https://doi.org/10.26565/2786-4995-2026-2-21
УДК 658+331.5

Shum Alina
Doctor of Economic Sciences, Professor
Professor of Department of Accounting and Finance
National Technical University
"Kharkiv Polytechnic Institute", Kharkiv, Ukraine
2, Kyrpychova str., Kharkiv, 61002, Ukraine
e-mail: alina.shum@khpi.edu.ua
ORCID ID: 0000-0003-2948-6238

Demographic challenges of population ageing: transformation of internal control, internal audit, and management systems at enterprises

Abstract. The article explores the demographic challenges of population ageing and their impact on the transformation of internal control, internal audit, risk management, and corporate governance systems. Particular attention is paid to changes in the structure of human resources, the growing share of older age groups, and the need to adapt management systems to new socio-economic conditions.

Problem statement. Population ageing in economically developed countries, particularly in the European Union, leads to a reduction in the working-age population, increased pressure on public finances, and a transformation of the labor market. Under these conditions, traditional systems of management, internal control, and audit require modernization to ensure the effective functioning of business entities.

Unresolved aspects of the problem. Despite a significant number of studies in the field of demographic ageing and its macroeconomic consequences, the impact of population ageing on the systems of internal control, internal audit, risk management, corporate governance, and public administration remains insufficiently explored.

Purpose of the article. The purpose of the study is to analyze the impact of demographic ageing trends on internal control, internal audit, and management systems, as well as to justify the necessity of their adaptation to modern demographic challenges.

Presentation of the main material. The study utilizes general scientific and specialized methods of cognition: analysis and synthesis, as well as statistical, comparative, and systematic approaches. The information base consists of statistical data, analytical publications, and scientific papers on the issues of demographic ageing, corporate governance, and internal audit. The article proves that demographic shifts necessitate the digitalization of management and control processes, the development of adaptive management models, and the integration of older employees into modern economic processes.

Conclusions. It is substantiated that the adaptation of internal control, internal audit, and management systems to demographic challenges is a prerequisite for ensuring sustainable economic development. The implementation of digital technologies, professional training programs, and mechanisms for engaging individuals aged 60+ in economic activity will contribute to increased labor productivity, stabilized public finances, and the creation of additional competitive advantages for business entities.

Keywords: *demographic challenges; population ageing; internal control; internal audit; risk management; corporate governance; digitalization; human resources; management systems.*

Formulas: –; fig.: 4; tabl.: –; bibl.: 9.

JEL Classification: J11, M42, G32

For citation: Shum Alina. Demographic challenges of population ageing: transformation of internal control, internal audit, and management systems at enterprises. Financial and Credit Systems: Prospects for Development. №2(21) 2026. P. 269-281. https://doi.org/10.26565/2786-4995-2026-2-21

Introduction. One of the significant challenges at the current stage of human development, which is expected to intensify in the medium and long term, is population ageing, primarily in economically developed countries such as Japan, South Korea, the USA, Canada, European Union member states, and others. This trend encompasses multiple interconnected aspects—social, political, psychological, and others. However, from our perspective, the economic component of this phenomenon is one of the primary factors that largely determines all others. In an economic sense, population ageing leads to changes in the quality and structure of productive forces, specifically the labor factor of production and human resources, significantly impacting production relations. This, in turn, influences both the national economies and other sectors (social, public administration, etc.) of the countries affected by this trend, as well as the global economy as a whole. This demographic challenge affects all levels of management and the economy, from the macro-level to the micro-level, down to the level of households..

Simultaneously, due to various reasons, the requirements for the efficiency of the financial and economic activities of business entities are constantly increasing. This necessitates improving the efficiency of management activities and control as one of its core functions. There are growing demands for the information provided by systems of internal control, internal audit, and risk management, alongside systems of accounting, analysis of financial and economic activities, management, marketing, etc. Information must be timely, high-quality, and sufficient for making prompt and correct management decisions. At the same time, control must provide information on deviations from established management decisions to eliminate negative consequences and reinforce positive results.

All of this requires the development and refinement of the theory of management, internal control, and internal audit, as well as its integration with demographic and other challenges, to develop proposals and solutions aimed at enhancing the theory and practice of economic, financial, and other activities.

Literature review. The issues of demographic population ageing and its impact on economic systems, corporate governance, internal control, and internal audit have become increasingly relevant in global scientific and analytical literature in recent years. The growing share of older age groups, the shrinking working-age population, and the rising burden on social security systems create new challenges for both public finances and the operations of business entities. Consequently, recent scientific research increasingly focuses on the necessity of adapting management, control, and labor organization systems to the conditions of long-term demographic shifts.

