

DOI: [10.55643/fcapter.4.63.2025.4738](https://doi.org/10.55643/fcapter.4.63.2025.4738)
Mykhaylo Malyovanyi

D.Sc. in Economics, Professor of the Department of Finance, Banking and Insurance, Uman National University of Horticulture, Uman, Ukraine;
 e-mail: malyovanyi1980@gmail.com
 ORCID: [0000-0002-5541-6463](https://orcid.org/0000-0002-5541-6463)
 (Corresponding author)

Zoia Nepochatenko

Department of Economics, Uman National University of Horticulture, Uman, Ukraine;
 ORCID: [0009-0005-4236-3592](https://orcid.org/0009-0005-4236-3592)

Alla Osipova

Candidate of Economy Sciences, Associate Professor of the Department of Economics, Uman National University of Horticulture, Uman, Ukraine;
 ORCID: [0000-0002-5330-3676](https://orcid.org/0000-0002-5330-3676)

Inna Novak

D.Sc. in Economics, Professor of the Department of Management, Uman National University of Horticulture, Uman, Ukraine;
 ORCID: [0000-0003-1146-6861](https://orcid.org/0000-0003-1146-6861)

Olena Prokopchuk

D.Sc. in Economics, Professor of the Department of Finance, Banking and Insurance, Uman National University of Horticulture, Uman, Ukraine;
 ORCID: [0000-0001-7405-2469](https://orcid.org/0000-0001-7405-2469)

Received: 17/02/2025

Accepted: 03/08/2025

Published: 31/08/2025

© Copyright
 2025 by the author(s)



This is an Open Access article distributed under the terms of the [Creative Commons CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/)

THE IMPACT OF POPULATION AGEING ON ECONOMIC GROWTH: THE ROLE OF SOCIAL POLICY MODELS IN OECD COUNTRIES

ABSTRACT

The article examines the impact of population ageing on economic growth in OECD countries, taking into account the specifics of different models of social policy. The main goal of the paper is to identify the specifics of the economic impact of ageing within each model (Scandinavian, Anglo-Saxon, Continental, Mediterranean, and Central and Eastern European) and to assess their ability to adapt to demographic changes. The analysis is based on ARDL and PMG panel models, which allows to take into account the short- and long-run effects of ageing on economic growth. The results show significant differences in the impact of ageing on the economy depending on the model of social policy: the negative short-run effect is most evident in the Scandinavian model, while in the Mediterranean model, the negative impact persists in the long run. At the same time, countries with developed private and corporate pension systems, as in the Anglo-Saxon or Continental models, can better adapt to demographic challenges by reducing the burden on public finances. The findings of the study help to identify best practices from different social models to reduce the negative impact of ageing on the economy and ensure an adequate level of social protection.

Keywords: population ageing, economic growth, social policy models, OECD countries, pension reform, economic analysis, economic evaluation

JEL Classification: J11, H55, I38

INTRODUCTION

Population is an important factor in the economic development of countries, as it provides both workforce and demand for goods and services. The demographic structure of a society affects the stability of the economy, the efficiency of the labour market, and social well-being. The age structure of the population is undergoing significant changes caused by demographic processes such as births, deaths, migration and increased life expectancy. These processes affect the size of the working-age population and the proportion of elderly people requiring social support.

In today's world, population ageing is becoming an increasingly important issue, especially for developed countries, including OECD countries. Although demographic change is a slow and evolutionary process, it has a long-run impact on social and economic development, gradually changing the structure of the population, its ability to work, and the demand for resources and social services. Over the past decades, OECD countries have been experiencing a significant acceleration of population ageing, which is projected to continue in the future. According to the OECD, in 1950, the demographic dependency ratio was 14, meaning that for every 100 people of working age, on average, there were 14 people aged 65 and older in all OECD countries (OECD, 2015). In 2024, the elderly dependency ratio is 33.9. This ratio is expected to continue to grow and reach 35.4 in 2025, 52.7 in 2050, and 58.6 by 2075 (OECD, 2024). The steady decline in the share of the working-age population and the growing number of elderly people increases the burden on social protection systems and creates risks of slower economic growth. This requires the adaptation and revision of existing socioeconomic models and the development of new approaches to maintain economic stability in the future.

The study is relevant because it aims to assess the impact of population ageing on the economic development of OECD countries. These countries use different models of social protection, and assessing their effectiveness in the context of demographic change is important to determine the most sustainable strategies. Assessing the impact of population ageing in light of existing social policy models in OECD countries will help identify effective social protection mechanisms and strategies that maintain economic stability even in the face of a demographic crisis.

LITERATURE REVIEW

Theoretical background and empirical studies of the impact of population ageing on economic growth

Population ageing is a challenge for OECD countries. According to forecasts, an increase in the elderly dependency ratio (the ratio of people aged 65 and older to people aged 20-64) could lead to an increase in public spending by 6-7% of GDP in OECD countries by 2050 (Elmeskov, 2004; United Nations, Department of Economic and Social Affairs, 2015). The main reasons for this growth are the increased pressure on the pension system and the growing demand for health care (Tosun, 2003; Lisenkova et al, 2013). In recent decades, researchers have paid special attention to how the rapid pace of ageing affects the structure of the labour market, public spending, and economic productivity. There is also a focus on social protection models aimed at ensuring economic stability in both the short and long run.

Researchers who have focused on the impact of population ageing on economic development include Tosun (2003), Elmeskov (2004), Breyer et al. (2010), Fernández & Forder (2010), Meier & Werding (2010), Sharpe (2011), Bloom et al. (2010; 2011; 2023), Aigner-Walder & Döring (2012), Burtless (2013), Nagarajan et al. (2016), Aiyar et al. (2016), Börsch-Supan et al. (2016; 2018), Vo, 2019, Cristea et al. (2020), Stoodley & Conroy (2024). Their research covers various aspects of social and economic sustainability, labour market structure, and financial sustainability of the state in the context of an ageing population. Social policy models have been studied by Esping-Andersen (1990), Ferrera (1996), Kangas & Palme (2000), Esping-Andersen & Myles (2007), Rhodes (2009), Kostadinova (2014), Trufen (2015), Santos & Simões (2021).

Continued declines in fertility rates and increases in life expectancy are slowing population growth, leading to an ageing population. This process affects economic growth through public spending, consumption, and sources of income, and its effects may differ between developed and developing countries (Elmeskov, 2004; Nagarajan et al., 2016; Tosun, 2003). Studies show that the process of population ageing is most noticeable in high-income countries. It is expected that the impact of this process will soon be felt in developing countries, such as Central and Eastern Europe and South-East Asia (Çiftçi et al., 2023).

According to Bloom et al. (2011), in developed countries, flexible institutions and policies help to mitigate the negative effects of population ageing. For example, a health care system for the elderly and a pay-as-you-go pension system help to improve the well-being of older people and reduce the risk of pension funds being depleted. At the same time, in developing countries, population ageing has not yet had a significant negative impact. However, in the long run, declining fertility rates and increased migration from developing to developed countries may reduce the labour force and negatively affect the economic growth of these countries (Vo, 2019). In these countries, additional challenges include limited pension budgets and a lack of research on the impact of age-related diseases on the population. According to Stoodley & Conroy (2024), in addition to social costs, population ageing requires strengthening the health care system and improving the quality of care for the elderly.

Researchers emphasize the importance of conducting empirical research on population ageing and its impact on economic growth to address future challenges (Nagarajan et al., 2016). Previous studies have shown that changes in the share of elderly people are related to labour productivity, consumption and savings, and government spending, which ultimately affects economic growth (Aigner-Walder & Döring 2012; Bloom, Canning, & Fink, 2010; Sharpe, 2011). Scientists also emphasize that population ageing affects economic development in the short and long run, with both negative and positive aspects.

In the short run, an ageing population can have a negative impact on the economy through a shrinking labour force, as the share of the working population declines, limiting productivity and growth opportunities (Aiyar, Ebeke & Shao, 2016). Social and healthcare expenditures are also increasing, putting pressure on the budget. As this is mainly related to existing public pay-as-you-go pension programs, many countries have launched reforms in this area, which will include changes in indexation rules and the addition of pre-funding elements. According to Meier & Werding (2010), some countries have made progress in ensuring the long-run sustainability of their social security systems. In addition, ageing is changing consumer demand, increasing the demand for health and social services, which affects the consumption structure of the economy (Cristea et al., 2020).

However, even in the short run, some positive aspects can be identified. The additional health expenditures of the elderly can contribute to their economic activity and productivity (Sharpe, 2011). Older people also continue to participate in the economy by paying taxes and contributing to income redistribution, thereby supporting public sector spending (Cristea et al., 2020).

In the long run, the negative impact of population ageing becomes even more pronounced. Researchers, in particular Bloom et al. (2010), point out that population ageing reduces economic growth due to a shrinking labour force and lower savings rates. According to their forecasts, the process of population ageing will lead to a moderate but steady slowdown in economic growth in OECD countries (Bloom et al., 2010). The ageing population also puts pressure on social security systems, requiring large-scale reforms to ensure the financial sustainability of the country (Fernández & Forder, 2010). In addition, healthcare costs are rising, which affects budgetary obligations in the long run (Breyer et al., 2010).

