PART II
REFORMING THE PRIVATE PENSION SYSTEM OF UKRAINE IN THE CONTEXT OF EUROPEAN INTEGRATION AND POST-WAR RECOVERY

CHAPTER 4
THEORETICAL AND METHODOLOGICAL PRINCIPLES OF FUNCTIONING OF NON-STATE PENSION FUNDS

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4.1 Theoretical Foundations of the Private Pension System

Pension provision is one of the most acute problems in Ukraine's modern economy. This problem has been the subject of numerous scientific publications, among which are the works of such authors as: Bezkrovnyi O., Aranchii V., Shevchenko V. [171], Galkin V.L. [172; 173; 174], Lazor O., Kolesnyk O. [175]. The common thread in these publications is that Ukraine is currently facing the problem of an aging population and low birth rate, which leads to a decrease in the number of able-bodied citizens paying contributions to the Pension Fund compared to the number of people in need of pension provision.

Many pensioners in Ukraine receive very low pensions that do not provide a decent standard of living; this is especially true for those who worked in low-wage sectors. Ukraine's pension system faces financial problems due to insufficient financial resources to pay pensions, which can lead to delays in payments or even the threat of non-payment. There are problems with corruption and lack of transparency in the country's pension system, which may lead to illegal payments or reduced pensions for many people. Structural reforms to the pension system are needed to ensure its sustainability and make it more equitable for all categories of citizens. Comprehensive measures are needed to address these issues, including reforming the pension system, increasing funding, fighting corruption, and ensuring social justice for all pensioners.

Pension provision is a social security system that provides for the payment of a certain amount of money to a person who has reached a certain age (retirement age) or meets certain other criteria, such as disability or loss of a breadwinner. These payments are intended to ensure the financial well-being of a person after the termination of employment. Pensions can be public or private. Public pension systems are funded by taxes or other mandatory contributions from individuals and employers. Private pension provision involves investing money in pension funds or other investment instruments to accumulate sufficient capital to pay pension benefits in the future. These systems can exist separately or in conjunction with public pension programs. The purpose of pension provision is to ensure the material well-being and financial stability of individuals who have retired or are unable to work for other reasons.

All issues related to pension provision in Ukraine are regulated by the Pension Fund of Ukraine [176], which provides information on services, documents, statistics and vacancies related to pension provision in Ukraine.

In Ukraine, pension law is a component of social security law. The concept, features, classification and subjects of pension law have been studied by legal scholars in different periods of formation of the social security law branch. As defined by A. Skorobagayko, "a pension is a regular monthly cash payment which is the main source of a pensioner's livelihood and which is provided on general, preferential or special grounds, in the amounts and in the manner prescribed by law, financed from the Pension Fund, budgets of other insurance funds and funds allocated by the State and serves as an important guarantee of the implementation of the social function of the State" [177]. In our opinion, a pension is a regular payment provided to a person upon reaching a certain age or due to disability, as well as in other cases determined by the country's legislation; it is a type of social security aimed at providing financial support to persons who have lost the ability to work or have reached a certain age when work becomes more difficult or impossible.

Therefore, the following types of pensions can be distinguished, in particular: state pensions, which are provided on behalf of the state in accordance with the conditions set by law; private pensions, which are provided by private pension funds or companies as part of additional pension provision; and social pensions, which may be provided to individuals with low incomes. The amount and conditions of pensions vary from country to country. Pensions may be based on payments made by an individual during his or her working career or be a fixed or determined percentage of average salary or other factors.

The set of legal, economic and organizational institutions and norms established in Ukraine aimed at providing citizens with material support in the form of a pension constitute the pension system of Ukraine. The issue of formation of the Pension System of Ukraine is studied in the works of Bila-Tiunova L. R. [178], Korol T. [179]. On January 1, 2004, the Ukrainian pension system was restructured by the Law of Ukraine "On Non-State Pension Provision". This law defined the basis for the formation and operation of a voluntary NPF in Ukraine. According to this Law, the NPF system is an integral part of the defined contribution pension system based on the principles of voluntary participation of individuals and legal entities, except as otherwise provided by law, in the formation of pension savings in order to provide APF participants with additional pension benefits to the mandatory state pension insurance.

According to this law and the Law of Ukraine "On Compulsory State Pension Provision" [180], the pension system in Ukraine consists of three levels: the pay-as-you-go system of compulsory state pension insurance, the defined contribution system of compulsory state pension insurance, and the non-state pension system. The latter is an additional way of providing citizens with old-age pension benefits in addition to the state pension system. It is based on the voluntary participation of citizens, employers and their associations, which independently form pension savings.

Overall, Ukraine's pension system has several key features:

– Under Ukrainian law, the retirement age depends on gender and other factors. For example, different retirement ages are set for men and women. There are also certain categories of citizens who are entitled to a pension without regard to age (e.g., disabled persons).

– Ukraine has several types of pensions, such as old-age pensions, disability pensions, social pensions, etc. In addition, there is a state pension system and the possibility to participate in private pension funds.

– Pensions are financed by the Pension Fund of Ukraine, which is formed from contributions made by employers and employees; there is also government funding to cover the Pension Fund's deficit.

– In 2017, Ukraine launched a pension reform aimed at improving the financial sustainability of the system and ensuring a more equitable distribution of pension benefits; it includes an increase in the retirement age and other changes.

– In addition to the state pension system, Ukrainian citizens can participate in non-state pension programs provided by various financial institutions and companies.

In summary, the Ukrainian pension system provides citizens with retirement benefits and consists of three complementary pillars. The first pillar is a mandatory state pension, which is paid to all citizens who have reached retirement age and have completed their work record. This pillar provides a basic level of pension benefits.

The second pillar is the defined contribution mandatory state pension insurance. This pillar includes contributions from individuals, employers, and their associations that are accumulated in individual pension accounts. This pillar provides an additional level of pension benefits. The third pillar is the private pension system.

This is a voluntary system in which individuals, employers and their associations can save for their retirement on their own. This level provides the highest level of pension payments. Demianchuk O. I. and Nychyporuk A. A. define that the purpose of this system is to provide citizens with additional pension benefits financed through contributions to private pension provision, as well as through investment income earned from these contributions. In their view, private pensions can play an important role in solving pension problems in Ukraine and other countries. It can complement the state pension system and provide citizens with additional opportunities to secure their financial future after retirement [181]. The significance of non-state pension provision is illustrated in Figure 4.1.

It is important to keep in mind that non-state pension provision should be carefully regulated by the state to avoid possible risks to citizens' pension savings.

Non-state pension provision has a clearly defined social focus and solves several important tasks: providing additional social protection to the population alongside state pension insurance; expanding opportunities for investment in the national economy; creating conditions to stimulate the development of the capital market, reduce the cost of loans and increase the liquidity of the stock market; and improving the standard of living of citizens when they reach retirement age.

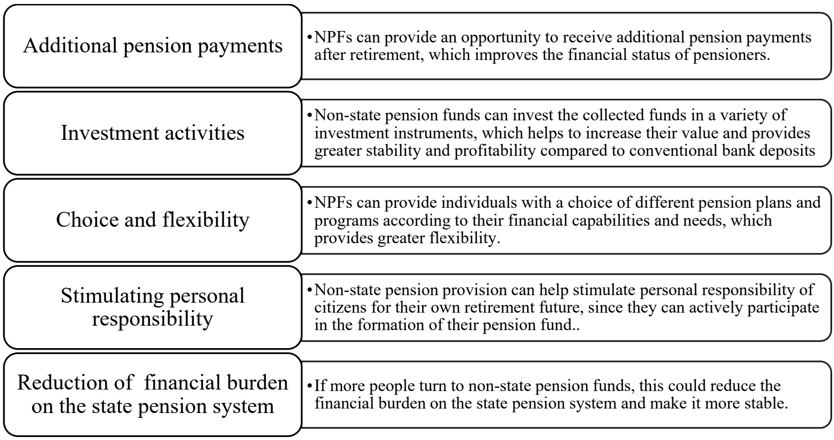

Figure 4.1 – Significance of non-state pension provision

Source: summarized by the author based on [182]

The non-state pension provision system is an integral part of the defined contribution pension provision, which is based on the voluntary participation of individuals and legal entities in the formation of pension savings in order to receive additional pension benefits upon retirement, in addition to those provided by the state. Modern aspects of the formation of the non-state pension provision system are studied in scientific works of Ukrainian scholars: Vyhovska V. [183]. Gaiduk I. S. [184]. Didenko L. V. and Titor V. S. [185], Demianchuk O. I. and Nychyporuk A. A. [186], Marich M. and Schuper A. [187], Pidlypna R. P. [188], Rudyk V. K. [189], Tatar N. B. [190; 191]. The key results of the above research are summarized in Table 4.1.