One of the most comprehensive studies of demographic trends in European Union countries is the 2024 Ageing Report (2024), which provides projected assessments of population changes, labor resource structures, and government expenditures on pensions, healthcare, and long-term care through 2070. The study argues that population ageing will become one of the key factors in the transformation of European economies and public finances. The authors of the report emphasize that the rising old-age dependency ratio and the shrinking economically active population will intensify the need for structural reforms in the labor market, management systems, and social security mechanisms.

Statistical studies dedicated to the dynamics of population ageing are of great importance for analyzing structural demographic changes. In particular, the work of D. Clark (2025) examines the growth in the proportion of post-working-age individuals in Poland from 1950 to 2023. The provided statistical data confirm a stable upward trend in the weight of older age groups, a phenomenon characteristic not only of Poland but of most EU countries. The results of the study demonstrate the long-term nature of demographic changes and the necessity of adapting economic policies and management systems to new socio-economic conditions.

The problems of managing demographic risks and the ageing of labor resources are thoroughly investigated in the work of L. Jurek (2021). The author considers workforce ageing as one of the key demographic risks of the modern economy and emphasizes the need to form adaptive personnel policies, develop professional training programs, and reorient human resource management systems. Particular attention is paid to maintaining the labor productivity of older employees and integrating age-diverse teams within modern organizations.

Further development of this issue is traced in the research by D. Mežnar (2026), where societal ageing is viewed not only as a challenge but also as a potential opportunity for organizational restructuring and the modernization of management systems. The author highlights the necessity of transitioning to more flexible organizational models, actively implementing digital technologies, developing remote employment, and utilizing the experience of older employees as a vital intellectual resource for enterprises.

Analytical and statistical reports from international information platforms contribute significantly to the study of the economic activity of older age groups. For instance, a publication by Jamet and El-Atillah (2023) examines the trends of continued employment among individuals over the ages of 65–70 in European countries. The authors emphasize that shifting away from traditional retirement models is becoming a vital element of economic adaptation to population ageing. Key factors driving continued labor activity include financial necessity, improved health status among older populations, and the availability of flexible employment forms.

The research by Rudnicka (2025) complements this issue by analyzing the reasons for extending professional life beyond the official retirement age. Survey results demonstrate that a significant portion of older individuals is willing to remain economically active, provided that favorable working conditions, retraining opportunities, and flexible schedules are established.

Of particular interest is the experience of Japan as one of the world's most "ageing" economies. A statistical study by C. Textor (2026) analyzes the labor force participation rates across various age groups in Japan from 1973 to 2025. The data indicate a high level of economic activity among the elderly and confirm the possibility of effectively integrating older persons into the workforce through appropriate state and corporate policies.

The issues of corporate governance effectiveness and the role of control in ensuring enterprise performance are also explored in the work of Wong et al. (2020). The authors demonstrate that the quality of external audit and the effectiveness of corporate governance systems directly impact business performance, resilience, and the ability to adapt to external challenges. These findings are crucial for understanding the role of internal control and audit amidst demographic transformations.

Thus, the analysis of scientific sources indicates significant researcher attention to the problems of demographic ageing, labor market transformation, and systems of management and corporate control. At the same time, the comprehensive impact of population ageing specifically on the systems of internal control, internal audit, and risk management remains insufficiently explored. This necessitates further scientific research focused on adapting management, control, and audit systems to modern demographic challenges.

Purpose, objectives and research methods. The purpose of the study is to analyze the impact of demographic population ageing trends on the transformation of internal control, internal audit, risk management, and business entity management systems, as well as to justify the necessity of adapting modern management and control systems to new socio-economic conditions. The study aims to identify key risks and opportunities arising from the shrinking share of the working-age population, the increasing proportion of older age groups, and the mounting pressure on public finances and corporate governance systems.

To achieve this goal, the following main research objectives have been defined:

− to analyze modern demographic trends of population ageing in the European Union and other countries worldwide, as well as their socio-economic consequences;

− to investigate the impact of demographic shifts on management, internal control, and internal audit systems;

− to assess the role of management systems in ensuring the adaptation of enterprises and government structures to the ageing of labor resources;

− to identify potential directions for integrating older age groups into modern production and management processes;

− to substantiate the need for implementing adaptive strategies, digitalization, and vocational training and retraining programs for older employees.

The methodological basis of the study consists of general scientific and specialized methods of scientific cognition. The research utilized methods of analysis and synthesis to summarize theoretical approaches to population ageing and the functioning of internal control and management systems; the comparative analysis method to contrast demographic indicators, trends, and developmental features of EU countries and other nations; the statistical method to evaluate the dynamics of demographic changes, employment rates of older age groups, ageing-related expenditures, and economic development forecasts; and the systematic approach to study the interrelationship between demographic processes and the systems of management, internal control, and internal audit.