Despite the negative effects, there are positive aspects in the long run. Some studies have shown that although the labour market is changing, the share of older workers does not significantly reduce labour market productivity (Börsch-Supan & Weiss, 2016). Burtless (2013) even emphasizes that older workers contribute to productivity growth. Labour market adaptation that includes flexible forms of employment for older workers can promote their economic activity, which has a positive impact on the economy (Sharpe, 2011). Older people also accumulate assets during their lifetime, which has a positive impact on the country's economic growth and maintains a high level of spending (Cristea et al., 2020). The results of the study by Breyer et al. (2010) indicate that the impact of population ageing is negligible, causing only 0.5% of annual growth in healthcare expenditures. In addition, they found that increasing life expectancy leads to a further increase in the demand for life-prolonging medical care. Vo (2019) finds that, on the contrary, a large share of young people (under 14) has a negative impact on long-run economic growth, while in the long run, there is a positive relationship between the share of people aged 65 and older and economic productivity.

Thus, a review of recent studies on the subject has revealed two main approaches to assessing the impact of population ageing on economic growth. The first one points to the negative effect of ageing due to a shrinking labour force and rising social costs, while the second approach emphasizes the possibility of labour market adaptation and potential positive economic effects due to asset accumulation and changes in consumption. The controversial nature of these views emphasizes the need for further empirical research to better understand the long-run effects of ageing on economic stability.

Therefore, population ageing poses both short- and long-run challenges for economic development. The growing proportion of elderly people requires new approaches to social policy and labour market reforms to ensure the stability and efficiency of the economic system.

Social models of OECD countries: theoretical basics and practices of adaptation to population ageing

Assessment of the impact of population ageing in scientific research often intersects with the functioning of a particular social policy model, as the assessment of the impact of population ageing on the economy necessarily includes an analysis of social policy models due to the close relationship between demographic changes and the need for social protection. Population ageing leads to a decrease in the share of the working-age population and an increase in the number of people requiring pension payments, medical care, and nursing care, which puts an additional burden on the state budget. In this context, social policy models play a key role in determining how social expenditures are financed, resources are allocated, and social support is provided. Different models (Scandinavian, Continental, Anglo-Saxon, etc.) have different ways of financing social expenditures: from high taxes and mandatory contributions to private savings and insurance. The effectiveness of a particular model determines how resilient social systems are in responding to an ageing population.

The systematization of models is one of the main topics of research in the field of social policy, in particular, thanks to the work of the Danish sociologist Esping-Andersen (1990). In his work "The Three Worlds of Welfare Capitalism" (1990), Esping-Andersen identified three main "models of welfare capitalism" – liberal, social-democratic, and conservative-corporate, which are actively used in economically developed countries. Esping-Andersen (1990) also studied how these models affect social protection and economic development, which later became the basis for numerous other studies (Ferrera, 1996; Kangas & Palme, 2000; Esping-Andersen & Myles, 2007; Rhodes, 2009; Kostadinova, 2014; Trufen, 2015; Santos & Simões, 2021). Assessment of the results of the studies suggests that the chosen model of social policy affects the economic consequences of population ageing, as it has its own characteristics in financing, resource allocation, level of government intervention and private insurance. Therefore, in our research, five main models were chosen to conduct an extended assessment of the impact of population ageing on economic development in OECD countries, which not only facilitates comparisons between different countries but also helps to understand how socioeconomic processes and government support affect the well-being of citizens (Table 1).

Table 1. Models of social policy in OECD countries.

Anglo-Saxon model (liberal, neoliberal, transatlantic)	Scandinavian model (Nordic, Swedish, social-democratic)	Continental European model (Bismarck, conservative-corporate)	Mediterranean model (southern)	Central and Eastern European model
USA, UK, Ireland, Canada, New Zealand, Australia, Mexico, Chile, Colombia, Costa Rica, Japan, Korea, Switzerland	Sweden, Norway, Finland, Denmark, Iceland, the Netherlands	Germany, Austria, France, Belgium, Luxembourg	Italy, Spain, Greece, Portugal, Israel, Turkey	Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia

Each of the five main models of social policy in the OECD countries responds differently to the processes of population ageing. In countries with the Anglo-Saxon model, social policy is focused on minimal government intervention. In the context of an ageing population, this model places the primary responsibility on market mechanisms and the private sector to provide social services, which can be a challenge due to limited access to health and social services for older people. The research of Kangas & Palme (2000) shows that the Anglo-Saxon model is less adaptive to demographic changes, such as population ageing, compared to other models that provide more extensive state support.

The Scandinavian model, which provides a high level of social protection through the tax system, is the most adapted to the challenges of an ageing population. Countries that use this model emphasize inclusiveness and a comprehensive definition of social rights. According to Esping-Andersen & Myles (2007), the Scandinavian model is unique at the international level because it emphasizes social responsibilities, especially in relation to children and the elderly. This model places public responsibility for social services, which reduces the dependence of the elderly on the private sector. In contrast to the Anglo-Saxon model, where everyone has to take care of their own well-being, the Scandinavian model is based on the concept of "solidarity" where social protection is a matter for the whole society (Trufen, 2015). However, due to the high costs required to maintain the Scandinavian model, countries with this system are also forced to look for optimization ways to ensure economic sustainability in the long run.

The Continental model is based on the principle of social insurance and is often under financial pressure due to the declining share of the working-age population, which forms the main part of funding through labour contributions. The social guarantees of this system are closely linked to labour activity, and the main recipients are employees who contribute to insurance funds. Family values and a corporate approach also play an important role in social protection. The state provides basic social protection, but the insurance sector carries the main burden. The main advantage of this model is the high stability of social protection for those who are part of the labour market, but it is less effective in addressing social inequality and supporting those who are not part of insurance programs. Without additional reforms, this model risks becoming financially unsustainable, especially due to the growing need for health care and other social services for the elderly financed by the state.

Social policy in Southern European countries developed in the context of uneven economic growth and delayed industrialization, which created a specific context for the formation of their social protection systems. Compared to Northern Europe, where the social protection system was formed gradually, in the Southern European countries it developed rapidly and with limited geographical spread, which led to its current features (Rhodes, 2009). The Mediterranean model is heavily dependent on family support, which poses certain challenges in the context of an ageing population. The decline in the working-age population and rising life expectancy limits the opportunities for traditional family support, which puts additional pressure on the state. In countries such as Italy and Spain, the decentralization of social policy has led to regional fragmentation, with some regions implementing minimum income programs and others not. This creates inequality and increases dependence on local resources, particularly in rural areas (Ayala, 1994). The Mediterranean model suffers from rapid and uneven growth, which makes further reforms difficult in the face of economic recession and a transition to austerity. There is a concern that in the absence of reforms, the Mediterranean model of social policy may not be able to meet the growing needs of the elderly.

Continental and Mediterranean countries are characterized by a high share of expenditures on elderly care. This is due to low employment rates among the elderly and early retirement age. Pension programs in these countries provide a high level of social benefits to certain groups of the labour force (usually civil servants and full-time employees of private medium and large enterprises) but offer minimal support to people outside these categories (Ferrera, 1996). This dynamic extends to other areas of social protection, such as short-run risks associated with sickness, maternity leave, or temporary unemployment. In addition, the role of the state in redistributing resources pays little attention to younger segments of the population: young people receive minimal support from the state, and the same goes for families with young children.

In contrast, the Scandinavian countries allocate a relatively large share of resources to support families, the elderly, and youth (Aiginger & Leoni 2009).

In the post-communist countries of Central and Eastern Europe, social policy is less dependent on public funding than in other European countries. Despite some common characteristics, different countries in the region reflect elements of other European models. For example, Croatia and Slovakia are similar to the Continental model, Hungary shows features of the Mediterranean model, and Bulgaria and Romania are similar to the Scandinavian model, at least in terms of the level of public contribution to social protection programs (Kostadinova, 2014). The Central and Eastern European model also faces challenges in the context of ageing. These countries, which have limited economic resources and face high costs of adapting to market conditions, must find a balance between public spending on social support and the needs of the elderly population (Santos & Simões, 2021).

Assessment of existing research has shown that scientists are actively describing different models of social policy and their characteristics in the context of demographic change. However, there is a lack of research that systematically assesses the impact of a social policy model on the economic consequences of population ageing. Such studies are extremely important, as many countries are currently reforming their social protection systems in an effort to adapt to the growing share of the elderly population. The results of studies on the impact of social policy models on economic growth in the context of ageing can provide governments with valuable information to choose a reform path that will ensure economic sustainability, balance public spending, and reduce the negative impact of demographic change on financial resources.

AIMS AND OBJECTIVES

This study aims to analyze the impact of population ageing on economic growth in OECD countries, taking into account the specifics of different social policy models. Particular attention is paid to identifying the specifics of the impact of demographic changes within each model (Scandinavian, Anglo-Saxon, Continental, Mediterranean, and Eastern European) and assessing their ability to adapt to demographic challenges.

To achieve this goal, the following objectives were set:

- to analyze the dynamics of population ageing in OECD countries and its impact on economic performance;
- to estimate the short- and long-run effects of demographic changes on economic growth using ARDL/PMG econometric models;
- to identify the key features of social models of OECD countries in the context of their adaptation to population ageing;
- to develop recommendations for minimizing the negative impact of population ageing through the improvement of social policy and the development of private pension systems.

METHODS

Description of the economic growth model

The research used the neoclassical model of economic growth, first developed by Solow (1957) and independently by Swan (1956) and later expanded by Romer (1986), Lucas (1988), Mankiw et al. (1992). Based on the theory of economic growth, which includes both the neoclassical Solow model and endogenous growth models, the study uses a model that allows analyzing the impact of population ageing on economic growth, including additional factors: capital, labour, technological progress, and human capital. This model takes into account short-run and long-run effects, which allows us to get a more complete picture of the mechanisms of demographic change's impact on economic growth.

