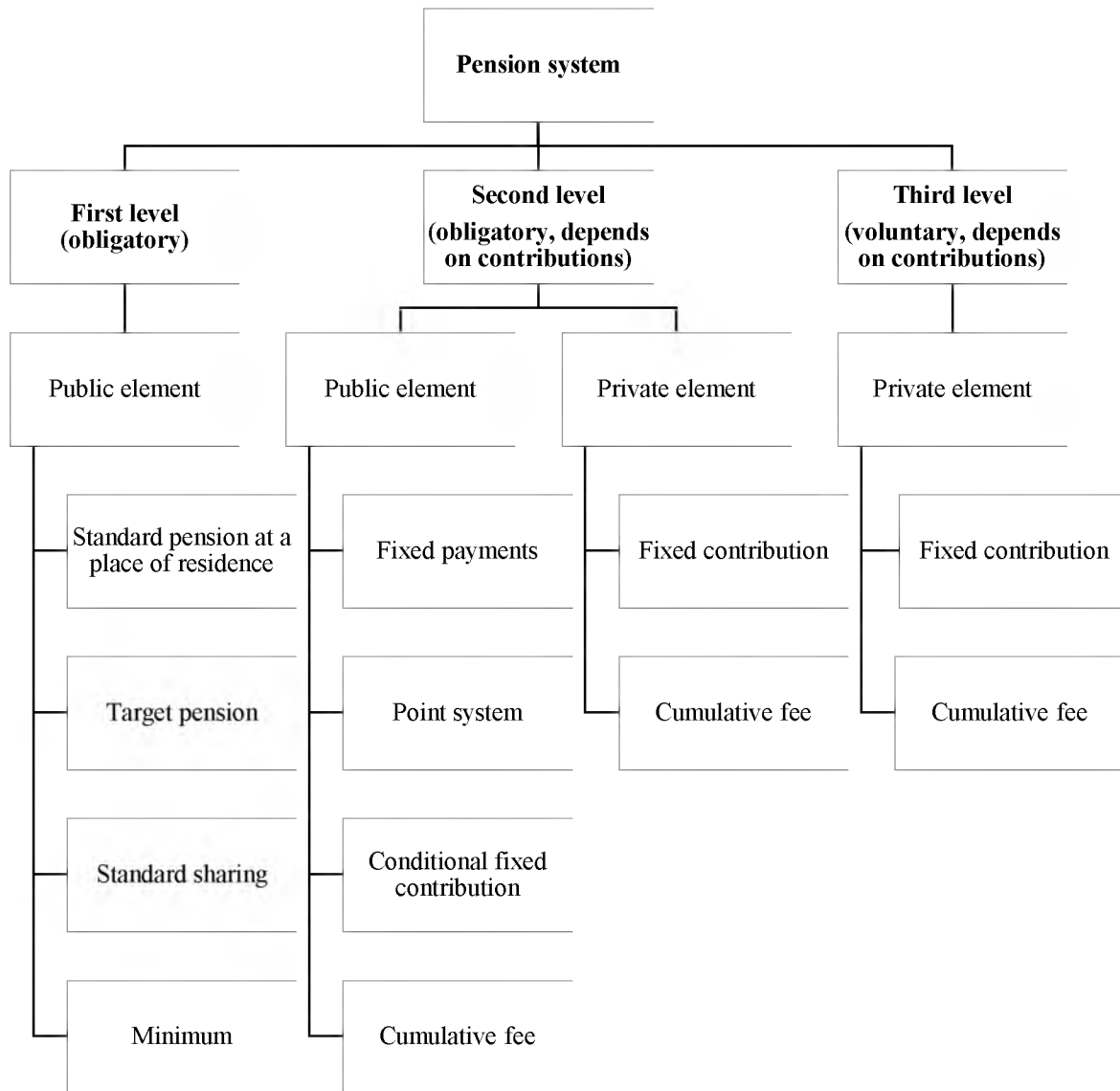
Most OECD countries apply the defined contribution system, in some cases using the elements of the conditional contribution system. At this, the pension systems of almost all countries are divided into three levels:

- Obligatory national aimed at creating minimal conditions for retiring people independently on their incomes and contributions;
- Obligatory combined that includes the governmental and private components depending on the contributions of a definite employee %
- Voluntary private depending completely on voluntary additional contributions of an employee.

According to the OECD report “Pension systems at a Glance 2019” Figure 1 shows the classification of the pension system levels in the OECD countries [2].