A general trend that can be identified from the analysis of these articles is an active interest in studying the non-state pension provision system in Ukraine and finding ways to improve it. Various aspects of the non-state pension provision system have been studied in the context of the functioning of non-state pension funds (NPFs), their investment strategies, the dynamics of pension payments, and the contracts concluded. The main conclusions from these articles can be summarized as follows: the studies provide detailed data on the dynamics of non-state pension provision development, including an increase in the number of pension contracts concluded and expansion of their assets, which indicates the growing popularity of non-state pension provision among the population; the articles consider various areas of investment of pension assets in Ukraine, which may include various types of financial instruments that help NPFs increase their assets and ensure stable pension payments; the analysis of the articles indicates a p Overall, the study of the non-state pension provision system in Ukraine is an active and promising area where some progress has already been made, but there are still many tasks and challenges that need attention and improvement to ensure the stability and efficiency of the pension system in the future.

Table 4.1 – Results of research on non-state pension provision system in Ukrainian scientific thought

Researcher	Main results
1	2
Vyhovska V. [192]	This article discusses the need for a comprehensive analysis of the problems of non-state pension provision system in Ukraine. The study confirms the advantages of this system, but reveals problems such as the high cost compared to the low incomes of working citizens and the lack of reliable financial instruments. The article analyzes the participants and forms of pension payments in the non-state pension provision system, provides a quantitative characterization of the functioning of non-state pension funds, and highlights the positive impact of this system on the national economy and the welfare of citizens through the use of accumulated funds as a source of investment resources.
Gaiduk I. S. [193]	The article analyzes the current state of the non-state pension provision system in Ukraine, develops a hierarchical model to systematize its problems, and explores key aspects of its development as a form of additional social protection. The authors define the main content and roles of the non-state pension provision system, taking into account the peculiarities in the period of transformation, and determine the prospects for development. It is noted that the problem of non-state pension provision system in Ukraine is growing annually due to the growing number of pensioners by 2050. The authors propose two possible solutions: increasing payroll deductions or reducing pension payments. The authors emphasize the need to study the possibilities of reforming the existing non-state pension provision system and developing effective tools for stable and reliable provision of pension funds

Continuation of the table 4.1

1	2
Didenko L. V. and Titor V. S. [194]	The article considers the aspects of the implementation of the non-state pension provision system in Ukraine through financial intermediation. Particular attention is paid to creating a favorable environment for attracting financial institutions, developing effective financial products and establishing regulatory mechanisms to ensure the stability and reliability of the system. It is noted that these measures contribute not only to the development of the non-state pension provision system, but also to the overall strengthening of the country's financial infrastructure and ensuring financial stability in the social protection system.
Demianchuk O. I. and Nychyporuk A. A. [195]	The article highlights important aspects of pensions and social protection in Ukraine. The study focuses on the relevance and efficiency of the pension system in the country. The problems that complicate the functioning of the pension system in Ukraine are highlighted. One of the key difficulties is the instability and insufficient funding of the pension system in Ukraine, which leads to low pensions and a shortage of financial resources, making life difficult for pensioners. There are also problems in the management and distribution of pension funds that need to be addressed immediately. Attempts to reform the pension system point to the need to change and improve approaches to pension provision. The most important task is to develop effective mechanisms for managing pension funds and ensuring the reliability and sustainability of pension systems, which will allow pensioners to enjoy a decent standard of living in Ukraine.
Maric M. and Schuper A. [196]	The article discusses key aspects of non-state pension provision system development in Ukraine. The authors believe that non-state pension provision system can provide citizens with additional pension payments, increase the average pension in the country and partially solve the problem of the Pension Fund of Ukraine deficit. The authors propose measures aimed at expanding the geography and improving the efficiency of non-state pension provision system in Ukraine.
Pidlypna R. P. [197]	The article discusses important aspects of non-state pension provision system development in Ukraine. The authors analyzed the dependence of the volume of pension savings on the level of income of the population, defined the mechanism for the implementation of non-state pension provision system, conducted territorial differentiation of non-state pension institutions and summarized the socio-economic indicators of their activities in recent years.

Continuation of the table 4.1

	The authors also examined the peculiarities of accumulation and use of pension assets of non-state pension provision system, considered the mechanisms of capital protection by state institutions, as well as various types, features and possibilities of pension payments by non-state institutions. The authors identified the role of digitalization for the effective development of non-state pension provision system and emphasized that institutional regulation of non-state pension provision system schemes, coordinated use of appropriate tools and control with risk management functions contribute to better protection of the interests of pension program participants.
Rudyk V. K. [198]	The article examines the evolution of the non-state pension provision system in Ukraine. The authors found that voluntary funded pension programs are not popular among the population. They identified the main challenges and factors that hinder the development of non-state pension provision in Ukraine. Particular attention is paid to the importance of introducing tax-free voluntary automatic individual pension accounts in banks. The authors also emphasize the need to improve the reliability of non-state pension funds (NPFs). In order to assess the reliability of NPFs, it is proposed to analyze such parameters as the level of public confidence in the fund, the fund's ability to pay out funds, and its financial condition. The author emphasizes the need to improve the legislative framework of the third pillar of the national pension system to protect the property rights of investors and rationalize the taxation of participants in the funded pension program. An additional priority goal is to reduce and optimize the costs of administering individual pension accounts of participants in funded pension programs.
Tataryn N., Chepil Y. and Dunets I. [199]	The article provides a comprehensive analysis of the non-state pension provision system in Ukraine, including the functioning of NPFs. The authors examined the functions, principles and objectives of NPFs, as well as analyzed the dynamics of key performance indicators, including the number of pension contracts concluded and the number of depositors in the period from 2018 to 2020. The article also highlights the main areas of investment of pension assets in Ukraine and presents a list of the leading non-state pension funds in terms of assets, number of participants and pension payments in 2020. The article also describes the experience of developing non-state pension systems in foreign countries. The authors identify the main problems and shortcomings of non-state pension provision system in Ukraine and suggest ways to improve it in order to promote Ukraine's economic development.

Source: developed by the author based on a critical analysis of the literature

Thus, the non-state pension provision system is based on several basic principles that define its functioning and purpose (Figure 4.2).

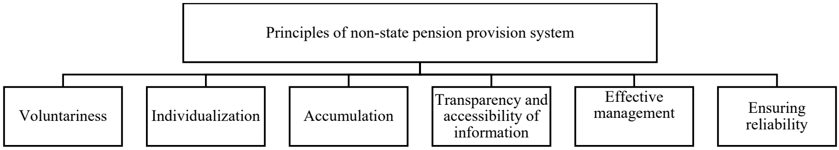

Figure 4.2 – Principles of non-state pension provision system

Source: summarized by the author based on the analysis of the literature

Therefore, participation in this system should be voluntary for citizens and no one should be forced to participate in non-state pension funds or programs. The non-state pension provision system should allow for the individualization of each participant's pension, which means that the amount of the pension can depend on the contributions of each participant and the investment choices they make. The non-state pension provision is based on the idea that members save during their working lives for later retirement benefits; and members make regular contributions or invest money to secure a future pension. Participants should have access to clear information about the status of their pension savings, investment strategies, and the value of their assets. Transparency is key to building trust in the system.

Non-state pension provision funds and programs should have an effective system for managing funds and investment portfolios to maximize returns and minimize risks. The system should have mechanisms in place to protect participants' pension savings, which may include insurance, regulation, and other measures to prevent losses in the event of financial difficulties of the funds or other financial institutions. These principles help to create a stable, transparent, and reliable non-state pension provision system that meets the needs of participants and contributes to their financial security in retirement.

The non-state pension provision system includes several key components that contribute to the provision of pension benefits to individuals at retirement age (Figure 4.3).

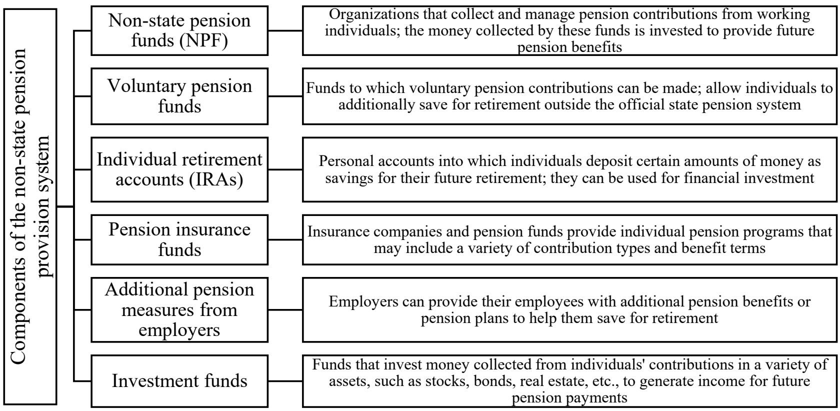

Figure 4.3 – Components of the non-state pension provision system

Source: summarized by the author based on [200]

These components help to create a variety of retirement options for individuals, helping them to save and ensure financial stability when they reach retirement age.

Ukraine has a comprehensive pension system that includes both state and non-state elements. Comparison of the main features of both systems allows to formulate certain conclusions about the peculiarities of their use (Figure 4.4).