The information base of the study includes analytical materials and statistical data from international organizations and research centers, as well as scientific papers dedicated to demographic ageing, corporate governance, internal control, and audit. The processing and interpretation of the data were conducted using logical, analytical, and predictive approaches, which allowed for the formulation of substantiated conclusions regarding the necessity of adapting management systems to modern demographic challenges.

Research results. Based on well-substantiated and in-depth research [9], it can be assumed with a high degree of reliability and probability that the EU population will decrease in the coming years and in the medium term. This will lead to a reduction in the size of the working-age population. Simultaneously, the proportion of older age groups (60+) is increasing, accompanied by a noticeable decline in the proportion of younger age groups (ages 20 to 60).

The EU population is expected to grow from 449 million people in 2022 to a peak of 453 million in 2026, before falling to 432 million by 2070. This represents a 4% decrease compared to 2022. This general trend at the EU level encompasses heterogeneous developments at the national level [9].

This will lead to a significant increase in the old-age dependency ratio—the ratio of the elderly population to the working-age population. This ratio provides insight into the proportion of potential retirees relative to workers. Figure 1 illustrates this ratio using Poland as an example. To a certain extent, this is also true for other EU member states, as well as for the European Union as a whole.

The aforementioned trend will lead to a sharp reduction in the number of hours worked, making labor productivity growth the sole factor for GDP growth. Real GDP is projected to grow by an average of 1.3% in the EU during the 2022–2070 period [9].

The demographic trends noted above will result in a significant increase in the cost of ageing (pensions, healthcare, long-term care, and education costs) (Fig. 2).

According to the baseline scenario, the total cost of ageing (pensions, healthcare, long-term care, and education expenditures) in the EU is expected to rise. Ageing-related costs amounted to 24.4% of GDP in 2022, including 11.4% for pensions, 6.9% for healthcare, 4.4% for education, and 1.7% for long-term care. These costs are projected to increase by 1.2 percentage points, reaching 25.6% of GDP by 2070. The bulk of this increase is expected by the mid-point of the projection period in 2045, after which ageing costs are anticipated to continue rising slightly across the EU on average [9].