The standard pensions have two different forms: pension at a place of residence, and sharing pension for those who made contributions during the career. The pension size varies depending on the period of residence or the number of contributions but does not depend on the salary level during the career. Some countries, such as Norway and Sweden, instead of the standard pensions apply the target schemes checking the “necessity” in the standard pension; today, seven OECD countries pay the standard pension at a place of residence, these are: Canada, Denmark, Greece, Iceland, Israel, Netherlands, New Zealand; nine countries apply the base sharing scheme: Czech, Estonia, Ireland, Israel, Japan, Korea, Lithuania, Luxemburg, Great Britain [2].

The target pensions are paid upon concordance to definite criteria depending on a country. The size of the target pension depends on the income of a State from other sources, not on employee contributions. As a rule, the target pensions are used to smooth the inequality of income between wealthy and less wealthy pensioners so that the less wealthy could receive higher pensions. Almost all OECD countries have such methods of social protection.



Reference [2].

Figure 1 – Classification of pension system levels of the OECD countries

The minimum pension is either a guaranteed minimum of a definite scheme of contributions, or all combined schemes. The minimum pensions are paid in seventeen OECD countries, among them are Austria, Belgium, France, Hungary, Latvia, Mexico, and others [2]. The size of the minimum pension considers only a limited number of factors without checking the employee income – this ensures the minimum pension income and minimum wage. Besides, minimum pensions can be based on the national indicators calculated as the minimum threshold of allowances for indigent groups [3].

All described above schemes refer to the first, public obligatory level that, to some extent, exists in every country as guarantees a minimum income for pensioners independently on their income and length of service. Other schemes refer to the second level, also obligatory, that depends on the length of service or size of contributions, but still has a public component in addition to the private one. As of today, only Ireland and New Zealand in the OECD do not have pension schemes of the second level, and the Great Britain refuses gradually of them. Other countries have four types of schemes.

The schemes with fixed contributions for future pensioners are used in 17 OECD countries. In the other 10 countries, these are applied to the current pensioners. These are the most widely used schemes

implying the fixed contributions during the whole career of an employee. The pension income depends on the number of contribution years, allowance rates, and individual salary accounted for the pension.

Five OECD countries have the point schemes: the employment plans in France implemented by the social partners under the governmental control, and the public schemes of Estonia, Germany, Lithuania, and Slovakia. The employees earn pension points depending on the income level. Upon retirement, the sum of the pension points is multiplied on its cost and then transformed to usual pension contributions.

The plans with defined contributions are obligatory for future pensioners in nine OECD countries among which are Denmark, Latvia, Australia, Chili, Estonia, and Israel [2]. Under these schemes, the contributions arrive in an individual account. The accumulated contributions and investment incomes are transformed into a monthly pension upon retirement. In Denmark and Sweden, there are quasi-obligatory professional schemes of fixed contributions in addition to smaller obligatory public plans.

Five OECD countries (Italy, Latvia, Norway, Poland, and Sweden) have the schemes of *conditional* contribution with fixed payments. These are public schemes with a “pay-as-you-go” basis and individual accounts that apply the conditional rate of income to the paid contributions imitating the plans with the fixed contributions. The accounts are considered “conditional” in the sense that the remains exist only in the account books of the managing organization. Upon retirement, the accumulated conditional capital is converted to a monthly pension by a formula based on the expected duration of life. These schemes are relatively new development [2].

The third level is completely voluntary and private and, as a consequence, fully depends on the size of contributions by employees and their length of service. In some sense, the schemes of the third level are similar to the bank deposits, but with the difference that the contributions are managed by a special company and are converted to the pension payments by a definite formula.

Only four OECD countries have neither standard nor minimum pension: Australia, Finland, Germany, and the USA.

In New Zealand, the average size of the standard pension at a place of residence is a minimum 17% of the total average salary and no more than 40%. Norway and Sweden gradually terminate such payments. All OECD countries provide the target benefits to its citizens, but people living in Greece, Netherlands, and New Zealand cannot receive such benefits in addition to the standard pension at a place of residence. In Canada, Denmark, and Iceland the standard pensions at a place of residence do not decrease the target allowances. On average, for OECD, 16% of the total average salary can be received under the target schemes, and, in total, 20% considering the standard pensions at a place of residence.

As for the accumulating components of first level pensions, one-third of OECD countries have neither standard nor minimum pensions based on contributions. The quarter of the OECD countries provide the standard pensions based on contributions that, on average, amount to 14% of the average salary. The sizes vary from 6% of the average salary in Israel where these are paid as benefits to the standard pension at a place of residence, to 27% in Ireland. Almost in half of the OECD countries, the pensions with small contributions are brought up to a higher minimum level of pension, on average to 25% of average salary. These minimum pensions vary from the low, about 10% of the average salary in Czech, Hungary, and Latvia to high, about 40% in Turkey.