It is clear that in the context of pensions in Ukraine, the non-state system often serves as a complement to the state system, allowing citizens to receive more money for retirement. However, the use of these two systems has different risks, as the state system is usually more reliable but less flexible; the private system may lead to a higher level of risk, but may also have a higher profit potential. Speaking about individualization of pensions, it is worth noting that the non-state pension provision system emphasizes individual contributions and investment strategies, while the state system provides social protection to the population as a whole on equal terms. Both systems in Ukraine have their advantages and disadvantages, and their joint operation allows for a wider range of opportunities for citizens in terms of PP.

Pension provision	Non-state pension provision
• Mandatory contributions • Source of funding • The main source of funding is compulsory contributions from employees and employers • Wide coverage • All able-bodied individuals and employers are required to contribute • Amount of pensions • Standardized benefits • Pension amounts are determined by standards related to the number of years of contributory service and average salary • State participation • State guarantees • The state sets the rules and guarantees the payment of pensions. In case of financial shortages, it may be difficult to ensure sufficient pensions • Indexation and reforms • State control • Pension amounts are periodically indexed and can be changed by government decision. Reforms of the pension system are controlled by the government	• Voluntary contributions • Source of funding • Private pension provision is based on voluntary contributions from individuals and may include employers and individual participants • Amount of pensions • Individual conditions • The amount of pensions depends on the contributions and investment activity of the fund. Individual conditions for participants are possible • State participation • Minimal control • The state establishes general rules of operation, but allows non-state funds to determine investment conditions and strategies • Indexation and reforms • More flexibility • Flexibility in investment strategies allows for competitiveness and high returns

Figure 4.4 – Comparison of state and non-state pension provision

Source: summarized by the author based on the analysis of the literature

Therefore, it can be concluded that the use of non-state pension provision in Ukraine can have several advantages for citizens: non-state pension provision allows individuals to choose individual savings strategies and select financial products that meet their needs; unlike state PP, non-state can provide opportunities to increase the size of pensions through efficient investment strategies and savings; non-state pension provision participants can choose which assets to invest within their portfolio, which provides flexibility and the ability to influence the level of risk and return; individual non-state pension provision programs can include additional benefits such as health insurance, financial counseling, and other services; for self-employed individuals or those working in consultancy or temporary positions, non-state pension provision can be an effective means of establishing a pension fund; NPFs are forced to compete for clients, which can help to innovate and improve services for participants; investments in NPFs can provide inflation protection, as some investments can grow in value faster than inflation; attracting private capital to invest in the economy through non-state pension provision can contribute to economic development.

Note that non-state pension provision is also not without risks, such as possible losses in financial markets and variations in pension amounts, and requires careful selection and management, which have been particularly acute in Ukraine during the war. Therefore, it is necessary to review and improve the functioning of the non-state pension provision system in Ukraine in the context of post-war recovery.

In general, the non-state pension provision system is an important component of the overall pension system of Ukraine; it allows citizens to receive additional pension payments alongside the state pension. The system is based on the principles of voluntary participation, individualization, funded accumulation, transparency, effective management and protection of pension savings. The key elements of the system are NPFs, banking and insurance institutions, investment companies, and other financial intermediaries. Compared to the state system, the non-state system is more flexible and focused on individual needs, but it also carries a higher level of risk. Participation in private pension programs can have advantages, such as the possibility of increasing the size of the pension, protection against inflation, and contributing to economic development. At the same time, the system has a number of challenges that need to be addressed as part of Ukraine's post-war recovery to ensure its sustainability.

4.2 Mechanisms of Functioning of Non-State Pension Insurance Funds

One of the most popular elements of non-state pension provision system is the non-state pension insurance fund. Pension insurance is a system through which individuals pay contributions for a certain period of their lives and in return receive pension payments at retirement. The system is designed to provide financial security for retired individuals who are older and unable to work fully. Citizens pay certain amounts (contributions) to the pension fund during their working lives. These contributions can be made as separate payments or deducted from their income. The money collected from the contributions is invested either in special pension funds or in other investment instruments. Profits from these investments are used to increase the pension fund. Upon reaching a certain age or other conditions, eligibility for a pension is determined. Pension payments may be made on a monthly basis or in a lump sum. The conditions for receiving a pension may include reaching a certain age, disability, length of insurance coverage, etc. The state often establishes rules, standards and regulations to ensure the sustainability of the pension system and protect the rights of pensioners. Pension insurance aims to provide financial security for individuals in their later years and to ensure that they have an adequate standard of living after they stop working.

A non-state pension fund is an organization or entity that provides certain services for keeping and investment of funds that people contribute to the fund for their future retirement. As noted by Rippa M. B. and Shimko J. R., these funds operate outside the state pension system and can provide additional opportunities to preserve and increase financial resources for retirement; participants contribute to these funds and their funds are invested to provide future retirement income. The authors propose an approach to interpreting the concept of non-state pension insurance funds [201] (Table 4.2.)

The first three approaches do not take into account the fact that non-state pension insurance funds remain a key element in the financial form of citizens, playing an important role in planning their finances. From this point of view, it is proposed to consider the economic meaning of non-state pension insurance funds as a special legal and organizational form of financial institution aimed at forming an individually significant level of pension provision for citizens through the redistribution of their income between the working and non-working phases of life. This is achieved by accumulating pension savings, preserving and increasing their real value, and making pension payments on individual terms. Thus, this approach reveals the importance of NPFs in the financial planning of citizens throughout their life cycle in order to ensure social status in case of disability.

An NPIF is an organization exclusive activity of which is non-state pension provision, including early non-state pension provision and compulsory pension insurance. Such activities are carried out by the fund on the basis of the license conditions for the administration of non-state pension funds issued by the NSSMC. By now, the NPIF institute has undergone many changes regarding its organizational and legal form, expansion of functions, changes in pension schemes, investment structure, mechanisms of accumulation, composition of supervisory bodies and their powers, etc. [203]. The scheme of functioning of non-state pension funds includes:

an asset management company, a custodian bank, depositors, administrators and participants. The scheme of NPFs functioning is presented in Figure 4.5.

Table 4.2 – Approaches of scholars to the interpretation of the concept of non-state pension insurance funds

Approaches of scholars to the interpretation of the concept of non-state pension insurance funds	Advantages and disadvantages of approaches to non-state pension insurance funds
This is a special organizational and legal form of a non-profit organization (non-entrepreneurial company) for social security	does not take into account the fact that the activities of the non-state pension insurance funds are related to the commercial use of citizens' money
It is a social, intermediary, savings, investment and insurance institute	ambiguity in the interpretation of the concept of the institute, blurred boundaries of non-state pension insurance funds functioning
It is a specialized financial institution that has the status of a collective institutional investor	does not take into account that the purpose of the NPF is non-commercial in nature
This is a special organizational and legal form of financial institute designed to form an individually significant level of pension provision for citizens by redistributing part of their income between the working and incapacitated phases of the life cycle by accumulating pension savings, preserving and increasing their real value and further making pension payments on individual terms	reveals the importance of non-state pension insurance funds in planning the personal finances of citizens throughout their life cycle in order to maintain social status in case of disability ambiguity in the interpretation of the concept of the institution, blurred boundaries of non-state pension insurance funds functioning

Source: compiled by the author on the basis on [202]

Mechanisms of non-state pension insurance funds functioning. NPFs operate on the basis of specific *mechanisms* that differ from the state pension system. The main mechanisms of NPF functioning are shown in Figure 4.6.

The mechanisms of this system are aimed at ensuring the safe preservation of funds and providing participants with a decent pension in the future. Ukraine has specific *procedures for establishing and registering* NPIFs. Below is a general overview of the mechanisms that can be identified in the context of the Ukrainian system (Table 4.3).

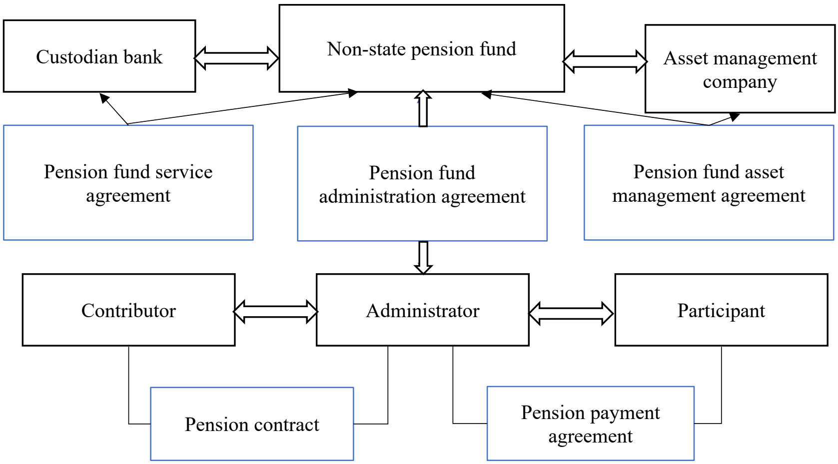

Figure 4.5 – Scheme of NPF functioning

Source: created by the author

These steps interact to form a comprehensive process for establishing and registering a non-state pension fund in Ukraine. However, it is important to note that this process may be further detailed in accordance with changes in legislation and regulation.