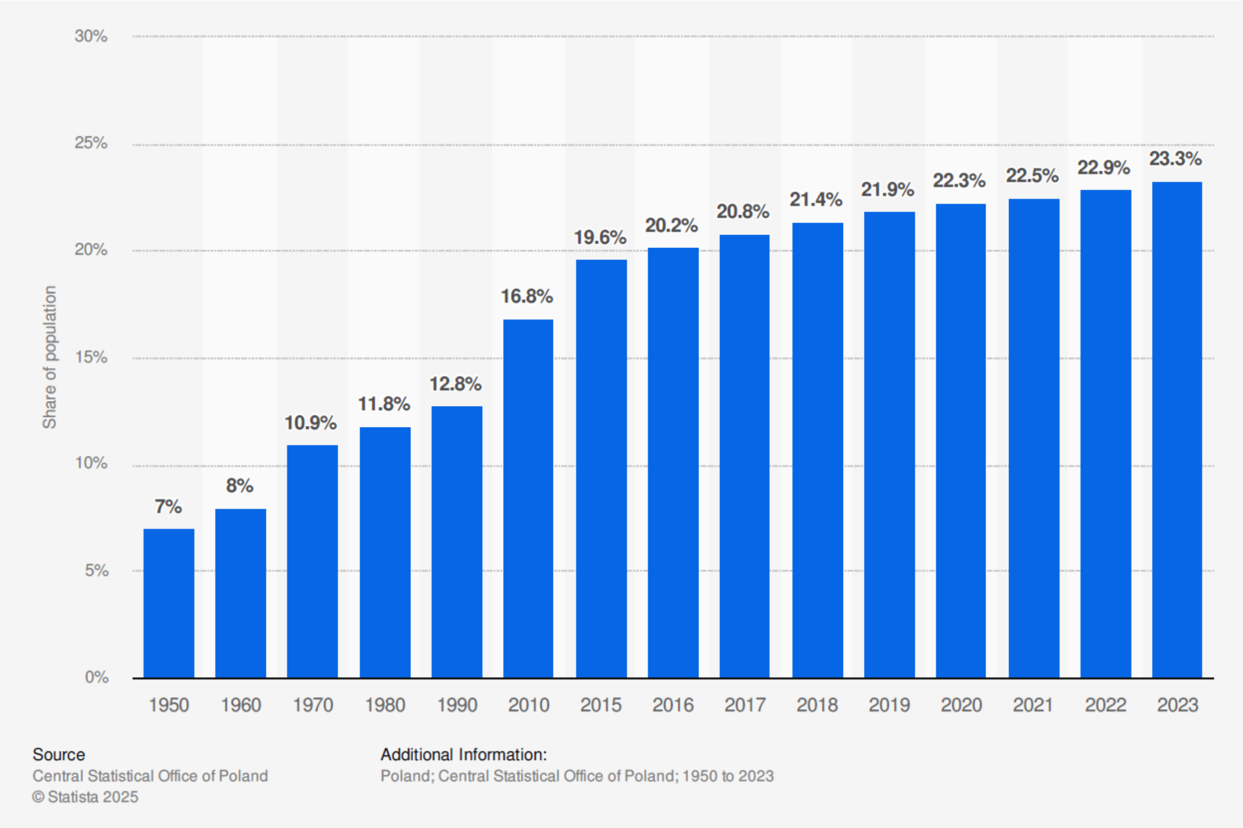

Figure 1. People in post-working age (60/65 and more) in total population in Poland from 1950 to 2023
Source: [1].

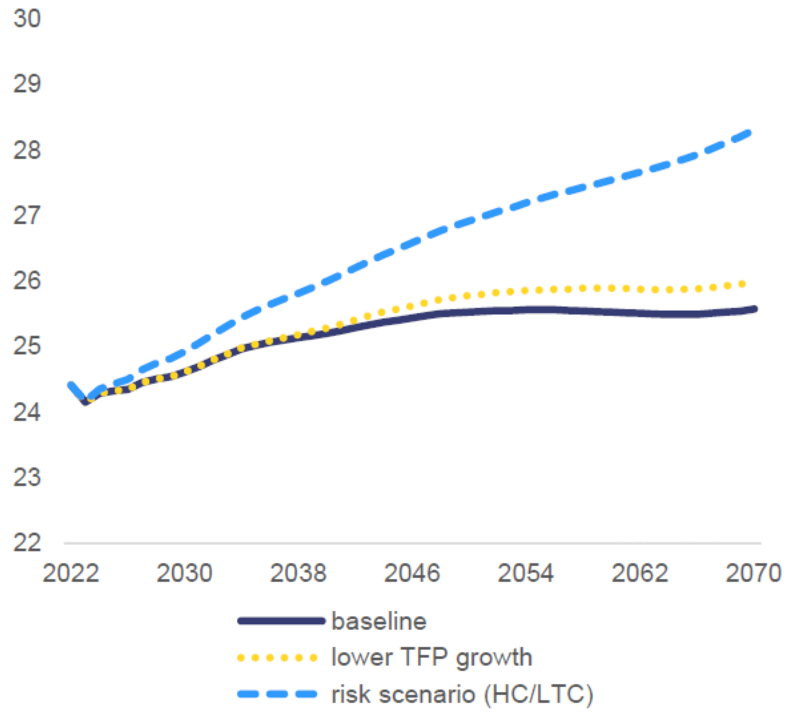

Figure 2. EU – Total age-related expenditure: baseline, lower TFP growth and risk scenario (% of GDP)
Source: [9]

The trends mentioned above will have a significant and negative impact on public finances. It is entirely possible that GDP growth will be insufficient to finance or compensate for the rising costs of ageing, particularly pension payments. In other words, the public finance systems of European Union member states will face severe pressure from demographic challenges (population ageing) alongside several other factors: increasing expenditures on the military-industrial complex and defense, and the rising cost of natural resources, especially hydrocarbon energy carriers, among others. All of this, in turn, will negatively affect the economies of EU countries, their economic development, and the EU and global economy as a whole.

The growth of pension payments across the EU is the primary driver of the increasing cost of ageing. Public pensions constitute a significant portion of government expenditures (Fig. 3, 4). It is essential to consider that this portion of public spending, despite differences in pension systems across various countries, is directly linked to the size of the elderly population and the number of retirees.