The logic of the interaction of variables in the model. 1. Economic growth (GDP per capita) is the result of a complex interaction between factors such as capital, technology, labour, and population ageing. 2. Population ageing can have a negative impact on the economy by reducing the share of the working-age population, increasing social costs, and reducing labour productivity. 3. Capital and technology can partly cover the negative effects of population ageing by increasing labour productivity and investment opportunities. 4. Education and employment are key to ensuring high levels of labour productivity and the economy's ability to adapt and grow. These variables have a strong theoretical and empirical basis in modelling economic growth using the ARDL/PMG (Autoregressive Distributed Lag/Pooled Mean Group) model, which will allow estimating both short- and long-run effects:

Short-run effects:

$$\Delta GDP_{i,t} = \alpha_i + \sum_{j=1}^p \beta_j \Delta GDP_{i,t-j} + \sum_{j=1}^q \gamma_j \Delta Elderly_{i,t-j} + \sum_{j=1}^r \delta_j \Delta GFCF_{i,t-j} + \sum_{j=1}^s \eta_j \Delta R\&D_{i,t-j} + \sum_{j=1}^v \lambda_j \Delta Education_{i,t-j} + \sum_{j=1}^w \kappa_j Employment_{i,t-j} + \sum_{j=1}^x \phi_j Health_{i,t-j} + \sum_{j=1}^y \rho_j Inflation_{i,t-j} + \sum_{j=1}^z \mu_j SocialSpending_{i,t-j} + \varepsilon$$

Long-run effects:

$$+\theta_1 GDP_{i,t-1} - \beta_1 Elderly_{i,t-1} - \beta_2 GFCF_{i,t-1} - \beta_3 R\&D_{i,t-1} - \beta_4 Education_{i,t-1} - \beta_5 Employment_{i,t-1} - \beta_6 Health_{i,t-1} - \beta_7 Inflation_{i,t-1} - \beta_8 SocialSpending_{i,t-1}$$

Description of variables:

1. $\Delta GDP_{i,t}$ – GDP per capita in the country for the year (the main outcome indicator reflecting economic growth).
2. $Elderly_{i,t}$ – share of the population aged 65+ in the country per year, representing the factor of population ageing.
3. $GFCF_{i,t}$ – Gross Fixed Capital Formation per capita in the country for the year, which represents investment in capital.
4. $R\&D_{i,t}$ – research and development expenditures as a percentage of GDP in a country for a year, which serve as a proxy for technological progress. $Education_{i,t}$ – higher education expenditures as a percentage of the country's GDP per year, representing investment in human capital.
5. $Employment_{i,t}$ – employment rate (percentage of the employed population) in the country for the year, which characterizes the labour force.
6. $Health_{i,t}$ – health care expenditures as a percentage of GDP in the country for the year, which reflects the social costs of maintaining the health of the population.
7. $Inflation_{i,t}$ – annual inflation rate in the country for the year, which affects overall stability and purchasing power.
8. $SocialSpending_{i,t}$ – annual social security expenditures as a percentage of GDP in the country for the year, which reflects the overall social obligations of the state.

Model parameters explanation:

1. α_i – a constant term for each country that accounts for individual characteristics that do not change over time.
2. Δ – a first difference operator used to study short-run effects.
3. $\beta_j, \gamma_j, \delta_j, \eta_j, \lambda_j, \kappa_j, \phi_j, \rho_j, \mu_j$ – short-run coefficients for the relevant variables.
4. θ_1 – the speed of adjustment coefficient, which shows how quickly the indicators return to balance in case of a long-run deviation.
5. $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$ – long-run effect coefficients for the respective variables, which show the impact of each variable on economic growth in the long run.
6. ε – is a random error for country *iii* in year *ttt* that takes into account unobserved factors.

This model allows us to estimate how short-run changes in social and economic indicators affect GDP growth, as well as how demographic and socioeconomic factors affect economic growth in the long run for all OECD countries.

Data

The study was conducted on the basis of economic and statistical analysis for all OECD countries (38 countries) for the period from 1980 to 2023 (1672 observations in total). The choice of this period was based on two factors:

1. Ensuring the availability and completeness of data for all variables included in the economic growth model.
2. Important structural changes in the social systems of OECD countries, where the share of the funded principle of social protection financing is gradually increasing, which is a key factor in studying the impact of social policy on economic growth.

Description of data collection and processing method

Data collection method: all indicators are collected on the basis of official data from OECD (2024) (<https://www.oecd.org/en/data.html>), obtained using the analytical method of processing national statistics of OECD member countries. Sample size and structure: the study covered 38 OECD countries, taking into account the availability of data for each indicator for the period from 1980 to 2023, providing 1672 observations for panel analysis. The data covers economic growth, demographic changes, and social costs, which allows for the assessment of long- and short-run effects. Sampling errors: all data are complete based on the OECD analytical framework, so random or systematic sampling errors are minimized due to the representativeness of national statistics. Methods of handling missing values: when preparing the data for modelling, the gaps were filled using linear interpolation and extrapolation methods to ensure that the dataset is complete for all countries and periods. Data that had significant gaps at the beginning or end of the period were analyzed and adjusted to maintain the correctness of the panel analysis.

Description of the econometric research method

In the studies conducted to assess the impact of population ageing on economic growth in OECD countries, the integrated ARDL/PMG (Autoregressive Distributed Lag/Pooled Mean Group) model was used. This methodological approach combines the features of ARDL modelling with the possibility of averaging long-run effects through PMG. The ARDL model allows the estimation of time lags for each variable, which makes it possible to study short-run effects at the country level. It is suitable for non-stationary data and allows to analyze the impact of variables even in the case of different integration orders ($I(0)$ or $I(1)$). This makes it possible to study in detail the lagged effects of various factors on economic growth. The integrated ARDL/PMG model allows for time lags in the impact of various factors (e.g., population ageing, capital investment, technological progress) on growth. ARDL/PMG is the optimal approach for studying panel data that include non-stationary variables and provides the ability to estimate overall long-run effects while taking into account short-run individual effects for each country.

The calculations were performed in the EViews9 framework, which provides powerful tools for modelling panel data and allows for the correct implementation of the ARDL/PMG approach to estimate short- and long-run effects in panel studies.

The classification of social models is based on a typology that includes five main models of social policy (Table 1).

Several processing steps were performed to prepare the data for use in ARDL/PMG modelling:

29. Filling in missing values: some data were incomplete for all countries and all years, so linear interpolation and extrapolation methods were applied to preserve the integrity of the panel dataset. This helped to avoid losing valuable information and ensure that data were available for each year and country.
30. Checking the stationarity of variables: since the ARDL model requires variables to be integrated of order no higher than $I(1)$, a unit root test was conducted for each variable. This allowed us to determine which variables need to be differentiated to achieve stationarity, ensuring the correctness of the estimates.
31. Selection of the optimal number of lags: for each variable, the optimal number of lags was selected based on information criteria (AIC, BIC). This minimized the estimation error and ensured accurate modelling of the impact of each factor, taking into account the corresponding delay.

These data processing steps were necessary to ensure the reliability and correctness of the calculations, which allowed us to adequately assess both the short- and long-run impact of socio-demographic changes on the economic growth of OECD countries.

RESULTS

The study of the impact of population ageing on economic growth in OECD countries is extremely relevant given the growing share of the elderly population. Scientific studies show that the ageing process can have both positive and negative effects on the economy, depending on specific factors such as the level of investment, innovative technologies, education, health care, and social support. Given the results of Table 2, we can assess how these factors interact in the short run and long run and determine the extent to which they affect economic growth.

Table 2. Results of assessing the impact of selected factors on economic growth in OECD countries. Note: p-values and any subsequent tests do not account for the model. (Source: authors' calculation based on data OECD - [Electronic resource]: Access mode: <https://www.oecd.org/en/data.html> (application date 10/22/2024))

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
DAGE	79.9191689146109	88.42124647894245	0.903845762156764	0.3662519030820668
DINVEST	33.65775189400381	7.901721892200346	4.259546508113226	2.202461219667395e-05
DTECH	1615.017690366497	412.4983841523607	3.915209737573111	9.521786661395528e-05
DEDU	-2864.054276100118	1017.744093054234	-2.814120264265191	0.004968009758320446
DEMRATE	398.5329074638925	44.52705886750838	8.950353281804202	1.256638002484856e-18
DHEALTH	822.6831829136861	170.3594577483006	4.829101910673888	1.541571667873414e-06
DINFL	-1.092852104875482	7.48088118582549	-0.146086012827764	0.8838771180663226
DSOC	-20.09409879653463	33.05861049685851	-0.607832528183365	0.5434093194352946
Short Run Equation				
COINTEQ01	-0.993289480066317	0.1216809460020211	-8.163065070597162	7.923980793661394e-16
D(DAGE)	-1570.082095395498	442.2797856232067	-3.549974804259095	0.0003996156049213989
D(DINVEST)	-7.266060562242954	7.174243483896864	-1.012798154753485	0.311353209700957
D(DTECH)	357.5042326604542	1579.115179190139	0.226395286025812	0.8209311271622976
D(DEDU)	1040.147191520572	1889.211499780915	0.550572125800205	0.5820257136311744
D(DEMRATE)	594.9643825958864	190.8735117504634	3.117061016688931	0.001868428411778836
D(DHEALTH)	-466.5182477969157	406.3496089650805	-1.14807111291451	0.251159576391419
D(DINFL)	376.4236817895858	96.90447347319752	3.884481988271672	0.0001079362328204466
D(DSOC)	144.2343956670682	136.3991791900234	1.05744328172334	0.2905142932501022
C	892.24494389234	151.8244957846581	5.876818093688026	5.362106658713654e-09
Mean dependent var	-417.5105591105901	S.D. dependent var		4820.811791100534
S.E. of regression	2007.882162278357	Akaike info criterion		17.29832518254542
Sum squared resid	5023362108.884132	Schwarz criterion		18.58028912065003
Log likelihood	-13744.73167413961	Hannan-Quinn criter.		17.77385834818805

The long-term coefficient of the impact of population ageing on economic growth in the OECD countries as a whole over the study period was statistically insignificant (coefficient = 79.92, p-value = 0.366), indicating a neutral effect of demographic change in the long run.