The mechanisms of NPIF's funds accumulation in Ukraine are determined by its functions and tasks, which are aimed at providing pension insurance and accumulating funds for future pensions (Table 4.4).

Taking into account these mechanisms, the NPIF creates a platform for accumulation and effective financial management to ensure a decent level of pension provision for its members.

The NPIF'*s investment mechanisms are* the specific strategies and methods used to allocate financial assets to generate returns and maximize the value of the portfolio for future pension benefits. The main stages of the NPIF's investment process are shown in Table 4.5.

Such mechanisms may include a variety of investment instruments such as equities, bonds, real estate, infrastructure projects, etc. NPIFs choose their strategies according to various factors, such as risk duration, market conditions, financial objectives, and risk tolerance.

Creation and registration

The fund is formed and registered in accordance with the laws of the country. License to provide pension insurance services is obtained.

↓

Funds accumulation

Fund participants make regular contributions or invest their money in the fund. The fund creates pension capital, which is accumulated on individual accounts of participants

↓

Investment of funds

The fund manages pension assets by investing in a variety of investment instruments (stocks, bonds, real estate, etc.). The goal is to ensure capital growth and maximize returns

↓

Active management

The fund provides active management of pension assets to maximize returns and reduce risks. Adoption of investment strategies in accordance with market conditions and the financial condition of the fund.

↓

Individual accounts

Each participant has an individual account that reflects his or her contributions and accumulated pension capital. Information on the account status is regularly sent to participants

↓

Pension payments

Upon reaching retirement age or other conditions, the fund makes pension payments from the accumulated capital on individual accounts

↓

Regulation and supervision:

The foundation's activities are regulated by the relevant legislation. A state body or commission may supervise the functioning of the fund.

Figure 4.6 – Mechanisms of NPF functioning

Source: created by the author

Some NPFs may favor conservative investments, such as bonds, to provide stability, while others may invest in equities and other risky assets to generate higher returns at the expense of greater risk. Investment mechanisms may also include portfolio diversification, choosing the optimal mix between different asset classes, and risk management strategies.

Table 4.3 – Procedures for establishing and registering an NPIF

Stages	Procedures	Content of activities
Preparatory	Preparation	Founders, who can be individuals or legal entities, take preparatory steps, such as developing a concept, defining the strategy and goals of the fund
	Creation of the Charter	The foundation's charter should be developed, which should meet the requirements of the law and include basic provisions on the objectives, structure and functions of the fund
Registration with state authorities	Submission of application	Founders submit an application for registration of the fund to the National Securities and Stock Market Commission (NSSMC)
	Submission of documents	Along with the application, a package of documents is submitted, which may include the charter, protocols of incorporation, documents confirming financial stability, and other necessary materials
	Registration and evaluation	The NSSMC analyzes the information provided, checking its compliance with the law and the presence of all mandatory elements
	Licensing	If all the requirements are met and the fund successfully passes the registration stage, it can obtain a license to operate
Establishing structure and governance	Establishment of governing bodies	The fund shall form its governing bodies, such as the Management Board and the Supervisory Board, which will be responsible for strategic management and oversight
	Agreements and contracts	The fund enters into agreements and contracts with financial institutions, banks and other partners to provide the necessary financial services
Commencement of business	Attracting contributions	The fund begins to actively attract participants who make their own pension contributions
	Investments and operations	The fund starts investing the contributions received in various investment instruments to generate profit for the benefit of participants

Source: developed by the author

Table 4.4 – Mechanisms NPIF's funds accumulation

Source of funds	Method of accumulation	Content of activities
Contributions of participants	Payments from able-bodied persons	Participants of NPIF who are employed and earn income are required to make mandatory contributions to the fund. These contributions can be determined as a percentage of salary and are allocated to each participant's pension account
	Voluntary contributions	Participants have the opportunity to make additional voluntary contributions to increase the amount of accumulated funds and improve the level of their future pension
Investment of funds	Formation of an investment portfolio	The fund invests its accumulated assets in a variety of financial instruments, such as stocks, bonds, real estate, etc., with the aim of generating a return
	Portfolio valuation and rebalancing	The fund constantly evaluates the financial condition and risks of its investment portfolio, makes adjustments and rebalances the asset allocation if necessary to ensure optimal return and minimize risks
Profit generation	Receiving income from investments	The profit earned from the investment of the fund's assets is added to the total amount of accumulated funds
	Reinvestment and accumulation	The fund can use the profit for further investment, which allows accumulating funds and ensures stable growth of the portfolio value
Risk management and asset protection	Insurance and asset protection	The fund may use various financial instruments to protect assets from possible risks and maintain the stability of funds
	Financial monitoring	Conducting systematic financial monitoring to identify possible risks in a timely manner and take measures to manage them

Source: developed by the author

The main goal is to ensure stable growth of funds and preservation of their real value over a long period of time to ensure adequate pension provision in the future. Therefore, the investment mechanisms of the NPIF are usually based on the principles of diversification and risk distribution. The mechanisms presented in Table 4.5 allow the NPIF to maximize the use of financial markets to ensure stable and profitable investment activities.

Table 4.5 – NPIF's investment mechanisms

Stage	Procedure	Content of activities
Strategic planning	Defining an investment strategy	Developing a strategy that defines the goals and scope of investments, as well as acceptable levels of risk
	Consideration of investment restrictions	Defining rules and restrictions on the types of assets in which the fund may invest
Analysis and selection of investment objects	Market and asset research	Analysis of various markets and financial instruments to select the most promising and sustainable assets
	Risk and profitability assessment	Identification of potential investment risks and their impact on profitability, calculation of expected income and compliance with strategic goals
Formation of an investment portfolio	Asset diversification	Allocation of investments between different types of assets to reduce overall risk and maximize potential returns
	Selection of financial instruments	Investing in various instruments, such as stocks, bonds, funds, real estate, etc., in accordance with the investment strategy
Monitoring and rebalancing	Continuous monitoring of assets	Systematic analysis of financial markets and changes in asset values
	Rebalancing the portfolio	Adjust the asset allocation in the portfolio to reflect changes in market conditions, strategy or objectives
Protecting against risks and optimizing profitability	Means of protection use	Implementation of financial instruments to protect against risks, such as options, futures, insurance, etc.
	Profitability 0ptimization	Constantly maintaining a balance between risk and return to maximize income at an acceptable level of risk

Source: developed by the author

The NPFSP*'s active pension asset management mechanisms* include a number of strategies and techniques that aim to maximize income, optimize returns and minimize risk. They include different strategies and approaches:

– portfolio diversification – the distribution of funds between different types of assets, such as stocks, bonds, real estate, and others, to reduce overall risk and maximize profit opportunities;

– tactical asset reallocation: active intervention to change the strategy in response to changes in the market or economic conditions to optimize profits;

– active portfolio management: analysis and selection of specific assets to maximize portfolio value;

– risk optimization: the use of financial instruments and strategies to manage risks and preserve capital;

– continuous monitoring and evaluation of results: systematic review and analysis of results to respond to market changes and adjust the strategy in a timely manner;

– innovative investment strategies: using innovative approaches and investment instruments to gain a competitive advantage and maximize profits.

These mechanisms allow NPIFs to effectively utilize their pension assets to maximize value and provide stable pension benefits for fund members, maximize the use of financial markets, respond effectively to changing conditions, and ensure maximum efficiency of pension asset management. In addition, they enable NPIFs to efficiently manage pension assets, optimize financial market opportunities, adapt to changing conditions, and ensure stable and maximized pension benefits for fund members.

The main stages and procedures for implementing the active management of pension assets of the NPIF in logical sequences are shown in Table 4.6.

The mechanisms for *the formation of individual pension accounts of* the NPIF are determined by the legislation and rules governing the activities of pension funds. The main steps to ensure such a mechanism include:

1. Registration and opening of an account: a person wishing to participate in a non-state pension system registers with the chosen private pension fund; after registration, an individual pension account is opened for the person.

2. Contributions: a participant in the system is obliged to make regular contributions to his or her individual pension account; contributions can be determined by a percentage deduction from income or a fixed amount determined by the participant or his or her employer.

3. Accumulation and investment: contributed funds are accumulated in the participant's individual pension account; pension funds conduct investment activities, placing funds in various financial instruments to maximize income.

