FINANCIAL SUSTAINABILITY OF PENSION SYSTEMS IN COUNTRIES OF CENTRAL AND EASTERN EUROPE

SUMMARY OF THE DOCTORAL THESIS

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Universitatea "Lucian Blaga" din Sibiu

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ARGUMENT

The development and economic growth of a country can be achieved only through the population, which through the knowledge, skills and competencies possessed represents the innovative and creative value-added capital of the society, *lato sensu* and economy, *stricto sensu*. However, in recent years, the European Union (EU) has been facing significant changes in the demographics and population structure of the Member States.

Data published by Eurostat show that the average age in the European Community (EC) is 43 with an aging population, which is due both to increased life expectancy and to reduce the birth rate by reducing the number of births, reducing the rate fertility and increase in the average age of birth of the first child. In 2018, the birth rate of EU countries recorded an average value of 9.5 ‰, and the fertility rate was only 1.55 children born per woman, given that the replacement rate of the population requires at least one fertility rate of 2.1.

However, the total population of the EU continued to grow in 2018 based on population migration. Within the EU, free movement gives Member States citizens multiple opportunities in terms of professional activity and educational training, so the main areas of emigration are: Romania, Poland, Portugal and Italy, while Germany, Spain, France and Italy are EU countries with the largest influx of immigrants. Also, a share of 4.9% of the population of EU countries is represented by immigrants from non-member countries, and the average age of the migrant population is 29 years.

On the other hand, the EU population over the age of 65 also increased by about 2.6% in the last 10 years, with the highest rate in Italy and Greece. As a result, the dependency rate of the elderly population reached 30.5% in 2018. In other words, a person over the age of 65 is supported by three people active on the labor market. Eurostat projections, on the future trend of the population, predict a reduction in the number of the population by 2100, the population structure being subject to aging with an increase in the number of people over 80 years, while the share of the active population in the market employment will decline, with an increase in the percentage of people over 65. Under these conditions, the rate of socially and financially dependent older people is expected to double by 2100.

The topicality of the approached topic is supported by the fact that the free movement of people, goods, services and capital entails important changes, both in the socio-demographic structure of the countries and in the economic-financial point of view. Against the background of labor migration, corroborated with the aging trend of the population, a topic of particular importance is the financial sustainability of public *pay-as-you-go* (PAYG) pension systems.

These demographic conditions have a major impact on the economy and on the sustainability of the economic growth. From a macroeconomic point of view, an aging population means a reduction in productivity, a slowdown in the growth of gross domestic product, a reduction in savings and investment.

Regarding the labor market, the effects of the new demographic conditions are materializing in the increase of the participation rate of the population over 50 years of age and of women. In this regard, it is necessary to ensure accessibility to the labor market, support the development of the entrepreneurial and business environment, create jobs suitable for the vocational training of the population, facilitate access to employment, including the elderly or those with a low degree of physical disability that allows them to carry out certain professional activities.

The current demographic changes also have a significant impact on public finances, the main consequences being the increase in spending on benefits provided to the elderly through public pension systems and spending on health services. In terms of influence on financial markets, the aging trend reduces the level of savings and generates changes in investment policy and portfolio structure, with the tendency to invest in fixed income financial assets that provide security at a minimum degree of risk.

The demographic structure is of colossal importance in maintaining the sustainability of PAYG-funded public pension systems funded by contributions, given that once the majority of the working age population becomes taxpayers, the pension system is correlated with the age structure of the population. The difficulties arise in the context in which the number of elderly people receiving the pension system, as well as the period in which they receive benefits, increases, while the active population on the labor market and the targeted contributions to the public pension system decrease and determine the decrease of social insurance budget revenues.

The motivation for choosing the approach starts from the fact that EU pension systems face the problem of solvency and sustainability in the context of demographic transition. In the field of research, we consider it imperative to reorganize the pension system, especially in the countries of Central and Eastern Europe (CEE). One may ask why CEE? Because these countries have a common past, manifested by the experience of communism in its most severe form, because many of the conditions of emerging economies in these countries that are in the process of catching-up with developed countries, "follow" similar steps, and also because this area of Europe needs cohesion in pension systems.