The mentioned above states that the obligatory insurance contributions form a base of the pensions system in numerous countries [5]. The payment of contributions, as a rule, is shared between an employee and employer. The most widespread criteria determining a right for a pension is reaching a definite age prescribed legally. In some countries, it is possible to retire earlier under definite conditions or continue working until the pension age. For example, in Germany, the pension age is 67 years for men and women, but it is possible to retire earlier. For this, it is necessary to pay the contributions determined in pension legislation equal to 0.3% of pension accumulations for each month of uncompleted service.

In France, every citizen has a right to retire at the age of 60. However, the standard full size of pension is paid if an employee’s length of service is forty or at the age of 65. If after the retirement a citizen continues working then he receives a benefit to a pension – 3% for each working year.

In the USA, one can retire having thirteen years of length of service and at the age of 65 for women, and 67 for men. However, under the earlier retirement, an American’s pension is by 25% less.

In China, the pension age is from 50 to 55 for women and 60 for men. Additional benefits have governmental officers – they can retire earlier if have been working for the government service 15 years or more.

The pension systems all over the world encounter a range of problems stipulated by global tendencies such as population growth, population aging, change of the market conditions due to digitization and automatization. All this generates additional load on the pension systems creating different problems including financial ones. These problems cause obstacles for the operation of the unfunded systems adopted earlier in many countries.

As the global experience shows there are two ways to solve the financial problems of the pension systems:

1. keeping the public unfunded pension system in reformed type with additional stimulation of development of voluntary pension schemes of the third level;
2. introduction of a new system of defined contribution or combined character financed from the diversified sources [6].

Besides the financial problems, the pension systems encounter problems related to the peculiarities of the country's economy, social policy, and imperfect functioning of the pension systems. For example, one of the acute problems of the pension systems functioning is a violation of payment transfer to accounts of the system participants. The transfer, as usual, is based on one of the following methods:

1. through the pension funds or taxation authorities, as in Sweden, Great Britain, and Russia;
2. through specialized enterprises and managing companies, as in Argentina or Chili.

However, none of the methods guarantees a reliable and continuous transfer of payments in a definite period. The first method shows significant delays due to the speed of large governmental authorities functioning; the second has errors in managing the payment flows due to which the investment income does not cover even the inflation [6].

Let's consider separately the investment risks related to the operation of the defined contribution pension system. It is assumed that in the long-term period the investment risks do not have much influence as they do in the short- and mid-term periods [7]. However, there are precedents when during the energy crisis in the 1970-s the stock market of the USA fell by 50% in real terms, and then during 10 years had been restoring its indicators to the values of the early 1970-s. In some other countries, such as the Great Britain, during the past hundred years, the stock market has been growing less than 2% per year in real terms, and this is a sensitive problem for pension funds functioning as long-term investors. As a rule, the investment risks, in such cases, are being decreased by several methods:

1. structuring of the investments portfolio, i.e. determine a stiff set of instruments indicating the maximum possible share in the portfolio;
2. application of a "cautious man" principle [7].

For instance, Belgium, Portugal, Denmark, Sweden, Germany, and Japan apply the first methods, and the USA, Australia, Canada, Great Britain, Netherlands, Ireland apply the "cautious man" principle. This principle means that when making decisions the pension fund should apply the logic of "cautious professionals" prioritizing equally the receiving of the investment income and preservation of the investment capital. The funds applying this principle contribute more to foreign assets and are less interested in the instruments with fixed income [7].

Thus, the defined contribution system also has some problems despite that it suits better for solving the problems of the contemporary labor market conditions. Its indisputable advantage before the unfunded system is the stimulation of accumulations that are transformed into investments, and also, stimulate the economy.

Basing on the stated above, it is possible to highlight the following advantages and disadvantages of each system (table 1).

Table 1 – Advantages and disadvantages of pension systems

Advantages	Disadvantages
Pay-as-you-go pension system	
<ul style="list-style-type: none"> • Fixed size of payments providing more confidence and certainty regarding the pension income. • It does not depend directly on the stock market. • More transparent regarding the defined contribution system. 	<ul style="list-style-type: none"> • It depends on demographic indicators and labor market conditions. • It has more inertia due to public management. • Adapts badly to the growing length of population life. • Affects significantly the national budget.
The defined contribution pension system	
<ul style="list-style-type: none"> • It does not depend on demographic indicators. • In its classic view, it does not affect the national budget. • Stimulates the accumulation of savings and increases the investment volume. • More flexible owing to numerous schemes and its combinations. 	<ul style="list-style-type: none"> • Pension size depends on the size of contributions. • It depends on the results of investment management. • Sensitive to imbalances in the economy, especially to inequality of income. • Less transparent comparing to the unfunded system.
Combined system	
<ul style="list-style-type: none"> • Combines the advantages of previous systems. • Social orientation: reallocation from rich to poor. • Financially stable, does not require national investment. 	<ul style="list-style-type: none"> • The accumulated funds do not belong to a contributor and are reallocated in the case of death or migration. • The size of the payments is not fixed. • It depends on the demographic situation and investment income.