Table 4.6 – Mechanisms of NPIF's pension assets active management

Stage	Procedure	Content of activities
Asset allocation strategy:	analysis of investment classes	determining the optimal allocation between different asset classes, such as stocks, bonds, real estate, etc.
	diversification	Distribution of investments among different sectors, regions and asset types to reduce overall risk
Selection of tools	analysis and selection of investment instruments	investing in specific financial instruments based on market forecasts and the fund's strategy
	use of derivative financial instruments	use of options, futures and other derivative instruments to protect against risks and optimize profitability
Tactical rebalancing	constant monitoring of markets	systematic analysis of financial markets to identify opportunities and risks
	regular review of the portfolio	assessing asset performance and the need for rebalancing to achieve strategic goals
Active risk management	use of protective equipment	use of financial instruments to protect against risks of currencies, interest rates, market fluctuations, etc.
	responding to changes in market conditions	Adapting the portfolio to changes in market conditions, economic trends and geopolitical events
Funds optimization and tax planning	minimizing costs	Reduced asset management and operating costs
	tax planning strategies	use of tax advantages and tax optimization to maximize profits
Balanced approach	combination of strategies	using a combination of conservative and aggressive strategies to create a balanced portfolio
	individual approach to clients	applying strategies in accordance with individual financial goals and risk tolerance of each client

Source: developed by the author

4. Monitoring and reporting: a participant can monitor the status of his or her individual pension account through the fund's online system; pension funds provide regular reports on the account status, investment strategies used, and professional services.

5. Account management: a participant can influence the management of his/her funds by choosing investment strategies, risk level, and making other financial decisions.

6. Retirement benefits: upon reaching retirement age or in the event of other retirement circumstances, the participant is provided with opportunities to receive retirement benefits; the benefit format may include various options, such as lifetime benefits or benefits to heirs.

These mechanisms provide an individualized approach to the formation and management of pension funds for participants in private pension insurance.

The mechanisms for paying out pensions to NPFIs are usually determined by the law and the rules of the fund itself. The main steps in the payment of pensions may look like this:

1. Reaching retirement age or other conditions – participants in private pension insurance are entitled to a pension at certain times, which may be related to reaching retirement age or other pensionable events (e.g., disability).

2. Choice of benefit option – the participant has the opportunity to choose the format of pension payments; it can be a life pension, a temporary pension, sickness benefits, an annuity, etc.

3. Determining the amount of the pension: the amount of the pension can be determined by various criteria, such as the number of contributions, age, average income, investment income of the fund, and other factors.

4. Commencement of payments: pension payments may begin from the moment pensionable circumstances occur if the participant has applied and meets the established requirements.

5. Monitoring and reporting: pension funds provide participants with the opportunity to monitor the status of their pension benefits through various channels, such as a personal account, reports, mailings, etc.

6. Options to terminate and change payments: the participant can change the format of payments or terminate them in the event of new circumstances (for example, returning to work after retirement).

7. Inheritance: in the event of a participant's death, the fund may provide payments to heirs in accordance with certain rules and conditions.

Pension payment arrangements may vary depending on the particular private pension fund and the relevant legislation. Participants are generally entitled to an individualized approach to the management and receipt of pension benefits in accordance with the terms and conditions set by the fund and the laws of the country.

The functioning of the NPIF is regulated and supervised at the state level through special bodies and legislative acts. The main *regulatory and supervisory mechanisms* include:

1. Licensing: NPIF s are required to obtain a license from the relevant authority (usually the National Securities and Stock Market Commission) to conduct activities in the field of private pension insurance. The license establishes the rights and obligations of the fund, as well as the terms of its operation.
2. Reporting: NPIFs should submit regular reports to the relevant pension fund supervisory authorities. This helps to ensure transparency and openness regarding the fund's financial position and activities.
3. Financial sustainability requirements: state authorities set requirements for the financial sustainability of the NPIF, including a minimum level of capital, to ensure that the fund is able to meet its obligations to pensioners.
4. Investment activities: regulates rules and restrictions related to the investment activities of the NPIF; this may include requirements for investment diversification, risk management, and other aspects.
5. Legal and regulatory framework: the legal and regulatory framework defines the rules and conditions for the operation of the NPIF. Laws and regulations define the legal framework within which the fund can operate.
6. Quality control of pension assets: supervisory authorities monitor the investment portfolio of the NPIF, making sure that the assets are safe and meet the established criteria.
7. Control over pension payments: ensuring timely and correct payment of pensions, as well as control over the calculation of pensions in accordance with the established standards.
8. Oversight of fund managers: if the fund works with a manager, the relevant authorities supervise its activities and compliance with the law.

These mechanisms are aimed at ensuring the effectiveness and stability of the NPIF and protecting the rights of pensioners.

Thus, the functioning of the NPIF is aimed at ensuring the safe preservation of funds and providing participants with a decent pension in the future. The main aspects of this activity include the following elements: procedures for establishing and registering the NPIF, which ensure compliance with legal requirements and guarantee the reliability of the fund; mechanisms for accumulating funds, which allow fund participants to form pension capital through mandatory and voluntary contributions; mechanisms for investing funds, which are aimed at generating profit and maximizing the value of the portfolio for future pension payments; mechanisms for active management of pension assets, which allow the NPIF to effectively use pension assets. It is important to note that the mechanisms of the NPIF are constantly evolving and improving. This is due to changes in legislation, market conditions and the needs of fund participants.

The main challenges to the development of mechanisms for the functioning of the NPIFs, which actualize their in-depth study in Ukraine, include:

1. Increase the role of NPIFs in the pension system. Due to the deteriorating financial condition of the state pension fund, NPIFs are becoming an increasingly important source of additional pension provision for citizens.
2. Expanding investment opportunities for NPIFs. NPIFs have access to new investment instruments, such as infrastructure projects and real estate. This helps to increase the return on pension assets and ensure their stability.
3. Development of active pension asset management. NPIFs are using increasingly sophisticated strategies and approaches to manage pension assets. This allows them to increase the efficiency of using funds and provide higher pension benefits to fund members.

These challenges will determine the further development of NSPP in Ukraine and provide citizens with an additional source of retirement income.

In general, the following conclusions can be drawn about the current mechanisms of the NPIF. NPIFs are an important element of the NSPP system that complements the state pension system. The NPIF’s operating mechanisms include procedures for establishment and registration, accumulation of participants’ contributions, investment of funds, active management of pension assets, formation of individual accounts of participants, and payment of pensions. NPIFs are regulated by the state through licensing, reporting and financial stability requirements, restrictions on investment activities, and other regulations. The key challenges that will determine the development of NPIFs are increasing their role in pension provision, expanding investment opportunities, and developing active management of pension assets. The mechanisms of the NPIF functioning need to be further improved and adapted to the current conditions in order to increase the efficiency of NSPP in Ukraine.

4.3 Current Global Trends in the Development and Operation of Non-State Pension Insurance Funds

In the *United States*, underfunded public pension liabilities are the biggest financial problem for governments. According to Giesecke O., Rauh J., estimates of these liabilities are often overly optimistic and do not reflect the real economic burden of pension promises. The main reason for this is the use of high discount rates that remain higher than the risk profile of the liabilities. This leads to underestimation of the underfunded pension liabilities and underestimation of the annual cost of new obligations. In contrast to the actual situation, the reports seem to indicate that the pension funds are sufficiently financially supported. Also, to generate high returns, pension funds use a significant amount of risky assets, which creates great instability and divergence in future investment returns [204]. The study found significant problems in the private pension liability sector in the United States. Underfunding of private pension liabilities is the largest responsibility for state and local governments in the United States, with a total underfunded liability of $1.076 trillion in 2021. The market value of these liabilities is approximately $6.501 trillion, reducing the calculated funded ratio from 82.5% to 43.8%. Pension funds have invested in risky assets, including alternative investments, increasing uncertainty about returns. Estimates of the annual cost of new liabilities are also underestimated, exacerbating the financial situation. Discount rates remain too high compared to risk rates, even with their decline since 2014. The study points to serious problems in the US NPP sector, such as underfunding, risky investments, and underestimation of liabilities, which could cause serious financial difficulties.

Augustin N., Binfarè M., Fermand E. analyze the use of benchmarks to assess the performance of private equity portfolios of public pension funds in the United States. A significant diversity in the choice of indicators, such as type, geography, and complexity, in particular in relation to asset allocation, use of consultants, and financial condition of the fund, is revealed. The impact of the turnover of private equity consultants on private equity performance is investigated and it is emphasized that these changes also affect the choice of other consultants in the pension fund. The conclusion is that public pension funds do not fully outperform their private equity benchmarks, tend to use public market indices with worse results, and their performance has become easier to overcome over the past twenty years [205]. Based on this research on private equity portfolios of public pension funds in the United States, several key trends in the development of private pensions are evident. *Diversity of approaches to performance measurement: The* study shows a significant diversity in the choice of benchmarks for measuring the performance of private equity portfolios, indicating that pension funds may use different criteria and metrics to assess the performance of their investments. *Systematic variations and their causes:* variations in the choice of indicators are systematic and related to the allocation of assets to private equity, the use of private equity consultants, and the financial condition of the fund; this indicates the influence of strategic and financial factors on the choice of performance metrics. *Relationship with changes in private equity performance:* The relationship between the turnover of private equity advisors and changes in private equity performance is investigated; this may indicate the importance of selecting and retaining effective advisors to achieve successful private equity outcomes. *Trends in index selection and performance:* public pension funds tend to use public market indices, which may indicate certain limitations and trends in their investment approach. It was also found that their performance has become easier to beat over the past twenty years, which may reflect changes in market conditions or asset management strategies.