At the level of Romania, a fundamental revision of the pension system is imperative, taking into account the new economic, financial, legal, social, behavioral, psychological and human context. Certainly, the old system is an antiquated one, which is not at all effective and is not harmonized with the new context of economic and social life, given the holistic approach to the individual and public and private finances.

Research Objectives

With a similar history, the adoption of the democratic system, accession and integration into the European Union, the national pension systems of the CEE countries have undergone numerous regulations in order to be coordinated and harmonized with other Member States' systems, but especially to strengthen their sustainability. *The aim of the doctoral research* is to study the financial implications of the new socio-demographic conditions on pension systems implemented by CEE countries and to identify ways to strengthen the financial sustainability of public PAYG pension systems, directly influenced by demographic change and the effects of globalization. We believe that the sustainability of pension systems remains a topical issue, CEE being still in the process of adapting national pension systems to social, economic and demographic reality and requiring in this process a multidisciplinary and holistic approach from a socio-economic point of view.

Given this purpose and the complexity of the issue addressed, we consider it necessary to set operational objectives. Thus, a *first objective* is to approach this topic from a historical-anthropological perspective in order to have a clear and comprehensible image on the organization and functioning of contemporary pension systems in CEE countries.

The second objective aims to identify the factors that have determined the configuration of the current pension systems implemented by CEE countries and the impact that the demographic structure, labor market characteristics and medical status of the population have on them.

The third objective is to study the effects of the multi-pillar structure supported by the WB and the ILO on the development of the financial sector, providing a macroeconomic perspective on the configuration of pension systems in CEE countries.

The fourth objective of the research focuses on the budget of public pension systems in CEE countries and the determinants of the budget balance, aiming on the one hand at the formation of budget revenues by taxing salary revenues and subsidies received, and on the other hand by the level of expenses with social benefits.

The research hypotheses are the following:

Hypothesis 1.1. The reorganization, restructuring and consolidation of public pension and social protection systems in CEE was achieved due to the need to adapt to the new economic, legal, social, demographic conditions established at EU level.

With a common history, marked by the experience of a paternalistic system of government, the CEE countries with the transition to democracy and the capitalist economy were faced with new socio-economic conditions that imposed the need for new reforms in the social field. With EU accession and integration, they have had to transpose Community directives and regulations into national law, in order to ensure convergence and harmonization with Member States regarding the observance of Community freedoms and the right to social protection within the EU.

Hypothesis 1.2. A level of convergence of the public pension systems of CEE countries can lead to the construction of an efficient functioning mechanism by creating an "optimal pension area" across the region.

The Treaty on the Functioning of the EU, the Charter of Fundamental Rights and the Social Charter emphasize the observance of the right to social protection of all EU citizens, regardless of their nationality or residence or their current domicile. As a result, CEE countries need to regulate the functioning of public pension systems in a Community context, facilitating the transferability and portability of social benefit rights in other Member States.

Hypothesis 1.3. The strengthening of the social protection framework and pension systems at the level of CEE countries can only be achieved on the basis of the country-specific social, financial and economic structure.

Although the right to social protection of the population is universally recognized, each state, on the basis of sovereignty and autonomy, regulates the organization and functioning of social protection systems and pension systems according to the cultural characteristics of society, economic development and national social level. .

Hypothesis 1.4. What is the impact of social, economic and medical characteristics on the structure and organization of pension systems from a managerial perspective ?!

The main variables with which public PAYG systems operate are: population structure, birth rate, employment rate, life expectancy, mortality rate, dependency rate of the elderly population, labor taxation rate and fiscal pressure, fiscal compliance, adequacy of benefits, intergenerational equity, macroeconomic stability. Thus, the structure of pension systems in CEE countries is dependent on the socio-economic framework in which they operate, being conditioned by current socio-economic conditions and their dynamics.

Hypothesis 1.5. Can private pension funds constitute economically, financially and socially viable alternatives to the reform of pension systems under the auspices of ensuring macroeconomic stability in CEE ?!

Private pension funds aim to increase resources through investments in financial assets, as a result of which their return is conditioned by the investment structure and the level of development of financial markets, as well as by the stability of macroeconomic policies.

Hypothesis 1.6. Is the financial sustainability of pension systems in CEE strengthened in terms of creating a "fiscal space" at EU level, increasing the voluntary compliance of taxpayers and ensuring a viable and sustainable state social insurance budget ?!