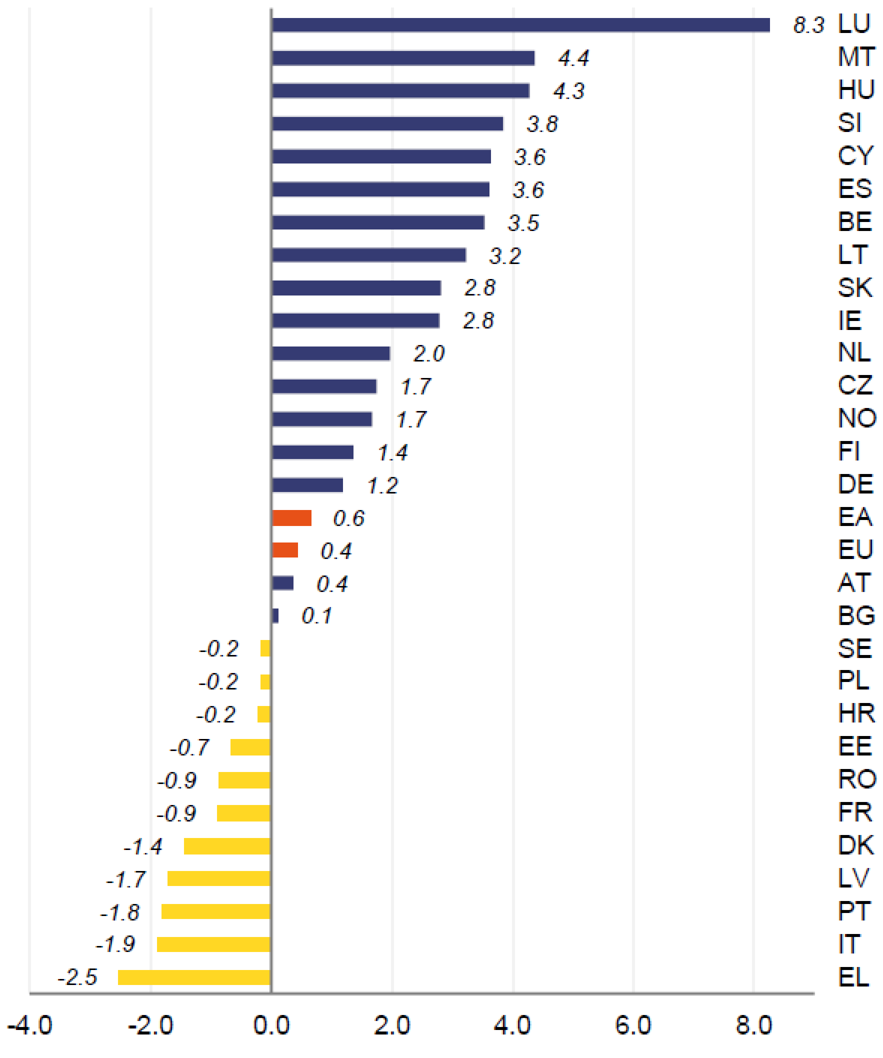

Figure 3. Change in gross public pension expenditure 2022-2070 (baseline, pps of GDP)
Source: [9]

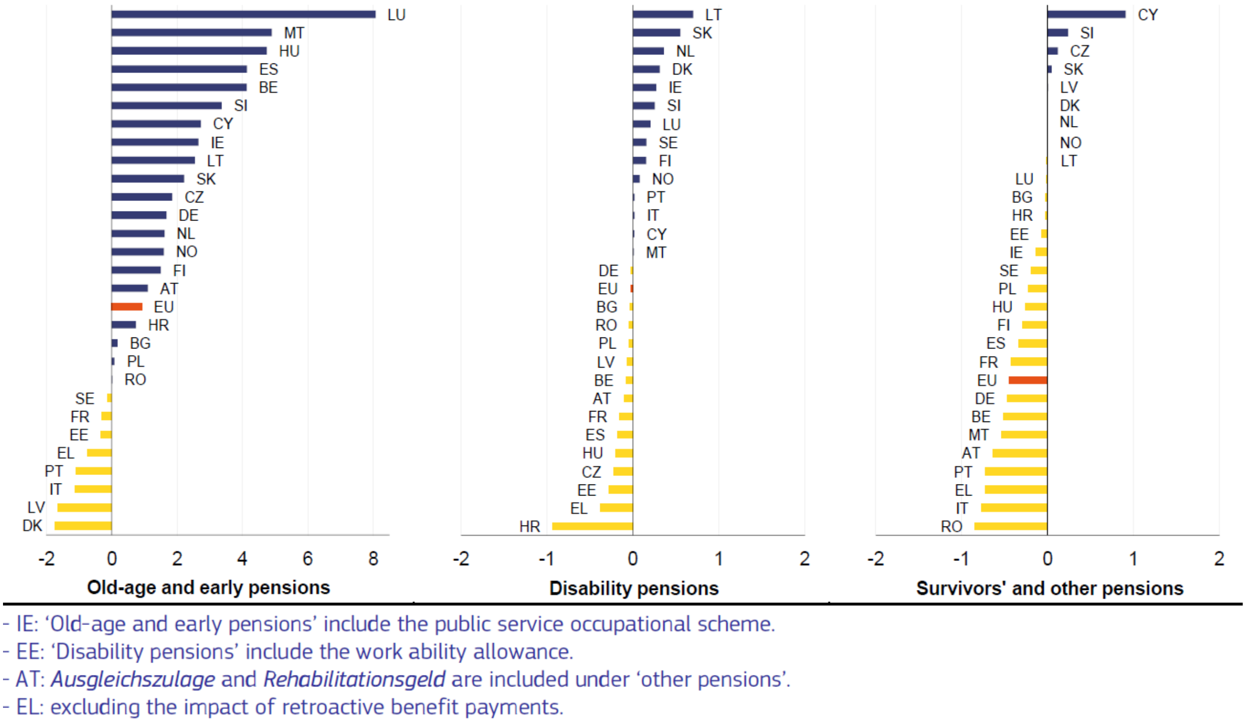

Figure 4. Change in gross public pension expenditure by main scheme, 2022-2070 (pps of GDP)
Source: [9]