Conclusion. The results of the analysis allow concluding that the application of the defined contribution system in Kazakhstan meets the global tendencies and has the potential to respond to all challenges appearing in the labor market. A logical trend of the pension system development in RK should be the improvement of the system flexibility, application of different schemes of pension contributions accumulation similar to the OECD developed countries. Besides, it is necessary to stimulate the appearance of the full-fledged market of defined contribution pension funds that could compete with each other for the employee contributions as only the competition conditions ensure that the investment management of contributions is aimed at maximum satisfaction of contributors' interests. The creation of such a market requires additional objective supervision of compliance with contributors' interests.

It is necessary to note that there are definite risks of the defined contribution system functioning in RK, among which the most significant are: inequality of population income, underdeveloped national stock market suggesting the limited set of investment instruments, currency risks when investing to foreign assets, non-transparency of pension accumulations management process, large public share in this sector aggravating the creation of a competitive market.

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ШЕТЕЛДІҢ ЖИНАҚТАУШЫ ЗЕЙНЕТАҚЫ ЖҮЙЕСІНІҢ МОДЕЛЬДЕРІ

Аннотация. Өткен ғасырдың соңында көптеген дамыған мемлекеттерде өмір сүру жағдайының ұзаруы мен туу деңгейінің төмендеуіне байланысты зейнет жастағы тұрғындар саны арта бастады. Бұл жайт еңбекке қабілетті тұрғындарға түсетін ауыртпалық деңгейін жоғарылата түсті, ал мемлекеттер зейнетақы төлемін жеткілікті деңгейде қамтамасыз ете алмады. Болжанбалы демографиялық өзгерістер үлестіруші зейнетақы жүйесін сақтаудың қажетсіздігін көрсетті. Осыдан кейін жинақтаушы зейнетақы жүйесіне өтуден басқа амалдың жоқтығын мойындауға болады.

Солай бола тұра жинақтаушы зейнетақы жүйесінің артықшылығымен қатар, кемшілігі де бар. Зейнетақы реформалары бар елдерде жинақтаушы тетікті ендіру мен қызметінің тиімділігіне, сондай-ақ аталған өзгерістерді халықтың қабылдауы барысында мәселелер туындауда. Бұл мәселелер әсіресе Қазақстан үшін көкейкесті, өйткені қолданыстағы зейнетақы жүйесі жақын арада толыққанды қызмет ете алмайды және қайта құруды қажет етеді. Осы және басқа да себептердің жиынтығы бірқатар шет мемлекеттердегі жинақтаушы зейнетақы жүйесінің тетіктерін толық саралау қажеттігін көрсетеді.

Зерттеу әдістемесі жүйелік тәсілді, талдау және синтез, индукция және дедукция әдістерін қолдануға негізделген. Жүйелік тәсіл бірқатар елдің зейнетақы жүйесінің дағдарысқа түсу себептері мен нысандарын

зерттеу, оларды басқарудың тиімді құралдарын таңдау, демографиялық және экономикалық үрдістердің оңтайлықсыз дамуы барысындағы залал деңгейін азайтуға және алдын алу үшін қолданылған.

Мақаланың мақсаты – шет мемлекеттердегі жинақтаушы зейнетақы жүйелерін қалыптастырудың экономикалық негіздерін саралап, Қазақстанда зейнетақы жүйесін қайта құру үшін негізгі үрдістерді анықтау. Осы мақсатқа қол жеткізу үшін мақалада зейнетақы жүйесінің негізгі типтері мен деңгейлері зерттелген. Зейнетақы жүйелерінің аталған элементтерін зерттеу экономикалық ынтымақтастық пен даму ұйымы мемлекеттерінің мысалы негізінде жүргізілген. Зерттеу үлестіруші, жинақтаушы және аралас зейнетақы жүйелерінің артықшылықтары мен кемшіліктерін айқындауға мүмкіндік берді. Қазақстандық зейнетақы реформасын іске асыруда шетел тәжірибесін қолдану қажеттілігін негіздей отырып, оны арықарай дамыту және қайта құру бағыттары ұсынылған, бұл бағыттар Қазақстандағы зейнетақы жүйесі тиімділігінің артуы мен оның жалпыәлемдік стандарттарға жақындауға септігін тигізеді. Қазақстандағы жинақтаушы зейнетақы жүйесі қызметіндегі маңызды тәуекел ретінде мына мәселелер анықталған: тұрғындар табысының әркелкілігі, ұлттық қор нарығының жеткіліксіз дамуы, шетел активтеріне инвестициялар жасаудағы валюталық тәуекел, зейнетақы салымдарын басқару үдерісінің ашық еместігі, бәсекелік нарықты құруға бөгет жасайтын факторлардың болуы – яғни осы сектордағы мемлекеттің үлкен үлесі.