The financial sustainability of pension systems is defined by the balance between the income from social contributions of the state social insurance budget and the expenditure on benefits provided to beneficiaries. As a result, numerous studies have highlighted the positive effect of reducing the tax burden on taxpayer compliance and budgetary consolidation.

Research Methodology

The doctoral thesis entitled "Financial sustainability of pension systems in countries of Central and Eastern European " is a research based on the traditional way of investigating the research topic, following the steps below:

- the establishment of the research area takes into account the current problems faced by the public pension systems in Europe, especially by the CEE countries;
- the research topic aims at a comparative case study on the pension systems implemented by CEE countries;
- organizing the activity and establishing the operational objectives;
- collection, processing and analysis of information from multidisciplinary bibliographic sources: literature, legislation, studies, courses, treaties, reports;
- evaluation of results, writing the conclusions and dissemination of information.

The main *research methods* used in this doctoral thesis are:

- the method of scientific reading is used for theoretical documentation and complete information on the chosen topic, description of demographic, economic, sociological and political phenomena;
- the causal method allows the explanation of the reasons and causes that influence, lead and determine certain effects, results, socio-economic situations;

- the comparative method is used to highlight the similarities and divergences between pension systems, taking into account the following aspects: comparability of similar or different social protection systems, substantiating the real connections between the terms under comparison, taking into account the cultural, political and social context, the need to analyze both the initial meaning of the system and its evolution over time. Within the approached topic, due to the international and multidisciplinary character of the pension systems, we will carry out a comparative analysis of the Romanian pension system and of the CEE systems, focusing on the Romanian pension system;
- the historical method is used to know the phenomena, especially due to the need for temporal analysis of their evolution. Related to the approached topic, the method considers the approach, seniority, evolution, configuration and functions of the main typologies of EU pension systems;
- the sociological method is used due to the influence of sociology on the way society will react and influence pension systems. The evolution of society, given the technological, economic, cultural, educational, behavioral and cognitive changes of people, is a factor influencing pension systems;
- the anthropological method presents a socio-cultural perspective on the influencing factors that act on the formation and organization of national pension systems;
- the method of the case study, which aims to focus research on the social protection system in Romania and other CEE countries, as well as the presentation of all their particularities;

- the deductive method of knowledge used, in particular, for the application of the formal logic regarding the substantiation of the socio-economic phenomena that influence the structure of the pension systems;
- the critical analysis method identifies both the positives and the shortcomings and problems facing the pension systems in CEE;
- the quantitative method focuses the scientific research on the systematization of bibliographic and legislative information, as well as the evidence of macroeconomic and community-level decisions on pension systems;
- the statistical method is used to centralize data on demographic structure and indicators specific to pension systems;
- the graphical method highlights in a synthetic way the main quantitative aspects of pension systems: average population, birth rate, activity rate, average income level and their tax rate, life expectancy, number of pensioners, retirement ages, amount of pensions, income replacement rate, etc.
- the econometric method, through which some existing correlations will be established between indicators of the socio-economic structure and indicators specific to pension systems**.**

Data Process Method

The first step in our research is the collection, processing and analysis of information from multidisciplinary bibliographic sources: literature, legislation, studies, courses, treaties, reports on social protection systems and pension systems, as well as socio-economic and demographic data that summarize the developments of the main quantitative aspects of pension systems.

Mainly, *the data processing tools* used during the scientific research are:

- reading sheet for the synthesis of relevant information from the specialized literature and the legislation specific to the research topic;
- spreadsheets for the centralization and systematization of data on demographic, economic, social indicators and indicators specific to pension systems, and which will be used for econometric modeling;
- tables, figures and diagrams that present in a compact and concise form information on the demographic structure, socio-economic indicators and pension systems, as well as the statistical data used.

Bibliographic processing is performed using reading sheets, which present the essential ideas from the consulted bibliography, representative of the research topic, depending on the topic, keywords, authors, year of publication, main results and research conclusions.

Quantitative data are secondary data that can be found in databases published by important national and international institutions: Eurostat, WB, European Central Bank (ECB), Financial Supervisory Authority (SAA), National Institute of Statistics, as well as in reports of various international bodies: European Commission, OECD, WB, International Monetary Fund (IMF). Their processing is performed using econometric software recognized and used in the field of finance, respectively Eviews.