<u>Brazil:</u> Campani C. H., Brito L. M. Between 2005 and 2015, total assets managed by open private pension funds increased more than sixfold in Brazil, with PGBL and VGBL accounting for 90% of these assets. However, private pension institutions are characterized by high management costs, while retaining much of the benefits provided by the government to encourage investment. High costs are only justified if they are actively managed, which is not always the case in the market. Similar problems exist in the UK, Denmark, and Sweden, where research shows high costs for active management, but in fact provide passive management. This study, analyzing the style and evolution of funds through moving

regressions and Kalman filter, reveals traces of passivity, especially in the combined equity funds. It is noted that these funds, which require the highest management costs, can be more actively managed. The study confirms that it is possible to create a passive portfolio with similar style and returns, but with significantly lower costs [206]. The results of the study demonstrate the trends in the development of NPFs in Brazil. *Asset growth,* as assets managed by open-ended NPIFs grew more than sixfold from 2005 to 2015, indicating an increase in the popularity of this type of PP among the population. *High cost issues:* the study points to the existence of high management costs that funds retain for themselves and constitute a significant part of the benefits that the government provides as an incentive to invest in NPIFs. *Passive management:* the analysis of fund style and exposure showed traces of passivity, especially in the combined equity funds, which, in theory, should be more actively managed due to higher management costs. *The need for passive alternatives***:** the study points to the possibility of creating a passive portfolio that has a similar style and returns, but at lower management costs. *Fund management issues:* problems with high costs, passive management, and the inability of funds to outperform their benchmarks indicate management difficulties and shortcomings of the NPP system.

Australia: The study by Liu K examines the growing importance of private pension funds in the global financial, economic, and societal landscape, which has led to increasing regulation and public interest in their governance and performance. Using Australian private pension funds as an example, the authors focus on the impact of internal fund governance on investment performance. The study utilizes a unique dataset on the attributes of pension fund boards and director characteristics in Australia. The results indicate that a number of factors, such as board age diversity, regular and independent performance and compliance reviews, an unloaded board, and fund director ownership, are associated with a positive impact on fund performance. The study did not find evidence that more independent directors or higher director compensation is associated with better performance [207]. This study points to several key trends in the development of NPIF in Australia. The study highlights the positive impact of age diversity on fund boards; this suggests that having a diverse range of ages on boards contributes to better performance. The study indicates a positive impact of regular and independent performance and compliance reviews; this may indicate the importance of systematic monitoring and independent evaluation of pension funds to ensure their efficiency and compliance. The study indicates that funds with an unoccupied board may have a positive impact on their performance, which may indicate the importance of active participation and commitment of board members in fund governance processes. The study indicates a positive relationship between fund ownership by directors and fund performance, which may imply that directors' vested interest in the financial success of the fund contributes to its better performance. Overall, the study suggests that factors such as age diversification of governing boards and effective monitoring may play a key role in the development and success of private pension funds in Australia.

USA, Australia, UK: Fabian, N., Homanen, M., Pedersen, N., and Slebos, M. examine the sustainability of PP systems, defined as the ability of plan boards and managers to be responsible investors, active stewards, and allocators of capital for economic action with desired social and environmental outcomes. The study analyzes the policy framework and important structural variables related to private pension provision systems in Australia, the United Kingdom, and the United States. Using an analysis of various reports, interviews with experts, and data from the Principles for Responsible Investment, as well as national pension institutes, the authors identify key structural challenges in national pension provision systems. These include market fragmentation, conflicts between principals and agents in the personal pensions sector, and the role of service providers. The study's findings provide insights into how, if at all, pension systems can contribute to desirable economic, social and environmental outcomes [208; 209]. The study identifies several key trends in the development of NPIFs. *Responsible investment:* the study points to the need for responsible investment, which includes the responsibility of fund managers to economic, social and environmental aspects; this may indicate a growing focus on sustainability and consideration of the impact of investments on various aspects of society and the environment. *Active management and capital allocation:* The study draws attention to the active management and efficient allocation of capital to achieve desired social and environmental outcomes; this may indicate the importance of not only profitability but also social responsibility of fund managers. The study identifies *key structural challenges in national PP systems*, such as market fragmentation, conflicts between principals and agents in the personal pension sector, and the role of service providers; this indicates the complexity and need for improved internal governance mechanisms. *Impact on the economy, society and the environment:* the study provides insights into how pension systems can affect economic development, social processes and the environment; this can serve as a basis for further reforms and strategies for the development of pension systems. Thus, the main trends include the responsibility of fund managers, active capital management, and responding to structural challenges in the field of PP.

<u>*European Union: Slovakia.*</u> Bachishin V. M., Vladimirova M. B., Lenerová I. study the pension system for the population of 27 countries of the European Union, which is based on the fact that the current population pays pensions to those who have already retired. It is noted that this system can function sustainably in only a few ways: either by increasing the retirement age or by creating a system of private savings. The article analyzes the status of various pension reforms around the world, including Slovakia [210]. This study on the pension system for the population of the 27 countries of the European Union points out some key trends and aspects of development. *Population ageing*: The current pension system, which is based on the current population funding the pensions of those already retired, is facing the challenges of an ageing population. The increase in the average age of the population may lead to increased pressure on the social security system. *The need for pension reforms*: The study analyzes the status of various pension reforms around the world, including Slovakia, which may indicate a general need to review and improve pension systems to effectively address demographic challenges. *Opportunities for reform:* Due to demographic pressures and financial challenges related to pension provision, the study may consider reform opportunities, such as raising the retirement age or promoting private savings. *Comparison of different approaches*: The study is likely to include a comparative analysis of different countries' approaches to pension reform and their outcomes, which may indicate effective and less effective strategies. *Adaptation to change*: In the context of analyzing reforms in Slovakia and other EU countries, it is possible to identify trends in the adaptation of pension systems to current

economic and demographic realities. These trends may point to the need to find more sustainable and efficient pension models for EU countries that take into account the challenges of an aging population and the financial sustainability of the system.

<u>*European Union: Albania*</u>. Duçi E., Taraku E. Analyzed the NPF and the challenges for pension system reform in Albania. The main aspects of the study include the progress of key indicators, reforms in the NPF system, and the identification of challenges and further reforms to ensure financial sustainability and effective management of the system [211]. The study contributes to the understanding of the dynamics of NPF development in Albania after the period of communist rule and identifies ways to further improve the country's pension system. It highlights a number of important trends in the development of NPFs in Albania. *Post-communist period and impact on pension funds:* The study focuses on the post-communist period in Albania, identifying important reforms and changes affecting NPFs. *The role of non-state pension funds:* the role of NPFs as savings instruments for additional income in retirement is highlighted, emphasizing their importance as a complement to the state pension system. *Influencing factors:* the study examines various factors, such as legal and regulatory framework, prudent investment policies, investment duration, transparency and public trust, that influence private pension funds. *Challenges and reforms:* the study identifies the challenges facing the NPF system in Albania and recommends further reforms to ensure financial sustainability and good governance. Together, these aspects help to understand the dynamics of the pension system in Albania after the period of communist rule and identify ways to further improve the country's PP system.

<u>*European Union: Romania.*</u> Ionescu R. L., Rakos I.-S., Cucerzan T. conclude that in the European Union, pensions from redistributive public systems are the main source of income for the elderly, as a quarter of the EU population is pensioners, and their number is growing. In Romania, the number of pensioners has been steadily increasing over the past decade, raising sustainability issues for the public pension system. Governments are considering shifting responsibility for pensions to individuals through private pension funds. The authors of the study examine the financial sustainability and investment strategies of private pensions, their investment portfolios and returns, using data from various sources such as

the Financial Supervisory Authority, the Commission for the Supervision of Private Pensions, the Romanian Association of Private Administrative Pensions, the National Institute of Statistics and EUROSTAT. The results point to problems in the management of private pensions and consider the economic prospects of the Romanian economy [212]. This study analyzed the development of the Romanian NPFSP over a long period from 2008 to 2021. Some important trends emerge from the study. *Asset accumulation*: Romanian NPFIs have recorded a significant increase in assets, which consist of member contributions and investment gains. As of 2022, Pillar II assets are estimated to be approximately 90 billion lei. *Concentration of assets and participants:* the study indicates a high concentration of assets, with 62% in the hands of only 20% of participants. This indicates an uneven distribution of value between participants, with the largest account at one end and participants with assets of less than 1,000 lei at the other. *Regulatory changes*: during the analyzed period of Pillar II, there were regulatory changes such as the reduction of the contribution to 3.75% and threats to abolish the pillar; these changes reflect the regulatory dynamics and the general climate for privately managed pensions. *Reaction to legislative changes:* the study notes threats to the existence of Pillar II due to attempts to abolish it and transfer funds to the calculation of the state pension. This indicates the need for the NPIF to adapt to changes in legislation and global economic conditions. *Role of international institutions: t*he study points to an increased role of international organizations, such as the World Bank, in providing technical assistance to support pension system reforms. *Sustainability issues:* Romania's National Plan for Recovery and Sustainability envisages an increase in contributions to the privately managed public pension to support the sustainability of the system. This study is important for understanding the dynamics and challenges faced by the NPIFs in Romania and can serve as a basis for making decisions on the future development of the pension system in the country.