Economic and political measures aimed at increasing employment enhance economic growth potential and expand both the pension contribution base and the tax base, which positively impacts the state of public finances and the balance of pension funds.

The deepening and increasing complexity of economic processes and financial activities across all levels of the economy and management require management systems—and their subsystems of internal control, risk management, and internal audit—to possess the capacity for rapid adaptation, strategic and tactical forecasting, and stable, effective functioning amidst diverse and growing risks and demographic challenges. At the same time, these management systems, with their corresponding subsystems of internal control, risk management, and internal audit, are becoming essential elements of the production potential of enterprises, business entities, organizations, and public administration bodies. They serve as strategic resources that ensure sustainable and efficient management and operation.

This is critically important and timely in light of demographic challenges (population ageing) and their associated consequences, as discussed above, as well as new social and economic imperatives. These imperatives are driven by the need to integrate older individuals (aged 60+) into active economic and social life, which, while presenting certain complexities, also holds the potential to deliver significant economic benefits. Engaging this demographic category (60+) in active economic and social life can increase the working-age population, which should positively impact GDP growth, domestic demand, the stabilization of public finances, and social policy. To a certain extent, this can become an accelerator and a multiplier for economic development.

Discussion. Demographic trends associated with population ageing, characterized by structural shifts toward an increased proportion of older age groups and a decreased proportion of younger groups within the total and working-age population, necessitate a fundamental rethinking of the paradigm of both corporate and public governance and control. This shift must move toward greater flexibility, economic expediency, efficiency, social orientation, innovation, and adaptation to objective reality. Under these conditions, internal control, risk management, internal audit, and the entire management system as a whole become not only a foundation for preventing threats to the financial, economic, and production spheres but also a cornerstone for implementing large-scale adaptation strategies. These strategies and programs in economic, educational, social, and other fields should be aimed at integrating the elderly and other economically inactive groups into production processes, enhancing their competencies, communication skills, digital literacy, and professional mobility, and involving them in active economic and social life.

From this perspective, internal control, risk management, and internal audit must serve as the basis for high-quality, timely, and effective management decisions at all levels of administration. Such decisions should aim not only to neutralize the negative demographic trends of population ageing but also to transform them into a potential for sustainable economic growth. This, in turn, will foster the dynamic and stable development of the economic, social, and other spheres through the efficient use of resources—primarily labor—the integration of interdisciplinary approaches, and the formation of adaptive organizational structures.

Economic structures of all forms of ownership, types of activity, and scales, as well as public institutions, are facing unprecedented demographic challenges related to population ageing. These issues take on particular significance in the context of control and management systems at all levels, as their functioning primarily and fundamentally depends on the human factor. This necessitates a radical revision of existing paradigms of corporate and public governance and control at every level.

The relevance of scientific research in the fields of internal control, internal audit, and management under the influence of modern demographic trends—essential for making informed management decisions in the economic, social, and public finance spheres—is strictly determined by several factors:

– demographic trends associated with population ageing are long-term and irreversible. By 2070, the share of the EU population aged 60+ is projected to exceed 30% [9];

– existing scientific research on these demographic trends currently focuses primarily on macroeconomic consequences, paying significantly less attention to their impact on internal control and internal audit systems, which are core components of management systems at all levels;

– the digital transformation of production and all other processes requires an immediate and correct revision of traditional approaches to organizing management activities within age-diverse (mixed-age) teams.

Currently, widely used control systems based on the Three Lines Model [7] demonstrate relatively high resilience and adaptability amidst demographic challenges, even as population ageing increasingly affects the personnel within management and control systems. In this context:

– The first line (management) may be particularly vulnerable to the shrinking share of young employees and the growing proportion of older staff. This must be considered when developing human resource policies and making staffing decisions, potentially necessitating a fundamental revision of HR strategies.

– The second line (internal control) can successfully and effectively mitigate risks by implementing digitalization into monitoring and control processes. This is especially viable as the share of remote employees from older age groups increases.

– The third line (internal audit) maintains the independence of its assessments but requires adaptation to account for the specific characteristics of older employees.