The main form of analysis of quantitative data uses econometric methods, respectively:

- regression analysis, which analyzes the dependency ratio between several variables;
- covariance analysis, which aims to analyze the effects of mixed variables independent variables on the dependent variable.

In the case of this scientific research, the data used concern the demographic situation of the population (total population, birth rate, mortality, life expectancy), migratory movement of the population (number of emigrants and immigrants), labor force statistics (active population, employed population, unemployment level, number of employees, level of salaries, average duration of professional activity), data on the State Social Insurance Budget (level of total income, income from contributions, level of total expenditure, pension expenditure), social protection sector (number of pensioners, level of social contributions, level of pensions, amount of benefits) and last but not least data on living standards (poverty line, poverty rate, health status).

Justification of the Approached Topic

The topic addressed approaches the issue of sustainability of PAYG-type public pension systems in five CEE countries, namely: the Czech Republic, Hungary, Poland, Slovakia and Romania. This doctoral thesis is a complex research, which captures aspects intensely debated in the domestic and international economic literature, as well as in demographic, social and legal studies.

In the present doctoral thesis, the approached topic highlights multiple facets and divergent aspects such as: social economy *versus* capitalist economy, globalization *versus* glocalization, population aging *versus* birth and fertility, emigration *versus* immigration, early retirement *versus* prolongation *versus* professional activity, restrictive eligibility criteria the right to financial protection of the elderly population, the sustainability of public pension systems *versus* the adequacy of benefits provided, public pension systems *versus* private pension funds, taxation of salary incomes versus subsidization of state social insurance budgets.

Therefore, the approached topic has many aspects, inter and transdisciplinary, and due to the complexity of the topic it is necessary to have a multisectoral approach that brings together: insurance and medical system, tax system, financial sector, education system and labor sector, as the discussion is focused on a large number of people, a large volume of resources is being used and the stake is the well-being and financial security of the citizens.

The doctoral thesis "Financial sustainability of pension systems in countries of Central and Eastern European" is a complex research on the structure of pension systems and the main factors influencing financial sustainability of public PAYG pension systems implemented in CEE countries.

The issue addressed, in the current demographic context, has aroused anxiety, concern and strong debate in the public, political and academic environment. The issue of the sustainability of public pension systems has become the focus of both international and governmental bodies, as well as a considerable number of specialists in the field of public finance, social protection, macroeconomics and law, as well as empirical research in academia, confirming the complex and multi, inter and trans-disciplinary character of the approached topic.

The Importance of the Issue Addressed

The importance of the approached topic lies in the fact that the gap between the number of taxpayers and the number of beneficiaries leads to the increase of public expenditures and the increase of budgetary pressure. According to Eurostat data, the share of pension expenditure in GDP is expected to increase by 2060, and amid the economic crisis of 2007, which led to a budget deficit and external borrowing, the solvency of the entire financial system is exacerbated..

Increasing the legal retirement age and the contribution period, as measures to attract income and reduce social security budget expenditures seem to be ideal solutions, but it must be taken into account that life expectancy is influenced by socio-economic, financial and occupational status of the individual, and people with a modest financial status, as well as employees in areas of activity that present increased risks of accidents and more dangerous and demanding working conditions may have a significantly reduced life expectancy. In addition, not all people want to work until they are old or experience reluctance from employers and reduced accessibility to the labor market.

The multi-pillar structure of pension systems aimed to export budgetary pressure from the public pension system, but at the same time to ensure an adequate replacement rate and maintain the standard of living. However, in the case of pension schemes connected to the stock market by pension funds invested in financial assets, the amount of the pension is connected with the return on investment. The slowdown in economic growth, low-risk portfolios and moderate returns generate a low profit, materialized in the insufficiency of the necessary financial resources. Financial education, financial planning and the adoption of private saving measures are possible solutions to supplement the public pension and obtain the necessary resources.