European Union: Hungary. According to the study by Iwasaki I., Sato K., Hungary introduced a new pension system in 1998, which is a watershed in that it introduced a mandatory private pension scheme (MPPS). However, political decision-making on pension reform and the operation of the scheme has been heavily influenced by conflicts of interest between ministries, political conflicts between parties, and the presence of special interest groups such as trade unions and financial institutions. This situation may have some negative impact on the legal framework of the MPPS and on the efficiency of private pension fund management. In order to ensure the sustainability of the MPPS in the future and to prioritize policyholders' profits, it is necessary to reform the corporate governance of pension funds, strengthen the system of control over them, and politically neutralize the state pension system [213]. The study shows that the pension system implemented in Hungary, in particular the mandatory private pension scheme (MPPS), faces a number of challenges and problems. Conflicts of interest between different ministries, political disputes between parties, and the influence of special interest groups (such as trade unions and financial institutions) have a significant impact on decision-making and the functioning of the system. Some of the key trends in the development of the NPFI in Hungary identified in the study are: *Corporate governance and monitoring:* to ensure the sustainability of the system in the future, it is proposed to reform the corporate governance of pension funds and strengthen the monitoring system for their activities; this may include measures to increase the efficiency and transparency of the management of these funds. *Political neutralization:* To ensure policyholders' returns, the political neutralization of the state pension system is proposed; this may include measures to clarify political conflicts and interaction between different institutions responsible for pension decision-making. Investment strategies and returns: the study also argues that risky assets, in particular alternative investments, constitute a significant part of the pension fund portfolio; which can lead to great volatility and divergence in future investment returns. The study also indicates that the efficiency and sustainability of the MPPS can be achieved by addressing these challenges and reforming relevant aspects of the system.

Turkey. The study by Kayhan F., Togan Eğrican A. provides an overview of the voluntary pension fund market in Turkey, starting with recent developments in global pension markets and focusing on the pension fund reform in Turkey and subsequent developments since 2003. According to the literature, the reforms aimed at introducing voluntary pension funds in Turkey have positive implications for overall national savings rates and capital market development. Voluntary pension funds generate additional income for recipients after retirement. However, redesigning the system in a simplified structure is necessary to increase participation, inclusion, and sustainability of participation [213]. It can be concluded that this study focuses on the impact of pension reforms, in particular the introduction of a voluntary private pension fund system, on capital market development in Turkey since 2003. The findings indicate a positive impact on the level of total national savings and capital market development. While the voluntary private pension system has contributed to an increase in total savings and the creation of additional income for beneficiaries, there are challenges that need to be addressed. Identified challenges include the need to simplify reporting to improve participant understanding and increase participation. Concerns were expressed about the performance of NPFs, as participants compare short-term returns unfavorably with other investment vehicles. It is recommended that participants be educated about the long-term nature of NPFs and their unique characteristics. The study also identified the unprofitability of the voluntary private pension system, especially due to heavy regulation of asset allocation and reduced percentages of management fees. The study recommends measures for participants, pension companies and portfolio management companies to improve the voluntary private pension system in Turkey. These measures include ensuring stability and simplicity of legislation, continuing government incentives for participants, improving financial literacy, and creating a competitive environment for fund managers. It is also recommended to set standards for media coverage of periods of poor performance of pension funds. Overall, it can be concluded that the voluntary private pension system in Turkey has played a key role in increasing overall savings and enhancing the development of the capital market, despite the challenges it faces. The system is expected to continue to grow, and addressing issues such as management fees and the methodology for measuring returns will contribute to its long-term success. The study by Kayhan F., Togan Eğrican A. [214] shows a positive impact of the introduction of a system of voluntary private pension funds (PPF) in Turkey on the overall levels of national savings and capital market development. In particular, the author points out the following trends:

– *Increase national savings*: the introduction of a voluntary PPF system stimulates additional contributions and savings to the financial system through the participation of the population in pension programs.

– *Development of the capital market*: participation of citizens in private pension funds helps to increase the volume of assets in the capital market, which can support the development of investments and facilitate the creation of new financial instruments.

– *Generating additional income for beneficiaries*: the voluntary PPF system provides participants with an opportunity to receive additional income during retirement, which can improve their financial stability in later life.

– *The need for optimization and improvement of the system*: the study points to challenges such as the need to simplify the reporting system, improve the definition of PPF performance, and the lack of profitability of the industry in Turkey; these aspects point to the need for optimization and further reforms.

– *Low participation and challenges*: the study notes the problem of low participation and points to the need for further measures to increase the interest of the population in voluntary PPFs.

Overall, the study points to positive aspects of the implementation of the voluntary private pension fund system in Turkey, but also identifies areas that require further attention and improvement to maximize the system's efficiency.

<u>European Union: Poland.</u> The study by Keller-Krawczyk L. describes the development and provides a critical analysis of the Polish pension system, which was reformed on the basis of the World Bank's three-pillar model, which combines public and private, compulsory and voluntary pension systems. The author points out the shortcomings and bias of this model, which is based on the incentives to obtain cheap loans for the countries that adopt it. The author describes the main problems of both the old and new pension systems in Poland, such as unemployment, low participation, an aging society and migration of mostly young and educated people. The author emphasizes the accumulated losses in the privatized pension funds, which are on the verge of insolvency and possible collapse of the entire system. The paper also discusses the 2011 reforms aimed at reducing costs, but which seem to be partly politically motivated, and proposes a concept of a more sustainable pension system [215]. This study questions the effectiveness of the Polish pension system, which

was reformed in accordance with the three-pillar model recommended by the World Bank, and identifies problems in the system:

– *Losses in privatized pension funds:* the risk of insolvency of privatized pension funds due to accumulated losses is highlighted, which calls into question their efficiency and sustainability.

– *Uncertainty of retirement age:* national activities create uncertainty about the retirement age, which can affect the sustainability and stability of the system.

– *Employment problems, low participation and migration:* unemployment, low participation in the system and migration of young and educated people are highlighted.

– *Politically Motivated Reforms:* It is noted that the proposed reforms aimed at reducing costs may be politically *motivated* and may not solve the underlying problems of the system.

Overall, the study emphasizes the need for new, more sustainable approaches to the pension system in Poland to ensure its efficiency and financial sustainability.

The study on Polish pension funds (Kompa K., Witkowska D.) points to the need to reform the systems in the context of demographic changes in the European Union. The Polish pension system underwent a major reform in 1999, moving from a single-pillar to a three-pillar structure. However, government intervention in the system has continued, with major changes in 2011 and 2014. The study aims to analyze the performance of pension funds between 1999 and 2013. Changes in demographics, such as the growing number of elderly people, require systemic reforms. Despite the favorable conditions for investment, the reforms introduced in 2011-2013 limited the effectiveness of the mandatory funded approach, which led to the preference of pension funds in owning shares of companies listed on the Warsaw Stock Exchange. The study confirms that pension funds outperform their benchmarks due to the portfolio diversification opportunities introduced by the 1999 reform. However, new regulations and portfolio restructuring have not improved their performance [216]. This study highlights several key trends in the development of pension funds in Poland:

– *Pension reform in 1999:* in 1999, Poland underwent a major reform when the pay-as-you-go pension system was replaced by a three-pillar system; this reform included a mandatory pay-as-you-go, mandatory funded, and voluntary funded approach.

– *Demographic challenges:* changes in the demographic structure of the Polish population, such as the growing proportion of elderly people, require a review and adaptation of the PP system to ensure its sustainability and efficiency.

– *Government interference*: the study shows that the Polish pension system has been subject to government interference, especially in 2011 and 2014, when there were significant changes in pension fund contributions and portfolio structure.

– *Financial performance*: the study analyzes the performance of pension funds in the period from 1999 to 2013 using various indicators such as Sharpe and Traynor. The results show that, despite the general market conditions, pension funds were more productive than their peers.

– *Portfolio strategy*: an important aspect is the strategy of pension funds' portfolio management; some changes in financial legislation have limited the effectiveness of the mandatory fund approach and caused a reorientation of funds' assets.

Unresolved issues: The study points to problems such as unresolved questions about the optimality of contributions, imbalances in asset allocation, and high regulatory restrictions on the financial activities of funds.