Data from the 2024 Ageing Report [9] confirm the negative outcomes of demographic ageing trends:

– the proportion of the population aged 65+ in EU countries will rise significantly, leading to a deterioration of the dependency ratio (the ratio of working-age population to the non-working population), which may reach 1:2 by 2070;

– the growth of social expenditures in EU countries (up to 30% of the budget) is not offset by GDP growth, which remains at approximately 0.5–1.5% per year.

At the same time, the study identified significant potential within older age groups:

– 26.5% of individuals over 65 in Japan continue to work, and their productivity in remote formats (as seen in Canada) exceeds that of younger workers by 15–20%;

– 63% of workers in Germany and 56% in Poland are willing to continue their professional activities, provided they have flexible schedules and opportunities for retraining [6].

The implementation of adaptation strategies in response to demographic challenges within business entities and public administration bodies can potentially yield a significant compensatory effect:

– digitalization of control, audit, and management activities reduces, and in many cases eliminates, the negative consequences of an ageing workforce within enterprises and organizations;

– training programs for employees aged 60+ (IT literacy, gadgets, foreign languages, etc.) increase their involvement in business processes and production activities, thereby raising labor productivity and, ultimately, GDP at the macro level, while improving other macroeconomic indicators;

– self-employment among individuals aged 65+ (currently at 38% [2]) creates new opportunities for outsourcing control, accounting, analytical, and several other functions.

Engaging older age groups (60+) in active economic life can produce significant positive socio-economic effects:

– reducing the burden on state budgets, which potentially stabilizes public finances and improves the health of the national financial system;

– stimulating the consumer market for goods and services by increasing the economically active portion of the population and boosting demand;

– increasing trust in public authorities and enhancing electoral activity, which in turn positively impacts the adoption and implementation of economic decisions by business entities and benefits economic development as a whole.

The integration and adaptation of internal control, risk management, internal audit, and overall management systems to demographic challenges (population ageing) through adaptive strategies, digital technologies, and the training or retraining of older personnel can potentially neutralize the negative outcomes of demographic trends. Furthermore, it creates new and substantial competitive advantages for business entities.

Further research directions are envisioned as follows:

– deepening the theory of control and management in light of demographic challenges (population ageing), and developing adaptive strategies for corporate management systems, internal control, internal audit, and risk management;

– developing adaptation programs for older age groups to facilitate their integration into the digitalization of all spheres of modern life.

To effectively mitigate the negative consequences of demographic challenges, such as population ageing, and to transform these trends into a factor for economic growth, it is necessary to develop comprehensive state programs aimed at engaging older age groups (65+) in active economic and social life. This requires providing training for these categories of the population, primarily in IT literacy (PC and gadget proficiency) and foreign languages, to expand their communication capabilities. These programs must interact closely with the business environment and account for its specific requirements. It is advisable to conduct training, retraining, and professional development with a focus on subsequent employment for participants. This serves a dual purpose: first, to reinforce acquired knowledge and skills through adaptation in real-world conditions; and second, to compensate for the costs associated with these programs. Ideally, placement in actual workplaces should be an integral, practical component of the training process, leading to permanent employment. Such initiatives can be incorporated into both government and corporate economic programs, serving as a core component of business development plans and economic projects within the "human resources" section.

From our perspective, given the depth and duration of demographic trends (population ageing), as well as the continuous nature of measures required to compensate for their negative consequences and create conditions for sustainable economic development, market mechanisms alone will be insufficient. State intervention is necessary in the form of government programs, along with essential legislative changes in pension and tax systems. these changes should target both individuals aged 65+ and business entities or government structures. The goal of all such programs and actions must be the integration of the 65+ demographic into active economic and social life and the expansion of the working-age population. It is essential to transform these trends into a driver of stable economic growth, both at the level of individual business entities and at the macro level of national economies.

Conclusions. The conducted research confirms that demographic population ageing is one of the key long-term challenges for modern economic systems, public finances, and corporate governance. The increasing share of older age groups, the shrinking working-age population, and the rising demographic dependency ratio create new operating conditions for business entities, necessitating the transformation of internal control, internal audit, risk management, and overall management systems.

The study established that traditional management and control models lose their effectiveness under current demographic trends and require adaptation to the new socio-economic reality. It is substantiated that internal control, internal audit, and risk management systems must transform toward greater flexibility, digitalization, adaptability, and the integration of age-diverse workforces. Particular importance is placed on the use of digital technologies, remote employment forms, the automation of control procedures, and the development of competencies among older employees.

The scientific novelty of the research lies in its comprehensive approach to viewing demographic population ageing not merely as a macroeconomic or social issue, but as a driver for the transformation of internal control, internal audit, and corporate governance systems. The work substantiates the interrelationship between demographic processes, the effectiveness of management systems, and the necessity of forming adaptive models for organizing control and management activities amidst the ageing of labor resources.