Another relevant aspect that supports *the importance of the issue addressed* and, which takes into consideration the performance of public pension systems, is the adequacy of the income provided. At EU level, the estimated average poverty rate for people over the age of 65 before social redistributions, including pensions, is over 87%. This percentage is reduced to 19.2% after the redistributions through the pension system, which reveals the dependence of the elderly on the pension system as the main source of income, a situation that suggests the need to adjust the income of pensioners. In this regard, the protection of low-income employees and short contribution periods must be taken into account.

In the context of the intensification of population movement and migration, one issue to be taken into account is the situation of people working in several countries and accumulating pension rights in the form of pensions in all these countries. In such cases, the issue of the transferability of these rights and the method of payment of benefits arises.

Chapter 1 General Information on Pension Systems

In this chapter, a socio-historical perspective is provided on the framework in which contemporary pension systems in CEE countries have emerged and developed. The first part of the chapter identifies the main typologies of social protection systems and the principles that govern them. The second part envisages the delimitation of the legislative framework governing social security and the protection of the elderly at national, Community and international level, as well as legislative harmonization. The last part of the chapter highlights the organization and functioning of contemporary pension systems in CEE countries, focusing on Romania in particular.

Chapter 2 Socio-Economic and Medical Approaches to Pension Systems

The chapter presents the historical-anthropological framework and defines the socio-cultural and political factors that determined the configuration of social protection systems, as well as their impact on the contemporary pension mechanisms implemented by the five CEE countries included in the research. The second part of the chapter highlights the influence of demographic transition, respectively the impact of the aging process and migration on the labor market and public pension systems. At the end of the chapter, an empirical study was conducted on the impact of socio-economic and medical characteristics on public pension systems implemented by CEE countries by highlighting the correlations between public spending on social protection of the population and the most relevant demographic and labor market indicators. the medical status of the population.

Chapter 3 The Macroeconomic Dimension of Pension Systems

This chapter offers a socio-economic perspective to pension systems, given the recommendation of international bodies to diversify the financial sources of the elderly population, on the one hand by joining private pension funds, and on the other hand by personal savings using various tools offered by the banking and stock market. The chapter also emphasizes the role of social policy in society and in macroeconomic policies to maintain socio-economic stability and foster sustainable economic growth. The end of the chapter presents the econometric study of the macroeconomic effects of pension systems, in view of the existence of close correlations between specific indicators of macroeconomic stability, the development of the financial sector and the structure of national pension systems in CEE countries.

Chapter 4 Financial Sustainability of Public Pension Systems

The chapter presents the budgetary process of public pension systems in CEE countries, taking into account national fiscal policy and the Community fiscal framework and aspects of international tax law, as well as tax compliance of taxpayers. Also, specific aspects regarding the structure of budgetary expenditures with social benefits and the situation of budgetary balance are exposed. At the end of the chapter, the econometric study on the financial sustainability of public pension systems in CEE countries was carried out, by establishing correlations between the level of budget revenues and expenditures on the one hand and socio-economic indicators specific to pension systems, on the other.

THE RESULTS OF THE RESEARCH

The doctoral thesis is completed by providing an economic, financial, social, econometric framework for providing a *guide to good practice* in the field of social protection and pension systems, providing viable solutions for business, government and central and local authorities. The thesis also sought to substantiate the pension systems by defining and consolidating some personal views on the organization and functioning of pension systems in CEE countries, as well as on the main factors influencing and determining their financial sustainability..

The results obtained from the econometric modeling form the basis of macroeconomic policy recommendations on strengthening the sustainability of public pension systems in a framework that promotes sustainable economic growth of the whole economy and can be a starting point for future reforms by CEE countries, especially of Romania in terms of social policy.

Reorganization, Restructuring and Consolidation of Public Pension and Social Protection Systems in CEE

The reason behind the formation and implementation of social protection systems is the right of the population to social protection, in the context of income inequality, which increases the risk of poverty and material deprivation. Pension schemes, part of the social protection system set up at national level, have the role of ensuring the financial protection of people who are unable to obtain income due to old age, accidents, pathologies or disabilities. Regardless of the form of organization, the way it works, the structure and the principles on which it is based, the pension systems have the role of making financial distributions through which to reduce the risk of poverty and ensure a decent and dignified living at an old age.