This result is explained by the fact that despite the generally accepted view that population ageing has negative consequences for the economy, there are certain conditions under which this impact can be neutralized or even changed to a positive one. We outline the main measures that, according to scientists, help to reduce the impact of population ageing on economic growth in the long run:

1. Adapting economies to population ageing through pension system reform. Many OECD countries are raising the retirement age, introducing funded schemes, and developing private pension systems, which reduce the burden on budgets and provide older people with additional income and economic activity in the long run. Gruber and Wise (1999) confirm the effectiveness of raising the retirement age to reduce pressure on budgets, which contributes to economic stability even in the face of an ageing population. Similarly, Blake (2006) identifies the role of private pension funds as an additional source of investment growth for OECD economies.
2. Involvement of the elderly in the labour market. The introduction of flexible working conditions for the elderly allows them to remain economically active for longer and allows them to maintain consumption and investment levels, ensuring a stable contribution to the economy. In their paper, Börsch-Supan and Coile (2018) demonstrate that raising the retirement age and flexible employment conditions reduce the burden on social funds.
3. Development of technologies and innovations. Investing in technological development increases labour productivity and compensates for the reduction of the labour force, contributing to economic growth despite demographic

changes. Acemoglu and Restrepo (2018) show that demographic changes stimulate the introduction of automation, which has a positive impact on labour productivity, offsetting the demographic challenges of ageing.

4. Increased savings and investment. Pension funds and personal savings of the elderly are becoming important sources of long-term investment and can be used to finance infrastructure projects and technologies, which contributes to economic growth. Davis and Hu (2008) emphasize the importance of private pension funds as a source of investment that supports economic growth even in the face of an ageing population.
5. Changes in the structure of demand and the creation of new markets. Population ageing opens up economic opportunities, in particular through increased demand for healthcare, social services, and technology to improve the quality of life, which stimulates new markets and economic growth. Research by Harper (2016) confirms that population ageing contributes to the development of new markets for health and social services, creating jobs and supporting economic growth.
6. Effective social and pension reforms. Effective social programs that support the elderly are key to economic stability, and their targeting and the development of private pension systems contribute to strengthening public finances. Barr and Diamond (2008) emphasize the importance of structural reforms of social systems to ensure stability and reduce economic pressures arising from population ageing.

At the same time, other factors included in the model have a significant positive impact on economic growth in the long run:

1. Investment (coefficient = 33.66, p-value < 0.0001). The high coefficient and low p-value demonstrate that capital is one of the main drivers of economic growth in oecd countries, which is consistent with classical economic theories, where capital accumulation contributes to increased productivity and expanded production opportunities.
2. Technology (coefficient = 1615.02, p-value = 0.0001). The high coefficient confirms that investments in technology ensure productive growth and competitiveness of countries in the global market.
3. Employment rate (398.53, p-value < 0.0001). Employment plays a key role in ensuring economic growth, reduces dependence on government support, and stimulates productive activity.
4. Health care costs (coefficient = 822.68, p-value < 0.0001). An economically active and healthy population provides a higher level of productivity, which has a positive impact on long-term growth.

The negative impact of higher education expenditures (coefficient = -2864.05, p-value = 0.005) may indicate that there is no immediate economic effect, as investments in education take decades to pay off and have a less direct impact on growth compared to capital investment or innovation.

The impact of the other factors included in the model (inflation, social protection expenditures) in the long run is insignificant and statistically insignificant.

In contrast to the long-run growth rate, in the short run, population ageing (coefficient = -1570.08, p-value = 0.0004) has a significant negative impact on economic growth, which may be due to the growth of social security and health care costs, which negatively affects economic development.

The impact of most of the factors included in the model (capital, technology, higher education expenditures, health care expenditures, social protection expenditures) in the short run is insignificant and statistically insignificant, except for the employment rate (coefficient = 594.96, p-value = 0.0019), which confirms the importance of an active labour market even in the short run, and inflation (coefficient = 376.42, p-value = 0.0001), which may reflect a short-run stimulus to consumption and investment in the face of higher prices.

Since the results of the study indicate a significant impact of population ageing on economic growth in the short run due to the growing need for social security resources for health care to support the growing number of elderly people, we analyze this impact by individual social policy models (Table 3).

Table 3. Results of the assessment of the impact of selected factors on economic growth in the countries of the Anglo-Saxon model.

Note: p-values and any subsequent tests do not account for the model. (Source: authors' calculation based on data OECD - [Electronic resource]: Access mode: <https://www.oecd.org/en/data.html> (application date 10/22/2024).

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
DAGE	35.7370076841697	179.3183608698838	0.1992936334617793	0.8421374561023547
DINVEST	32.97128878901615	11.6680812741285	2.825767837435535	0.004960596448283062
DTECH	1694.328872148015	643.3005041520937	2.633806224637172	0.008781119615043954
DEDU	-4398.02811526366	1539.035529516817	-2.857652101536882	0.00449783666895175
DEMRATE	235.752043140687	74.85779314823136	3.149331996387567	0.001763189158031538
DHEALTH	828.531848736283	268.4454498076478	3.086406751650886	0.002171329238048287
DINFL	1.612440993822188	8.356277729003046	0.1929616326927134	0.8470899800434211
DSOC	-39.65488223060665	38.56081111284599	-1.028372616814489	0.3044152332370537
Short Run Equation				
COINTEQ01	-0.783478434505338	0.1722162520046951	-4.549387327764972	7.20533639875446e-06
D(DAGE)	-1337.14910832326	743.0632569109038	-1.79950912104323	0.07271499010696659
D(DINVEST)	1.673956846612485	12.22719490071375	0.13690440531988	0.8911773664648102
D(DTECH)	-2099.310114463781	965.5461739014038	-2.174220323385747	0.03029236281709775
D(DEDU)	5147.634924481236	2486.745123396657	2.070029162236803	0.03911079030121893
D(DEMRATE)	500.0400138146727	193.8510103776379	2.579506874070727	0.01026130115170164
D(DHEALTH)	-251.3826371270774	729.6432523561261	-0.344528146207513	0.7306357950781333
D(DINFL)	194.1991429466508	82.6813324426005	2.348766489478974	0.01933670001737762
D(DSOC)	-251.6173262498439	147.6804096864693	-1.703796236643955	0.0892198350974417
C	678.3406006082056	132.3487073496628	5.12540404959183	4.69284367696404e-07
Mean dependent var	-267.9536509243313	S.D. dependent var		3782.253403749799
S.E. of regression	1420.634907901032	Akaike info criterion		16.62648074938356
Sum squared resid	783062974.1202254	Schwarz criterion		17.67977855167356
Log likelihood	-4161.632033340958	Hannan-Quinn criter.		17.03923528067367

The results demonstrate the specifics of the impact of economic indicators on growth in countries with the Anglo-Saxon model of social policy. The analysis of coefficients and significance of indicators reveals short- and long-run features of this model in comparison with general trends in OECD countries. In the countries of the Anglo-Saxon model, population ageing does not have a significant long-term impact on economic growth (coefficient 35.74, p-value = 0.842), which is consistent with OECD trends, although the coefficient is slightly higher there. This is because private pension systems and market mechanisms in the Anglo-Saxon model compensate for the economic pressures associated with ageing. The positive and significant impact of investment on economic growth in the Anglo-Saxon countries (coefficient 32.97, p-value = 0.005) is in line with the general trend in the OECD, emphasizing the importance of market orientation and investment activity as the main instrument of economic stimulation, in contrast to models with an emphasis on government programs. Technology spending in Anglo-Saxon countries has a high positive impact in the long run (coefficient 1694.33, p-value = 0.009), which is higher than the OECD average. This can be explained by the developed innovation infrastructure and strong private sector in the technology sector that characterize this model. In contrast to the general trend in the OECD, where education spending has a negative impact in the long run, this effect is even more pronounced in Anglo-Saxon countries (coefficient -4398.03, p-value = 0.004). This is due to high education costs that do not provide immediate economic returns. The employment rate in Anglo-Saxon countries has a significant positive impact in both the short and long run (coefficient 235.75, p-value = 0.002). Compared to other OECD countries, the Anglo-Saxon model demonstrates a higher dependence of the economy on employment, as labour is a key driver of economic growth. The positive impact of healthcare spending on economic growth in Anglo-Saxon countries (coefficient 828.53, p-value = 0.002) is consistent with the general trend in the OECD. However, in these countries, expenditures are mostly regulated by private insurance systems, which reduces the burden on the state budget. The impact of inflation in Anglo-Saxon countries is statistically insignificant in the long run (coefficient 1.61, p-value = 0.847), which indicates their economic stability. In contrast to the general trend in the OECD, where inflation has some positive effect in the short run, its impact in Anglo-Saxon countries

is less pronounced. Social protection expenditures in Anglo-Saxon countries, as well as in the OECD as a whole, do not have a significant impact on economic growth (coefficient -39.65, p-value = 0.304). This is in line with the characteristic features of the Anglo-Saxon model, which is based on private and market mechanisms with minimal government intervention.