In general, the study points to the need for further reforms to ensure the sustainability and efficiency of the PAYG system in a constantly changing demographic and economic environment.

<u>*Central and Eastern Europe.*</u> According to the study by Jimon S. A., Dumiter F. C., Baltes N., the demographic situation in Central and Eastern Europe (CEE), marked by a decline in the birth rate and an increase in the share of the elderly population, leads to attention to national social protection systems, in particular to state pension systems. The direct dependence between the labor market and public pension systems, based on the principle of intergenerational social solidarity, carries the risk of a decrease in budgetary resources received from social contributions, while the cost of benefits will increase. This is due to both the larger number of recipients and the longer duration of payments due to the increase in life expectancy. Changes in demographic and socioeconomic conditions, such as an aging population and a shrinking working population, threaten the

sustainability and financial viability of public pension systems. The growing number of pensioners, coupled with a shrinking active labor force, can lead to an imbalance between contributions and benefits, putting pressure on social budgets and requiring the review and adaptation of pension systems to ensure their sustainability in the long term. This state of affairs also reinforces the need to find new approaches and reforms in the PP sector, such as the introduction of additional private pension programs, extending labor force participation, and optimizing and modernizing public pension systems to ensure their efficiency and sustainability [217]. In general, this study points to several key trends in the development of non-state pension funds (NPFs) in the context of the demographic situation in Central and Eastern Europe:

– *Declining birth rates and growing elderly population:* the study points to the problem of declining birth rates and increasing share of the elderly population, which threatens the financial sustainability of state pension systems due to the reduction of budgetary resources from social contributions.

– *Aging population and shrinking working population:* changes in demographics, including an aging population and a shrinking working population, highlight the need to review and adapt pension systems to ensure their sustainability and relevance to the new environment.

– *Imbalance between contributions and benefits:* Aan increase in the number of pensioners along with a decline in the active labor force can lead to an imbalance between contributions and benefits in public pension systems, putting pressure on social budgets.

– *The need for new approaches and reforms:* itis noted that in the context of changing demographic and socio-economic conditions, there is a need for new approaches to PP, such as the introduction of additional private pension programs, extension of working life, and optimization of public pension systems.

Thus, the study points to the current challenges faced by pension systems in Central and Eastern Europe and the need to consider and implement reforms to ensure the sustainability and efficiency of these systems.

Digitalization of non-state pension insurance funds activities

According to an OECD report [64], technology is rapidly transforming the way the financial sector operates, and pension management and delivery is no exception. Innovative applications of technology in financial services, or FinTech, are already being used to improve communication with consumers and their interaction with pension plans. FinTech applications increase the accessibility of retirement investing to a broader consumer base and make communication with retirement savers more efficient. FinTech improves the efficiency of pension schemes through risk management applications, automation of investment processes, and simplification of regulatory compliance. Governments are making significant efforts to support the development of FinTech. Innovation centers are becoming a key component of regulatory support to help new companies understand how existing regulations apply to their ideas. Effective engagement with all stakeholders will be key to successfully supporting innovation in financial services. In summary, the report shows the positive impact of technology on the pension system and the efforts of governments to encourage these changes while ensuring adequate consumer protection.

The OECD [218] examines both the opportunities and challenges of digitalization for the financial sector, and offers policy recommendations to ensure the positive effects of digital technologies in the areas of financial markets, insurance, and pensions. Based on the analysis of the results of this study, it is possible to identify the main trends in the use of digital technologies in the activities of pension funds:

– Asset tokenization can bring efficiency, increased transparency, and improved liquidity to assets. It can also expand retail investor participation in previously restricted asset classes and improve access to finance for small and medium-sized enterprises.

– Open banking promotes the unpacking of financial services previously provided by banks, which can lead to better, cheaper, or more personalized financial services. However, opening up the established payment infrastructure to new entrants creates new risks.

– Big data and artificial intelligence can transform the insurance production process. However, the granularity of the data may lead to the exclusion of certain groups from insurance offers. The use of artificial intelligence in the insurance sector also raises questions related to data collection, privacy, and ethical issues.

– Blockchain integrated with the Internet of Things and artificial intelligence can facilitate investment in sustainable infrastructure and accelerate the cost-effective transition to a low-carbon economy.

– The increasing volume and diversity of personal data of financial services consumers, as well as the growth of analytical capabilities, increase both the benefits and risks for consumers. Therefore, an integrated policy covering financial literacy, financial consumer protection, and personal data protection is needed.

Pension funds are gradually adopting digital technologies in some areas of their operations, although overall, the use of innovations in the pension industry is still in its infancy compared to other financial services sectors. IOPS [219] has identified trends in the use of digital technologies in the activities of pension funds:

– Mobile applications and online platforms. Pension funds and administrators are adapting their online services to mobile applications to improve member engagement through digital channels. Such tools often include pension calculators.

– Centralized databases. Some jurisdictions create centralized national pension databases that allow the data to be used for supervisory purposes as well as by other government agencies.

– Cloud technologies. There is a tendency to use cloud technologies in the administration of pension funds, which reduces the need for physical office space and IT equipment.

– Although regulatory and supervisory technologies in the pension sector are still at an early stage of development, they are seen as potential tools to improve the efficiency of regulatory compliance and supervision.

In general, it can be summarized that current trends in the development of the NPF cover several key aspects, as shown in Figure 4.7.

In the context of changing demographic and economic conditions, the biggest trend is the search for sustainability and resilience of pension systems. Increasing life expectancy and a shrinking working population are threatening the financial viability of pension systems. Countries are considering various reforms aimed at adapting their pension systems to new realities, which may include changes in retirement ages, expansion of private pension programs, and optimization and modernization of public pension systems. There is a growing emphasis on responsible investment; NPF are attempting to incorporate social and environmental considerations into investment strategies to ensure sustainability and promote overall well-being. Some NPF are incorporating environmental and social responsibility principles into their investment strategies, allocating funds to projects that promote sustainable development and social improvement. There is a growing interest in investing in projects aimed at protecting the environment and developing green technologies. The use of technological innovations to improve the efficiency and accessibility of pension services may include the introduction of digital platforms, robotization of processes, and mergers with electronic financial solutions.

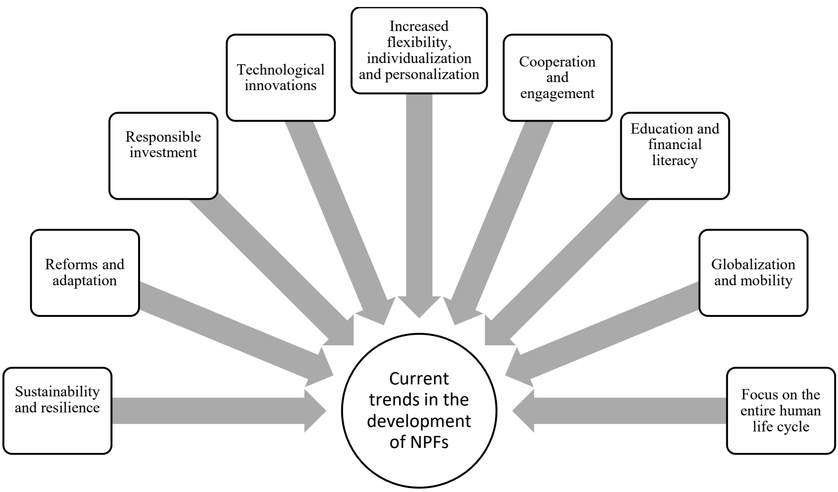

Figure 4.7 – Current trends in the development of NPFs

Source: compiled by the author based on the analysis of international experience

Increased flexibility in the choice of pension options. Pensioners are given the opportunity to choose between different types of pensions and ways of receiving funds. In the functioning of the NPF, we can also highlight the trend of individualization and personalization, which is driving the growing popularity of individualized retirement accounts, which allow individuals to choose their own investment strategies and determine the level of risk, allowing everyone to make their own contribution to their future retirement. Demand for additional pension products is growing, leading to the expansion of the private pension market through the introduction of additional insurance and investment products aimed at improving financial efficiency.

Interaction between different stakeholders, such as governments, businesses, and civil society organizations, to ensure the sustainability of pension systems and to engage the public in discussions about the development of pension programs. Increasing emphasis on education and financial literacy to raise public awareness of pension issues and the rational management of pension assets. In general, current trends show the need for flexible, responsible and efficient pension systems that can adapt to changes in society and the economy.

National systems of non-state PP develop in accordance with changes in the economy, demographics, and social and financial conditions. Therefore, some of the current trends in the development of private pension systems have emerged in response to current global trends. In particular, globalization and labor mobility are driving trends in the preservation and transfer of pension rights when changing jobs or countries of residence. Modern pension products are becoming more life-cycle oriented, taking into account not only pension payments but also other financial needs of a person at different stages of his or her life. These trends indicate constant changes and adaptation of non-state PP to modern challenges and expectations of the participants of these systems.