Зерттеу нәтижелері заманауи экономикалық және демографиялық жағдайдағы зейнетақы қамсыздандыру жүйелерін дамыту стратегиясын анықтайтын бағдарламалық сипаттағы құжаттарды даярлауда қолданыс табуы мүмкін. Жұмыста ұсынылған ұйғарымдар мен зейнетақы жүйесін жетілдіру бойынша ұсыныстар Қазақстанда зейнетақы жүйесін қайта құруда пайдаланылуы мүмкін.

Түйін сөздер: зейнетақы жүйесі, қаржыландырылмайтын зейнетақы жүйесі, белгіленген жарнасы бар зейнетақы жүйесі, сақтандыру төлемі, шетелдік тәжірибе.

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МОДЕЛИ НАКОПИТЕЛЬНЫХ ПЕНСИОННЫХ СИСТЕМ ЗАРУБЕЖНЫХ СТРАН

Аннотация. В конце прошлого века во многих развитых странах наблюдалось увеличение количества населения пенсионного возраста вследствие увеличения продолжительности жизни и сокращения рождаемости. Эти обстоятельства увеличили нагрузку на трудоспособное население, и многие государства уже не могли обеспечить достойный уровень пенсионных выплат. При этом происходящие и прогнозируемые демографические изменения сделали бесперспективным сохранение распределительной пенсионной системы. Из этого следует, что переход к накопительной пенсионной системе практически не имеет альтернативы.

Вместе с тем, накопительная пенсионная система имеет не только свои плюсы, но и свои определенные минусы. Страны, проводящие пенсионную реформу, сталкиваются с проблемами, связанными с эффективностью внедрения и функционирования накопительного механизма и восприятием этого механизма широкими слоями населения. Эти проблемы особенно актуальны для Казахстана, где существующая пенсионная система уже в ближайшем будущем не сможет полноценно функционировать и требует перестройки. В совокупности эти и другие причины обусловили необходимость подробного изучения механизма накопительных пенсионных систем в ряде зарубежных стран.

Методология исследования основана на использовании системного подхода, приемах анализа и синтеза, дедукции и индукции. Системный подход был применен к изучению причин и форм проявления кризисных состояний пенсионных систем ряда стран, выбору инструментов управления ими для более эффективного выявления значимых факторов, предупреждения и снижения уровня потерь при неблагоприятном развитии демографических и экономических тенденций.

Цель статьи заключается в изучении экономических основ формирования накопительных пенсионных систем в зарубежных странах и выявлении основных тенденций для выявления возможностей для Казахстана в проведении пенсионной реформы. Для достижения поставленной цели в статье исследованы основные типы пенсионных систем, а также их существующие уровни. При этом анализ указанных элементов пенсионной системы был осуществлен на примере стран Организации экономического сотрудничества и развития. Проведенное исследование позволило выявить преимущества и недостатки распределительной, накопительной и смешанной пенсионных систем. На основе вывода о необходимости использования зарубежного опыта в реализации казахстанской пенсионной реформы предложены конкретные направления дальнейшего её реформирования, призванные увеличить эффективность пенсионной системы в Казахстане и приблизить ее к общемировым стандартам. В качестве значимых рисков функционирования накопительной системы в Казахстане определены: неравенство доходов населения, неразвитый национальный фондовый

рынок, предлагающий ограниченный набор инструментов инвестирования, валютные риски при инвестировании в зарубежные активы, непрозрачность процесса управления пенсионными накоплениями, большая доля государства в этом секторе, затрудняющая создание конкурентного рынка.

Результаты исследования могут быть использованы при разработке документов программного характера, определяющих стратегию развития систем пенсионного обеспечения в современных экономических и демографических условиях. Предложенные в работе выводы и рекомендации по совершенствованию пенсионного обеспечения могут быть использованы при проведении пенсионной реформы в Казахстане.

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