The results confirm that the Anglo-Saxon model of social policy, which emphasizes market mechanisms, provides a more flexible response to demographic challenges such as population ageing.

The results of the calculations for countries that use the Continental model of social policy are presented in Table 4.

Table 4. Results of the assessment of the impact of selected factors on economic growth in the countries of the Continental model. Note: p-values and any subsequent tests do not account for the model. (Source: authors' calculation based on data OECD - [Electronic resource]; Access mode: <https://www.oecd.org/en/data.html> (application date 10/22/2024).

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
DAGE	163.5650337112517	118.0923293625139	1.385060609729764	0.1679988287699007
DINVEST	40.73705992339301	19.07959280878695	2.13511159968948	0.03430341197188011
DTECH	1804.930961470723	771.2969364813296	2.340124634365657	0.02053564810492873
DEDU	67.70699307943737	2758.501252242921	0.02454484768654182	0.9804491391425584
DEMRATE	638.147811992361	124.6903653345421	5.117859830470635	8.92199830511825e-07
DHEALTH	83.34342729947275	334.0329509773048	0.2495066042305968	0.8032950755929235
DINFL	265.3651945445213	90.79339490597516	2.922736778587597	0.003982531333088574
DSOC	185.5118497787883	83.26940700860283	2.22785121742998	0.02731189966475719
Short Run Equation				
COINTEQ01	-2.24279830965771	0.2380136434396875	-9.422982133484426	5.47221976597385e-17
D(DAGE)	-722.176511797372	1080.235235984564	-0.668536340734299	0.5047730295111694
D(DINVEST)	-41.2694711807661	37.9511645553418	-1.087436226642939	0.2785106814413071
D(DTECH)	7580.73762599144	10594.4214210286	0.7155405023765269	0.4753379239792443
D(DEDU)	-9476.06593895892	9227.006941544188	-1.0269923929821	0.3060037150889191
D(DEMRATE)	1468.065601914696	977.6804718008864	1.501580162699293	0.1352141212267883
D(DHEALTH)	53.72567609951229	1120.879049063421	0.04793173370882805	0.9618315675129626
D(DINFL)	623.3347729673058	640.4912237341991	0.9732136052280816	0.331944202311747
D(DSOC)	771.6767902343821	588.8517572378073	1.310477179951322	0.1919483341086059
C	2918.047904959446	439.904064024447	6.63337337296634	5.02180681620101e-10
Mean dependent var	-887.363091154762	S.D. dependent var		7411.025854281346
S.E. of regression	2827.889765958478	Akaike info criterion		17.88799209959659
Sum squared resid	1255522802.960793	Schwarz criterion		18.79728049788219
Log likelihood	-1864.95915070663	Hannan-Quinn criter.		18.2553866062374

The Continental model, based on the social insurance system, has its own peculiarities that affect economic growth, particularly in the long run:

1. The ageing of the population (the coefficient is 163.57 but with a p-value of 0.168) is not statistically significant. This is similar to the results for all oecd countries, where ageing also did not show a statistically significant impact on economic growth in the long run.
2. Investment (coefficient of 40.74 (p-value = 0.034) has a significant positive impact on economic growth, which is consistent with the results for oecd countries.
3. Technology: a high coefficient (1804.93, p-value = 0.021) indicates a significant positive impact of technology, as the continental system is more oriented towards the corporate sector, which requires innovation to maintain high productivity.
4. The level of employment (the coefficient of 638.15 is statistically significant (p < 0.0001) and in these countries is extremely important for sustainable economic development. Compared to the oecd countries and the Anglo-Saxon model, where the employment also showed a high impact, the continental model is more focused on stable labour conditions.

- Social protection expenditures: the coefficient of 185.51 (p-value = 0.027) confirms the importance of social protection to support economic growth in the context of an ageing population. Compared to the Anglo-Saxon model, which reduces the role of the state in social support, the continental model demonstrates the opposite approach, which reduces social risks for the elderly.

As for the short-run impact, we found that: 1) the impact of ageing remains insignificant (coefficient = -722.18, p-value = 0.505), which is consistent with the results for the Anglo-Saxon model countries but differs from the results for all OECD countries. This confirms that the Continental model is able to contain the negative effects of ageing in the short run; 2) investment and technology: the absence of a significant short-run impact of these factors (p-value > 0.05) is similar to the general trend in OECD countries. However, in the Continental model, investments may play a greater role in maintaining stable employment in the long run; 3) inflation: the positive impact of inflation in the long run also emphasizes the need to control inflationary processes, which allows for increased social spending to support employment.

The results of the calculations for the countries that belong to the Scandinavian model of social policy (Table 5) show significant differences in the impact of various factors on economic growth compared to the average for all OECD countries.

Table 5. Results of the assessment of the impact of selected factors on economic growth in the countries of the Scandinavian model.
Note: p-values and any subsequent tests do not account for the model. (Source: authors' calculation based on data OECD - [Electronic resource]: Access mode: <https://www.oecd.org/en/data.html> (application date 10/22/2024).

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
DAGE	553.4709700236098	262.0715988996142	2.111907480045616	0.03600126908984673
DINVEST	35.93455839844173	25.46470810514686	1.411151396280043	0.159835316620641
DTECH	2643.392642410079	1212.5651341087	2.18000053609748	0.03048681874731864
DEDU	-8973.01115199011	4212.32615037411	-2.130179580513535	0.03444324338705158
DEMRATE	314.114098944605	165.3896803448315	1.899236386996386	0.05904849604555148
DHEALTH	2154.132228250774	549.1550318635899	3.922630410834259	0.0001222886285286682
DINFL	-3.51392771210078	67.16626077578931	-0.0523168577722494	0.9583311844295317
DSOC	-129.013669162637	135.73766349079	-0.95046331169087	0.3430843358182004
Short Run Equation				
COINTEQ01	-1.09760123080562	0.2799011262704361	-3.92138911847441	0.0001228727085504291
D(DAGE)	-2906.45117026623	1058.015851734437	-2.747077149649131	0.00659151977815879
D(DINVEST)	-11.7147703690174	11.83720045592798	-0.9896571754980086	0.3236003563281049
D(DTECH)	1361.694833863394	3919.225355161824	0.3474397898732644	0.7286455118313442
D(DEDU)	10215.76496481619	4967.912905486161	2.056349448786578	0.04111584704093138
D(DEMRATE)	1077.504447145073	615.4357699612717	1.750799189349814	0.08159441938781638
D(DHEALTH)	-2241.37183893084	1095.378871099257	-2.046206931745486	0.04211362654533441
D(DINFL)	492.9031094760267	165.35865442337	2.980812290683257	0.003250913076951979
D(DSOC)	200.8442725028814	101.9253321961542	1.970503977523063	0.05023319472697894
C	879.7021033108331	123.3449102016271	7.132050295977502	2.015968509102743e-11
Mean dependent var	-552.380282187172	S.D. dependent var		6085.430620331734
S.E. of regression	2511.635904969925	Akaike info criterion		17.89991937855395
Sum squared resid	1198579834.635478	Schwarz criterion		18.83635833892089
Log likelihood	-2241.08959983346	Hannan-Quinn criter.		18.27646597548129

Considering the peculiarities of the Scandinavian model, which is characterized by a high level of public financing of social expenditures and a developed social security system, the results obtained indicate the specifics of the impact of population ageing, investment, technology, healthcare and other factors on economic growth in both the short and long run:

- Population ageing. In the long run, population ageing has a significant positive impact on economic growth (coefficient = 553.47, p-value = 0.036). This differs from the average for all OECD countries. This positive effect is explained by the quality of social services for the elderly, which is typical of the Scandinavian model. In the short run, population ageing has a significant negative impact (coefficient = -2906.45, p-value = 0.007), which exceeds the similar indicators for the Anglo-Saxon and the Continental models. This is due to the limited spread of private pension systems and high social spending. The growing proportion of elderly people increases the burden on the

public system, which has a negative impact on the economy. The weakness of the private component of the pension system increases this effect in the short run.

2. Investment. The long-term impact of investment in the Nordic countries is positive, but not statistically significant (coefficient = 35.93, p-value = 0.159), which differs from the OECD average, where investment is an important factor in growth. This may indicate that in the Scandinavian countries, although investment stimulates the economy, it does not have such a significant effect as in countries with private financing systems.
3. Technology. Expenditures on technology have a significant positive long-term impact on economic growth (coefficient = 2643.39, p-value = 0.030), which is also typical of the average results for OECD countries.
4. Spending on higher education. In the Scandinavian countries, education expenditures have a significant negative impact in the long run (coefficient = -8973.01, p-value = 0.034), which indicates that the high costs of education in the Scandinavian countries do not provide immediate economic returns but can have a positive impact on other aspects of social development.
5. Employment rate. The employment rate in the Nordic countries is almost a significant factor of growth in the long run (coefficient = 314.11, p-value = 0.059), which is consistent with the indicators for OECD countries.
6. Health care expenditures. Healthcare spending has a significant positive long-term impact in the Scandinavian countries (coefficient = 2154.13, p-value = 0.0001). This confirms the importance of investment in health for sustainable economic growth and is a characteristic feature of this social policy model.
7. Inflation. Similar to the OECD average, inflation does not have a significant long-term impact on economic growth in the Nordic countries, which indicates the stability of the price level in this model.
8. Social protection expenditures. In the Scandinavian countries, social security expenditures do not have a significant impact on economic growth, which is consistent with the average for OECD countries.