The Czech Republic, Hungary, Poland, Slovakia and Romania have "experienced" centralized leadership and have descending structures of paternalistic socialist systems, but in recent decades have adopted numerous regulations on the reform of national social protection systems and public pension systems. Reforms have emerged on a similar socio-economic background in all five CEE countries, characterized by declining populations, declining employment rates, increasing the number of beneficiaries of the pension system, increasing life expectancy and at the same time the benefit period, as well as the lack of fairness and equality in accessing benefits.

The reforms adopted by the five CEE countries have taken into account the maintenance of the financial sustainability of public pension systems and the adequacy of benefits. In this regard, the eligibility criteria for accessing benefits have been redefined, and through parametric reforms the quotas of compulsory social contributions have been modified, the minimum contribution period and the standard retirement age have been increased, penalties for early retirement and benefits for continuing activity after reaching retirement age, the way of determining the amount of benefits was redefined, as well as the way of updating and indexing the benefits.

Efforts to provide adequate benefits through public pension systems in the five CEE countries are reflected in increasing the replacement of pension income, reducing poverty and material deprivation, and maintaining the level of consumption and improving the health status of population over the age of 65. On the other hand, these results are supported by the increase in expenditure on pension benefits.

The most significant change to the pension systems in CEE countries was the adoption of the multi-pillar structure proposed by the WB, based on three pillars. However, the implementation of mandatory private pension funds did not have the expected effect. Underdevelopment of financial markets, negative rates of return, increased social contribution pressure and increased spending on public pension systems have undermined public confidence and minimized the attractiveness of private pension funds in CEE. As a result, the restructuring of national pension systems on a three-pillar structure is currently maintained only in Romania and Slovakia, but also in these countries the contribution is lower than the level initially established. On the other hand, Hungary and Poland have decided to nationalize compulsory private pension funds, and in the Czech Republic this pillar has not yet been implemented.

Thus, the public pension system in the CEE countries remains the main form of financial protection for the population who are unable to achieve the income necessary for daily living. However, the contributory pension schemes implemented in CEE presuppose the existence of eligibility criteria, which require reaching the minimum contribution period and reaching the standard retirement age and thus limit the accessibility of financial benefits to all citizens. The situation is similar in the case of privately managed pension funds, but there is also the investment risk. Moreover, the direct link with the population structure and the contribution of the labor force represents, in the current demographic context, especially for Romania, where emigration is extensive, a threat to the financial sustainability of public pension systems.

Convergence of Pension Systems in CEE Countries

Worldwide, there are multiple types of pension systems, based on various operating principles. The analysis of the typologies and the organization and functioning of the pension systems of the EU Member States reflects the existence of their diversity in terms of structure and operating principles. In northwestern Europe, pension systems are liberal, based mainly on private structures, while the central-eastern part of the continent is more conservative, with the public pension system being the main pillar of protection for the elderly.

National sovereignty implies the freedom of a state to implement its own social protection system, to establish the principles of operation, to define its composition, to identify the beneficiaries and to impose the eligibility criteria for accessing benefits, to specify the benefits granted and to decide the form of granting them.

Globalization and free movement of people favor the phenomenon of migration, so that the principle of territoriality in the field of social security is inappropriate for people in the process of migration, and their right to social protection is constrained and access to benefits is limited. In the case of non-residents, the host state has no obligation to ensure social protection, so that human rights violations occur, as well as contradictions between the provisions of national legislation on jurisdiction over the rights to collect social contributions and the obligations to redistribute income to beneficiaries.

In addition to the free movement of people, the EU's fundamental principles include equality and non-discrimination on the grounds of residence. Thus, the Treaty on the Functioning of the EU, the Charter of Fundamental Rights and the Social Charter state the protection of people and the protection of their rights in all Member States, but the responsibility for organizing and implementing social protection systems lies with each state. The EU’s role is to promote policies in order to favor the convergence, harmonization and cohesion of the Member States.

From a legislative point of view, the legal framework of the right to social protection is coordinated with the right to free movement. EU Member States have national pension systems that ensure the protection of the elderly, but European regulations on the coordination of pension systems and the transfer of benefits are applied unanimously. As a result, barriers to the right to social protection of the migrant population have diminished considerably in recent years. However, poor information and procedures that require a fairly long time to process data and exchange information still pose challenges for the creation of an "optimal pension area" across the European Community.

At international level, international agreements on social security are based on the principle of reciprocity and equal treatment of people residing in the other signatory State, in the national territory of the Contracting States. This implies a uniform application in terms of social security rights, the maintenance of acquired rights and the guarantee of the export of benefits abroad. Coordination of social protection systems, cooperation and exchange of information at international level increase their usefulness and role in ensuring the social protection of people in the process of migration, having positive effects on international cooperation and macro-regional cohesion.

The Impact of Social, Economic and Medical Characteristics on the Structure and Organization of Public Pension Systems

The structure of pension systems is dependent on the socio-economic framework in which they operate, being conditioned by current socio-economic conditions and their dynamics. In CEE countries, public pension systems are of the PAYG type, their financing being achieved through compulsory financial levies, in the form of social contributions applied to gross income, borne by people employed in the labor market. Specific to PAYG-type pension systems is the redistribution between generations, which means that the resources obtained from social contributions and other tax payments directed to the social insurance budget, to be used for the payment of current pensions, the state guaranteeing the provision of benefits to taxpayers. eligibility mainly related to the minimum contribution period and the standard retirement age.

The direct link between the population structure and the public pension systems in CEE countries represents, especially for Romania, a threat in the context of reduced birth rates, extensive labor migration and increased life expectancy, given that the success of PAYG type pension systems is conditional on maintaining a balance between expenditure on current benefits and income from social contributions paid by the employed population.

Empirical studies confirm the correlations between expenditures for social protection of the population and economic development of the country, labor market activity and duration of professional activity, population number and change, and the dependency rate of the elderly population in the five CEE countries.

The empirical results reflect the fact that strengthening the financial sustainability of public pension systems in CEE countries requires a higher level of activity and employment on the labor market. Even if the empirical results reflect a reduction in long-term social protection spending as unemployment rises, this does not bring economic benefits and is not sustainable. Also, strengthening the financial sustainability of social protection systems is possible by increasing the average population, reducing emigration and increasing the duration of professional activity, as well as by increasing the birth rate and ensuring a positive natural increase.

In view of these aspects, we consider it absolutely necessary that the reforms of the social protection systems be correlated with the general national framework and take into account the determinants from the economic, social and medical environment, as well as their influence on the parameters of the pension systems.

The Impact of Financial Redistributions through Public Pension Systems on the Macroeconomic Stability of CEE Countries

At the macroeconomic level, pension systems are fulfilling their purpose only if they manage to provide an adequate financial flow to ensure a decent standard of living among the population.

The well-being of the population is associated with the income and the ability to meet needs, being directly influenced by the economic development of a country. Social transfers made through pension systems have a direct impact in reducing the risk rate of poverty and social exclusion of the population as in the case of people over the age of 65, it is noted that pension income is practically the only income this category of the population disposes.

Pension schemes in CEE countries included in the research, manage to provide adequate income to beneficiaries and fulfill the role of reducing the risk of poverty and ensuring a decent living, but income inequality in Romania in particular can be a threat to beneficiaries whose income are included in quartile 1, if the benefits provided will have a slower growth rate than the revenues in quartile 5.

Given these issues, the empirical study established the existence of correlations between population incomes and inflation, severe material shortcomings and the risk of poverty. The results support the need to adjust the benefits provided by pension schemes in CEE countries to the level of inflation and the rate of risk of poverty and material deprivation in order to achieve their purpose. At the same time, an adequate financial flow must be ensured for the active population, so as to favor personal savings and the contribution to pension funds.

The Importance of Private Pension Funds and Personal Savings under the Auspices of the Reform Pension Schemes in CEE

The restructuring of national pension systems in CEE countries was carried out following the recommendation of international bodies to diversify financial resources, on the one hand by joining private pension funds and on the other hand by increasing the degree of personal savings.

The responsibility of the population to ensure the necessary income after retirement is an opportunity for the development of financial markets, but the lack of financial education and poor knowledge of financial concepts poses a major risk that the investments made will not produce the expected return. From this perspective, public pension systems eliminate this risk, but instead present the risk of demographic and redistribution between generations.