Compared to the Anglo-Saxon model, where private pension funds and social programs have a significant impact on economic activity, the Scandinavian model relies on a high level of public provision, which leads to other mechanisms of long-term impact on the economy.

The results of the calculations for the countries of the Mediterranean social model are presented in Table 6 and allow us to identify the characteristic features of the impact of socio-economic variables on economic growth.

Table 6. Results of the assessment of the impact of selected factors on economic growth in the countries of the Mediterranean model.
 Note: p-values and any subsequent tests do not account for the model. (Source: authors' calculation based on data OECD - [Electronic resource]: Access mode: <https://www.oecd.org/en/data.html> (application date 10/22/2024).

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
DAGE	-491.043302379309	194.8109509399503	-2.520614472698053	0.01253770100069482
DINVEST	15.8302092122366	10.2054114790775	1.551158348165648	0.122527822874596
DTECH	-516.054340533353	846.4267609546264	-0.609685757042147	0.54279841548426
DEDU	616.8518636066003	1448.245606948505	0.4259304227452999	0.6706406493437297
DEMRATE	447.5954343491315	60.61961866156101	7.383672880689902	4.701921314796831e-12
DHEALTH	-94.5245391178135	272.7599928756841	-0.3465484000100228	0.7293141042168917
DINFL	-1.25358589667971	13.31094101497027	-0.0941771055306946	0.9250677121244838
DSOC	-48.1098097595067	110.7508736881402	-0.4343966612396904	0.6644933385600509
Short Run Equation				
COINTEQ01	-1.16256769752137	0.2700263533083909	-4.305386060573226	2.667967092079762e-05
D(DAGE)	-1507.11445621710	1394.523335786347	-1.080738068371777	0.0011835151632498
D(DINVEST)	1.041346410561458	2.687875271024785	0.3874236359801144	0.6988762484503248
D(DTECH)	272.3341393506657	763.8493820852629	0.3565285850035119	0.7218403595230638
D(DEDU)	-8372.40263498716	2931.667062792899	-2.855850427644079	0.004769647114067134
D(DEMRATE)	-13.5269995978774	161.8794462606336	-0.0835621810572440	0.9334925105865222
D(DHEALTH)	-1389.53794894033	641.4147566942491	-2.166364173006859	0.03152856026733791
D(DINFL)	281.0146549580731	153.7153377638984	1.828149741242491	0.06909529225319633
D(DSOC)	724.3260627011587	297.4499114605085	2.435119442949725	0.01581031703328672
C	1229.794811370032	407.3201054897092	3.019234245487306	0.002882260555546326
Mean dependent var	-315.833269736945	S.D. dependent var		3655.519257443022
S.E. of regression	1656.43247518590	Akaike info criterion		17.07064381541719
Sum squared resid	521316023.521594	Schwarz criterion		18.00708277578413
Log likelihood	-2134.11305218881	Hannan-Quinn criter.		17.44719041234452

The results obtained for the countries of the Mediterranean model indicate significant differences in comparison with other models of social policy, which are related to both population ageing and imperfections in their economic and social systems:

1. Population ageing in the Mediterranean model has a significant negative impact on economic growth (coefficient = -491.04, p-value = 0.0125), which contrasts with the general trend in the OECD, where the coefficient is positive. This more pronounced negative effect may be due to the lack of efficiency of family and state social systems in supporting the elderly, which creates additional pressure on the economy.
2. Investments did not demonstrate a significant impact on economic growth (p-value = 0.1225) compared to other social policy models. Although a positive coefficient indicates their potential, weak integration of investment mechanisms and uneven development in the region may limit their effectiveness.
3. The impact of technology on economic growth is insignificant (coefficient = -516.05, p-value = 0.5428), which may be a sign of a lag in innovation. This is typical of the Mediterranean model, where investments in the technology sector are traditionally lower than in Anglo-Saxon and Continental countries.
4. The positive impact of education spending (coefficient = 616.85, p-value = 0.6706) indicates the potential benefits of investment in the long run. Nevertheless, the lack of statistical significance suggests a limited immediate return on educational spending.
5. The employment rate shows a significant positive impact (coefficient = 447.60, p-value < 0.0001). This emphasizes the importance of stable employment in Mediterranean countries, where employment is closely linked to social security.
6. Inflation and social expenditures do not have a significant impact on long-term growth, which is explained by the stability of inflationary processes in the Mediterranean region and the weak targeting of social expenditures.

There are also differences in the short run:

1. Population ageing has a significant negative impact (coefficient = -1507.11, p-value = 0.0012). This indicates that rising social and healthcare costs have an immediate economic impact. At the same time, the coefficient of negative impact is somewhat lower than in the Scandinavian model countries, which is explained by the lower size of social benefits and health care spending.
2. The negative impact of education expenditures (coefficient = -8372.40, p-value = 0.0048) indicates significant initial costs that do not provide immediate economic benefits due to shortcomings in financing educational programs or lack of rapid economic returns.
3. Spending on health care has a negative short-run impact (coefficient = -1389.54, p-value = 0.0315), which confirms the significant financial burden of health care costs for public finances.
4. Unlike the general trend, social expenditures have a positive and significant short-run impact (coefficient = 724.33, p-value = 0.0158). This indicates the importance of social support for stabilizing the economy in times of crisis, which is a characteristic feature of Mediterranean countries, where family values and state support for vulnerable groups are traditionally preserved.

Overall, the results of the Mediterranean model study confirm that population ageing creates significant economic pressure in both the short and long run. The significant impact of employment emphasizes the importance of a stable labour market. The insignificant effect of investment and technology may indicate structural constraints on economic development in this region, while the positive short-run effect of social spending shows the importance of government support in stabilizing the economy.

The results of the calculations for countries with the Central and Eastern European social model, presented in Table 7, reveal the specifics of the economic impact of demographic change and social spending on economic growth.

Table 7. Results of the assessment of the impact of selected factors on economic growth in the countries of the Central and Eastern European model. Note: p-values and any subsequent tests do not account for the model. (Source: authors' calculation based on data OECD - [Electronic resource]: Access mode: <https://www.oecd.org/en/data.html> (application date 10/22/2024).

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Long Run Equation				
DAGE	1417.075755526172	303.1649660148095	4.674272803200315	5.511163102590294e-06
DINVEST	-73.53006225987466	43.89376065486723	-1.675182558132466	0.09550951176829226
DTECH	12192.78114213294	2721.219218147218	4.480631718614194	1.270022477821661e-05
DEDU	-4875.240106010586	4727.736084461635	-1.031199715659625	0.3037310374306933
DEMRATE	212.233589668938	231.6779488652458	0.916071601585105	0.3607666557414927
DHEALTH	724.8959896578594	721.2741705337973	1.005021418029404	0.3161384336587799
DINFL	-425.2837017908375	65.36043201517771	-6.506745574938672	6.387305258442115e-10
DSOC	-760.7972934671566	396.1670037097774	-1.920395404824019	0.05627448429929387
Short Run Equation				
COINTEQ01	-0.442586842499506	0.1874072833984095	-2.361630959446812	0.0191856510995825
D(DAGE)	-1243.753178480599	644.7486758767523	-1.929051155924126	0.05518372083983822
D(DINVEST)	29.12184578558227	15.01445527835617	1.939587234147774	0.05388002533696074
D(DTECH)	-3991.716420005304	2789.315527693998	-1.431073817348073	0.1540179385888012
D(DEDU)	1969.397478328667	2777.962810565381	0.708935868701513	0.4792153349312407
D(DEMRATE)	181.0112690518136	238.7432026146015	0.758183969509769	0.4492609081884039
D(DHEALTH)	1006.372768079069	872.0057814347131	1.154089559387188	0.2498831919603187
D(DINFL)	301.5071394981202	78.98150440488006	3.817439814168579	0.0001813088763697874
D(DSOC)	185.9785597186063	240.5328334146174	0.773194067015485	0.4403486043466429
C	-56.65319008417047	70.96421785612699	-0.798334594471671	0.4256525370204643
Mean dependent var	-286.6263588422559	S.D. dependent var		3552.404720984736
S.E. of regression	1505.914988517773	Akaike info criterion		16.68588488348946
Sum squared resid	439949310.8126418	Schwarz criterion		18.37564989449747
Log likelihood	-2734.658084843676	Hannan-Quinn criter.		17.35875524973423

Compared to other OECD country groups, these results emphasize the importance of investment, technology, and the impact of inflation.

In the long run, this group of countries, whose economic and social systems are still undergoing reform, has the following results:

1. Population ageing has a significant positive effect on economic growth in the long run (coefficient = 1417.08, p-value = 5.5e-06). This result, which is different from the Anglo-Saxon model and similar to the continental model, suggests that central and eastern European countries have adapted their pension systems to reduce economic pressure in the face of ageing.
2. The insignificant negative effect of investment (coefficient = -73.53, p-value = 0.0955) may reflect inefficient use of investment or structural problems, indicating dependence on external capital or insufficient domestic investment.
3. The significant positive effect of technological investment (coefficient = 12192.78, p-value = 1.27e-05) emphasizes the importance of innovation for the economic development of the countries in this group, which actively invest in technology to maintain productivity.
4. The insignificant negative impact of social protection expenditures (coefficient = -760.80, p-value = 0.0563) may indicate the high cost of supporting social programs, especially given the specific structure of the population.

In the short run:

1. Population ageing has a negative impact on economic growth (coefficient = -1243.75, p-value = 0.0552), which may be a result of additional healthcare and social security costs.