Supplementary pension schemes, namely compulsory private pension funds, occupational pension funds and voluntary pension funds, have developed as a complementary form of the public pension system, with the main role of increasing the income of beneficiaries and maintaining the level of living and consumption during retirement, through investments in financial assets. As a result, their return is conditioned by the investment structure and the level of development of the financial markets, as well as by the stability of macroeconomic policies. Thus, with the increase in public system expenditure, the increase in social contribution pressure and negative rates of return, the attractiveness of private pension funds in CEE countries has diminished.

From the perspective of personal savings for the retirement period, the empirical study highlights the correlations between the interest rate on bank deposits and equalized average net income, the level of inflation, the share of the population with severe material disadvantages and the investment structure of private pension funds in CEE countries.

The empirical results reflect the fact that with the increase of the population's incomes, the competitiveness of the saving instruments will also increase. Increasing the responsibility of the population to provide the necessary resources for old age is an opportunity to develop the stock market and stimulate competitiveness in the financial-banking sector, as well as to reduce the risk of poverty of the elderly population in CEE countries.

Financial Sustainability of Public Pension Systems in CEE

The public pension systems implemented by the CEE countries operate on the basis of the principle of contributivity and solidarity, so that their financing is based on the compulsory social contributions paid by employees and employers.

The sustainability of the budgets of the public pension systems in the CEE countries is conditioned by the balance between the revenues obtained from social contributions and the expenses with the benefits granted to the beneficiaries.

The empirical study on the sustainability of public pension systems from the perspective of budget revenues confirms the existence of correlations between BASS revenues and the healthy life expectancy of the population, the minimum and average annual income, as well as the level of social contributions. The results show that the sustainability of public pension systems can be strengthened in CEE countries by increasing the income and tax base of taxpayers, while increasing the life expectancy of the population and maintaining good health.

Through the empirical study on the sustainability of public pension systems, from the perspective of budget expenditures, it was highlighted that pension expenditures are determined by their previous value, the level of budget deficit and public debt, life expectancy at the age of 65 years and the number of beneficiaries. The results support the financial sustainability of the pension systems in CEE countries by reducing current BASS expenditures, the budget deficit and the life expectancy of the population after the age of 65, respectively the period for which benefits are granted.

The empirical results highlighted, on the one hand, the importance of the quality of the human factor and the development of the labor market and the business environment, so as to ensure sustainable national economic growth, and on the other hand, the divergent relationship between the adequacy of public pension benefits. keeping the level of expenditure within the limits of the resources held.

Important Contributions to the Research Topic

It is appreciated that the results obtained from the research carried out by this doctoral thesis, brought some contributions to the topic addressed:

- synthesis of literature, empirical studies and reports of international bodies on the sustainability of pension systems;
- identifying the main typologies of social protection systems and presenting the principles that govern them;
- determining the economic and legislative framework for the functioning of pension systems;
- providing a historical perspective on the framework for the implementation and development of social protection and pension systems in CEE;
- highlighting the cultural influences and the "socialist heritage" on the current configuration of the pension systems implemented by the CEE countries;
- presentation and comparison of the reforms brought to the national pension systems by the CEE countries;
- identification of benefits provided by pension schemes in CEE countries and specification of eligibility criteria;
- highlighting the Community legal framework for social protection and influencing the social legislation of CEE countries;
- Synthesis of the main concepts on the sustainability of PAYG public pension systems in CEE countries;

- extending the scope of the factors influencing the sustainability of pension systems in CEE;
- establishing regression equations that highlight the correlations between different macroeconomic variables and indicators specific to pension systems;
- highlighting the need for a holistic approach in order to reform pension systems in CEE and maintain their sustainability;
- providing recommendations on strengthening the sustainability of pension systems in CEE countries, supported by the empirical results of econometric studies.

Future Research Directions

Without considering that the present doctoral thesis is an exhaustive research that captures all aspects of the topic addressed, we appreciate that the results obtained allow further developments and new research directions, respectively:

- expanding the panel of countries and comparing the results of empirical studies with CEE countries;
- introduction of new variables in the econometric modeling of the sustainability of pension systems;
- social policy in economic growth and maintaining macroeconomic stability;
- the role of private pension funds in the development of the stock market;

- optimizing the investment policy for the profitability of private pension funds;
- tax evasion on social contributions and budgetary impact;
- analysis of the implications of model pollution and climate change on the retirement decision;
- the impact of bilateral social security conventions on the transferability of social rights.

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