2. Investment has a positive (coefficient = 29.12, p-value = 0.0539), although insignificant, impact. This emphasizes the importance of investment in maintaining economic activity.
3. The positive short-run effect of inflation (coefficient = 301.51, p-value = 0.0002) may indicate a stimulating effect on consumption and investment but raises questions about long-term stability.

The Central and Eastern European model shows a positive impact of technology and population ageing in the long run, reflecting the gradual reform of social support systems. The negative short-run effect of social protection expenditures and population ageing underscores the need to optimize social programs to achieve sustainable economic growth.

DISCUSSION

The results of our study confirm that population ageing mostly has a negative impact on economic growth, especially in the short run, due to a decline in the share of the working-age population and increased social security and health care costs. These findings are in line with previous studies, such as Aiyar et al. (2016), which demonstrate the growth of social spending and budgetary pressure in the context of an ageing population.

However, our results emphasize the significant differences in the impact of population ageing depending on the social policy models. In the Scandinavian model, which provides a high level of social protection through substantial tax revenues, the negative short-run impact of ageing is significantly reduced by comprehensive support programs. This finding is in line with Esping-Andersen (1990), who emphasizes the effectiveness of universal social protection systems in confronting demographic challenges. At the same time, high tax expenditures can put pressure on economic activity in the long run, as noted by Ferrera (1996).

In contrast, in the Mediterranean model, which depends on family support and has a low level of government intervention, population ageing creates a significant negative impact in the long run. Our results confirm Ayala's (1994) findings that this model is vulnerable to demographic change, especially in the face of economic instability and regional inequality.

The Anglo-Saxon model, which is based on market mechanisms and private pension systems, demonstrates the highest flexibility in long-term adaptation to population ageing. This result confirms the study by Barr and Diamond (2008), who emphasize the importance of private financing for economic sustainability.

The Continental model, based on a social insurance system, shows an average level of efficiency. While it provides a high level of social protection for the working population, the heavy reliance on contributions from the working population makes it less sustainable in times of growing demographic pressure. These findings are in line with Kangas and Palme (2000).

Regarding higher education expenditures, our results show a negative long-run effect, which may be due to insufficient integration of graduates into the labour market or to the specifics of individual countries' education systems. This partly contradicts Bloom et al. (2011), who emphasize the long-term importance of human capital investment for economic growth.

Our study has several limitations. First, we focus only on OECD countries, which may not reflect the specifics of developing countries. Second, the choice of econometric models (ARDL/PMG) has sensitivity to the specification of variables, which may affect the results. Third, the impact of migration flows and institutional reforms, which can significantly change the impact of population ageing, are not taken into account.

CONCLUSIONS

The analysis of the results for OECD countries and different social models reveals significant differences in the impact of population ageing on economic growth. In general, population ageing has mixed effects, depending on the type of social policy: in the short run, there is often a negative impact, while in the long run, some models show neutral or positive results. These differences are due to the level of state support, the participation of non-state social insurance, and the development of private pension systems.

The Anglo-Saxon model demonstrates a moderate but significant negative impact of population ageing on economic growth in the short run (coefficient = -1337.15), which is lower than the average value for OECD countries (-1570.08). This indicates a certain adaptability of the model due to the involvement of the private sector in social security. At the same time, limited state support puts pressure on the elderly population, shifting the responsibility for social guarantees to

private savings and pension programs. This approach helps to reduce the short-run negative effects of ageing but can threaten the financial stability of older people in the absence of sufficient private resources.

The Scandinavian model demonstrates the most significant negative short-run impact of population ageing (coefficient = -2906.25), which is significantly higher than the average value for OECD countries. Despite the high level of state support and broad social protection, the lack of a developed non-state social insurance system means that the main burden of social expenditures falls on the state budget, which increases the negative effect in the short run. However, in the long run, the model ensures stability through significant public investment in healthcare and social security, which partially offsets the impact of ageing on the economy.

The Continental model based on public social insurance systems shows a relatively smaller negative short-run impact of population ageing on economic growth (coefficient = -722.18). This indicates the stability of the model, as social security is mainly financed through employment-related insurance contributions. However, the limited participation of non-state social insurance may become a challenge in the long run, when the declining share of the working-age population will increase the burden on labour contributions and social funds.

The Mediterranean model is characterized by a significant negative impact of population ageing in both the short and long run. This is due to the low level of state support, dependence on family care, and regional fragmentation of social programs, which limits its effectiveness in addressing the challenges of ageing. The absence of a developed non-state social insurance system further complicates the situation, as the older population does not receive sufficient support from the private sector, which increases the economic burden on public finances in the long run.

The Central and Eastern European model shows mixed results, with a significant negative impact of population ageing in the short run. Limited economic resources, a weak social protection system, and low levels of pension savings put additional pressure on the economy. At the same time, government reforms and investments in technology and productivity will partially offset these negative effects in the long run.

The results of the study confirm that social models have a significant impact on the nature and strength of the impact of population ageing on economic growth. Models with a high level of government support, such as the Scandinavian model, show the highest negative short-run impact, which is explained by the lack of a developed private social insurance system to reduce the burden on the state budget. In contrast, the Anglo-Saxon and the Continental models, due to greater private sector participation and non-governmental insurance, are better adapted to demographic changes, which helps to reduce the short-run negative effects of population ageing.

Based on the assessment of the strengths and weaknesses of each model, it is possible to offer general recommendations for all countries reforming their social security systems:

1. To form a hybrid model of social protection that combines elements of private and public insurance, which may be optimal for reducing the negative impact of population ageing on the economy.
2. To provide financial support for the development of private pension insurance to increase the economic activity of older people and create additional sources of income.
3. Expand investments in new technologies and innovations in the healthcare sector to optimize the costs of healthcare and care for the elderly.
4. Develop and expand supportive training and employment programs for older people to increase their economic activity and reduce pressure on social systems.

In the future, the possible consequences of changes in social policy, including the implementation of elements of different models, for long-term economic growth in the context of population ageing should be studied. It is advisable to further analyze the impact of funded pension systems on reducing the budgetary burden and maintaining the economic activity of the elderly population in different social models. It is important to identify measures and practices that promote the economic activity of older workers, including through the adaptation of working conditions to maintain their productivity. It is also important to study the optimal levels of investment in healthcare services for older people that contribute to economic growth and ensure the sustainability of health care systems.

These debatable issues and areas for further research are crucial for the development of adaptive and sustainable social protection systems that can support economic growth in the face of an ageing population.

ADDITIONAL INFORMATION

AUTHOR CONTRIBUTIONS

All authors have contributed equally.

FUNDING

The Authors received no funding for this research.

CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

REFERENCES

1. Acemoglu, D., & Restrepo, P. (2018). Demographics and Automation. *American Economic Review*, 108(6), 1483-1527. <https://economics.mit.edu/sites/default/files/inline-files/Demographics%20and%20Automation.pdf>
2. Aiginger, K., & Leoni, T. (2009). *Typologies of Social Models in Europe*. Vienna: Institute of Economic Research WIFO. https://www.researchgate.net/publication/242078229_Typologies_of_Social_Models_in_Europe
3. Aigner-Walder, B., & Döring, T. (2012). The Effects of Population Ageing on Private Consumption: A Simulation for Austria Based on Household Data up to 2050. *Eurasian Economic Review*, 2(1), 63-80. <https://link.springer.com/article/10.14208/BF03353833>
4. Aiyar, S., Ebeke, C., & Shao, X. (2016). The Impact of Workforce Ageing on European Productivity; *IMF Working Paper No. 16/238*. IMF: Washington, DC, USA. <https://www.imf.org/external/pubs/ft/wp/2016/wp16238.pdf>
5. Ayala, L. (1994). Social Needs, Inequality and the Welfare State in Spain: Trends and Prospects. *Journal of European Social Policy*, 4(3), 159-179. <https://doi.org/10.1177/095892879400400301>
6. Barr, N., & Diamond, P. (2008). *Reforming Pensions: Principles and Policy Choices*. Oxford University Press. https://www.researchgate.net/publication/227466905_Reforming_Pensions_Principles_and_Policy_Choices
7. Blake, D. (2006). *Pension economics*. Wiley. <https://www.wiley.com/en-dk/Pension+Economics-p-9780470058442>
8. Bloom, D. E., & Zucker, L. M. (2023). Ageing is the Real Population Bomb. *Finance & Development*, 58-61. <https://www.imf.org/en/Publications/fandd/issues/Series/Analytical-Series/ageing-is-the-real-population-bomb-bloom-zucker>
9. Bloom, D. E., Boersch-Supan, A., McGee, P., & Seike, A. (2011). Population Ageing: Facts, Challenges, and Responses. *PGDA Working Papers No. 71*. Program on the Global Demography of Ageing. https://www.hsph.harvard.edu/wp-content/uploads/sites/1288/2013/10/PGDA_WP_71.pdf
10. Bloom, D. E., Canning, D., & Fink, G. (2010). Implications of Population Ageing for Economic Growth. *Oxford Review of Economic Policy*, 26(4), 583-612. <https://doi.org/10.1093/oxrep/grq038>
11. Börsch-Supan, A., & Weiss, M. (2016). Productivity and Age: Evidence from Work Teams at the Assembly Line. *Journal of Economic Ageing*, 19, 30-42. <https://doi.org/10.1016/j.jeoa.2015.12.001>
12. Börsch-Supan, A. H., & Coile, C. (2018). *Social security programs and retirement around the world*. University of Chicago. https://www.nber.org/system/files/working_papers/w25280/w25280.pdf
13. Breyer, F., Costa-Font, J., & Felder, S. (2010). Ageing, Health, and Health Care. *Oxford Review of Economic Policy*, 26(4), 674-690. <https://doi.org/10.1093/oxrep/grq032>
14. Burtless, G. T. (2013). The Impact of Population Ageing and Delayed Retirement on Workforce Productivity. *Center for Retirement Research at Boston College Working Paper No. 2013-11*. https://crr.bc.edu/wp-content/uploads/2013/05/wp_2013-111.pdf
15. Cristea, M., Noja, G. G., Stefea, P., & Sala, A. L. (2020). The Impact of Population Ageing and Public Health Support on EU Labor Markets. *International Journal of Environmental Research and Public Health*, 17, 1439. <https://doi.org/10.3390/ijerph17041439>
16. Çiftçi, H., Bilgin, C., & Bilgin, H. K. (2023). Effects of Demographic Change on Economic Growth: A Panel ARDL Approach for Selected OECD Countries. *Prague Economic Papers*, 32(6), 589-607. https://pep.vse.cz/artkey/pep-202306-0001_effects-of-demographic-change-on-economic-growth-a-panel-ardl-approach-for-selected-oecd-countries.php
17. Davis, E. P., & Hu, Y. W. (2008). Does funding of pensions stimulate economic growth? *Journal of Pension Economics & Finance*, 7(2), 221-249. <https://www.cambridge.org/core/journals/journal-of-pension-economics-and-finance/article/abs/does-funding->

- of-pensions-stimulate-economic-growth/7A8E75DEFB5E8B8D07271713A2F62C02
18. Elmeskov, J. (2004). Ageing, Public Budgets, and the Need for Policy Reform. *Review of International Economics*, 12(2), 233-242. <https://doi.org/10.1111/j.1467-9396.2004.00445.x>
 19. Esping-Andersen, G. (1990). *The Three Worlds of Welfare Capitalism*. Princeton University Press. <https://lanekenworthy.net/wp-content/uploads/2017/03/reading-espingandersen1990pp9to78.pdf>
 20. Esping-Andersen, G., & Myles, J. (2007). The Welfare State and Redistribution. https://www.researchgate.net/publication/255583959_The_Welfare_State_and_Redistribution
 21. Ferrera, M. (1996). The "Southern Model" of Welfare in Social Europe. *Journal of European Social Policy*, 6(1), 17-37. <https://doi.org/10.1177/095892879600600102>
 22. Fernández, J.-L., & Forder, J. (2010). Equity, efficiency, and financial risk of alternative arrangements for funding long-term care systems in an ageing society. *Oxford Review of Economic Policy*, 26(4), 713-733. <https://doi.org/10.1093/oxrep/grq036>
 23. Harper, S. (2016). *How Population Change Will Transform Our World*. Oxford University Press. <https://global.oup.com/academic/product/how-population-change-will-transform-our-world-9780198783992?cc=ua&lang=en&>
 24. Gruber, J., & Wise, D. A. (1999). *Social Security and Retirement around the World*. University of Chicago Press. <https://press.uchicago.edu/ucp/books/book/chicago/S/bo3632903.html>
 25. Kangas, O., & Palme, J. (2000). Does Social Policy Matter? Poverty Cycles in OECD Countries. *International Journal of Health Services*, 30(2), 335-352. <https://doi.org/10.2190/NCWB-35G3-NE2T-8VQR>
 26. Kostadinova, P. (2014). Social Policy Arrangements Across Europe: Continuing Disparities between Social Models in the EU? *L'Europe en formation* 372 (Été 2014 - Summer 2014), 33-50. <https://ssrn.com/abstract=2690427>
 27. Lisenkova, K., Mérette, M., & Wright, R. (2013). Population Ageing and the Labour Market: Modelling Size and Age-Specific Effects. *Economic Modelling*, 35, 981-989. <https://doi.org/10.1016/j.econmod.2013.09.007>
 28. Lucas, R. E., Jr. (1988). On the Mechanics of Economic Development. *Journal of Monetary Economics*, 22(1), 3-42. [https://doi.org/10.1016/0304-3932\(88\)90168-7](https://doi.org/10.1016/0304-3932(88)90168-7)
 29. Mankiw, N. G., Romer, D., & Weil, D. N. (1992). A Contribution to the Empirics of Economic Growth. *Quarterly Journal of Economics*, 107(3), 407-437. <http://piketty.pse.ens.fr/files/MankiwEtal92.pdf>
 30. Meier, V., & Werding, M. (2010). Ageing and the Welfare State: Securing Sustainability. *Oxford Review of Economic Policy*, 26(4), 655-673. <https://doi.org/10.1093/oxrep/grq031>
 31. Nagarajan, N. R., Teixeira, A. A. C., & Silva, S. T. (2016). The Impact of an Ageing Population on Economic Growth: An Exploratory Review of the Main Mechanisms. *Análise Social*, 51(216), 4-35. <https://doi.org/10.31447/AS00032573.2016218.01>
 32. OECD (2015). Old-age Dependency Ratio. In *Pensions at a Glance 2015: OECD and G20 Indicators*. Paris: OECD Publishing. https://doi.org/10.1787/pension_glance-2015-en
 33. OECD (2024). Data. Trusted statistics supporting evidence-based policy. <https://www.oecd.org/en/data.html>
 34. Rhodes, M. (1996). Southern European Welfare States: Identity, Problems and Prospects for Reform. *South European Society and Politics*, 1(3), 1-22. <https://doi.org/10.1080/13608749608539480>
 35. Romer, P. M. (1986). Increasing Returns and Long-Run Growth. *The Journal of Political Economy*, 94(5), 1002-1037. <https://doi.org/10.1086/261420>
 36. Santos, M., & Simões, M. (2021). Globalisation, Welfare Models and Social Expenditure in OECD Countries. *Open Economic Review*, 32, 1063-1088. <https://link.springer.com/article/10.1007/s11079-021-09646-2>
 37. Sharpe, A. (2011). Is Ageing a Drag on Productivity Growth? A Review Article on Ageing, Health, and Productivity: The Economics of Increased Life Expectancy. *International Productivity Monitor*, 21, 82-94. <http://csls.ca/ipm/21/IPM-21-Sharpe.pdf>
 38. Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics*, 70(1), 65-94. <https://doi.org/10.2307/1884513>
 39. Stoodley, I., & Conroy, S. (2024). An Ageing Population: The Benefits and Challenges. *Medicine*. [https://www.medicinejournal.co.uk/article/S1357-3039\(24\)00213-5/abstract](https://www.medicinejournal.co.uk/article/S1357-3039(24)00213-5/abstract)
 40. Swan, T. W. (1956). Economic Growth and Capital Accumulation. *Economic Record*, 32, 334-361. <https://doi.org/10.1111/j.1475-4932.1956.tb00434.x>
 41. Trufen, A. O. (2015). Formation of Social Policy Models from the Perspective of National Characteristics. *Scientific Bulletin of the International Humanitarian University*, 12, 147-150. <http://vestnik-econom.mgu.od.ua/journal/2015/12-2015/34.pdf>
 42. Tosun, M. S. (2003). Population Ageing and Economic Growth: Political Economy and Open Economy Effects. *Economics Letters*, 81(3), 291-296. [https://doi.org/10.1016/S0165-1765\(03\)00195-2](https://doi.org/10.1016/S0165-1765(03)00195-2)
 43. United Nations, Department of Economic and Social Affairs. (2015). *World Population Ageing 2015 (ST/ESA/SER.A/390)*. https://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf
 44. United Nations, Department of Economic and Social Affairs. (2023). *World Social Report 2023: Leaving No One Behind in an Ageing World*. <https://www.un-ilibrary.org/content/books/9789210019682#chapters>

45. Vo, D. (2019). Ageing Population and Economic Growth in Developing Countries: A Quantile Regression Approach.

Emerging Markets Finance and Trade. <https://mpra.ub.uni-muenchen.de/103279/>

Мальований М., Непочатенко З., Осіпова А., Новак І., Прокопчук О.

ВПЛИВ СТАРІННЯ НАСЕЛЕННЯ НА ЕКОНОМІЧНЕ ЗРОСТАННЯ: РОЛЬ МОДЕЛЕЙ СОЦІАЛЬНОЇ ПОЛІТИКИ В КРАЇНАХ ОЕСР

У статті досліджено вплив старіння населення на економічне зростання в країнах ОЕСР з урахуванням специфіки різних моделей соціальної політики. Основною метою роботи є виявлення особливостей економічного впливу старіння в межах кожної моделі (скандинавської, англосаксонської, континентальної, середземноморської та центрально-східноєвропейської) й оцінка їхньої здатності адаптуватися до демографічних змін. Аналіз базується на панельних моделях ARDL та PMG, що дозволяє врахувати коротко- й довгостроковий вплив старіння на економічне зростання. Результати показують значні відмінності у впливі старіння на економіку залежно від моделі соціальної політики: негативний короткостроковий ефект найбільш очевидний у скандинавській моделі, водночас у середземноморській моделі негативний вплив зберігається в довгостроковій перспективі. Також країни з розвинутою приватною та корпоративною пенсійними системами, як в англосаксонській чи континентальній моделях, можуть краще адаптуватися до демографічних викликів, зменшивши навантаження на державні фінанси. Результати дослідження допомагають визначити найкращі практики з різних соціальних моделей для зменшення негативного впливу старіння на економіку та забезпечення належного рівня соціального захисту.

Ключові слова: старіння населення, економічне зростання, моделі соціальної політики, країни ОЕСР, пенсійна реформа, економічний аналіз, економічне оцінювання

JEL Класифікація: J11, H55, I38