The theoretical significance of the study consists in the development of scientific approaches to integrating demographic factors into the theory of internal control, internal audit, risk management, and corporate governance. The results expand scientific understanding of the impact of population ageing on the functioning of economic systems and provide a foundation for the further development of adaptive management concepts in the context of demographic shifts.

The practical significance of the research lies in the potential application of the results by business entities, state authorities, and local self-government bodies in developing strategies for adapting to demographic challenges. The proposed approaches can be utilized to improve personnel policies, implement digital adaptation and professional training programs for older employees, modernize internal control and audit systems, and develop state programs to support the economic activity of the 60+ population.

The socio-economic effect of implementing the research findings lies in the potential reduction of the negative impact of population ageing on the labor market, public finances, and economic growth. The active involvement of older individuals in economic activity, the enhancement of their digital literacy and professional mobility, and their integration into modern business processes can contribute to increasing the economically active population, stabilizing the public finance system, growing labor productivity, and enhancing the resilience of business entities to external risks.

Prospects for further scientific research should focus on developing adaptive models of internal control, internal audit, and corporate governance amidst the ageing of labor resources; assessing the effectiveness of digital technologies in control and management systems; investigating mechanisms for integrating older employees into the digital economy; and formulating comprehensive state and corporate programs aimed at minimizing the negative consequences of demographic ageing and transforming it into a factor for stable economic development.

References

1. Clark, D. (2025). Share of people in post-working age in total population of Poland 1950-2023. *Statista*. Retrieved from: https://www.statista.com/statistics/1198386/poland-share-of-people-in-post-working-age/?srsltid=AfmBOoo861hyNc0Qf5yCMY9uL4TZFsbBS_pdxhWZs8c5R0gzo9nhEUEH
2. Jamet, M., & El-Atillah, I. (2023). The rise of elderly workers: The Europeans defying retirement norms and working past the age of 70. *Euronews*. Retrieved from: https://www.euronews.com/next/2023/02/22/the-rise-of-elderly-workers-who-works-beyond-the-age-of-65-or-75-in-europe
3. Jurek, L. (2021). Managing demographic risk towards the process of workforce aging. *Review of Law, Business & Economics*, (3), 43–64. DOI: https://doi.org/10.31743/ppe.12688 [in Polish]
4. Mežnar, D. (2026). Challenges of a Long-Lived Society as an Opportunity for Restructuring Organizations. In P. Šprajc, M. Bernik, M. Klačmer Čalopa, D. Maletič, M. Mihić, N. Petrović, I. Podbregar, D. Tomić, & A. Žnidaršič Mohorič (Eds.), *45th International Conference on Organizational Science Development: Organization and the Longevity Society, Conference Proceedings* (Vol. 45, pp. 553-562). University of Maribor Press. https://doi.org/10.18690/um.fov.3.2026.41 [in Slovenian]
5. Rudnicka, J. (2025). Survey: Reasons for working beyond the official retirement age in 2024. *Statista*. Retrieved from: https://de.statista.com/statistik/daten/studie/1488110/umfrage/gruende-fuer-das-arbeiten-ueber-das-offizielle-rentenalter/ [in German]
6. Textor, C. (2026). Labor force participation rate Japan 1973-2025, by age. *Statista*. Retrieved from: https://www.statista.com/statistics/1233920/japan-labor-force-participation-rate-by-age/
7. The Institute of Internal Auditors. (2024). *The IIA's Three Lines Model*. Retrieved from: https://www.theiia.org/globalassets/documents/resources/the-iias-three-lines-model-an-update-of-the-three-lines-of-defense-july-2020/three-lines-model-updated-english.pdf
8. Wong, F. S., Ganesan, Y., Pitchay, A. A., Haron, H., & Hendayani, R. (2020). Corporate governance and business performance: the moderating role of external audit quality. *Journal of Governance and Integrity*, 2(2), 34-44.: https://doi.org/10.15282/jgi.2.2.2019.5466
9. *2024 Ageing Report. Economic and Budgetary Projections for the EU Member States (2022-2070)*. (2024). Institutional Paper 279. Brussels. https://doi.org/10.2765/022983

Received: 08.02.2026 *Accepted: 12.05.2026*
Received after review: 23.04.2026 *Published: 30.06.2026*

Authors Contribution: *All authors have contributed equally to this work*
Conflict of Interest: *The authors declare no conflict of interest*

Шум Аліна
доктор економічних наук, професор
професор кафедри обліку і фінансів
Національний технічний університет
«Харківський політехнічний інститут»
вул. Кирпичова, 2, м. Харків, 61002, Україна
e-mail: alina.shum@khpi.edu.ua
ORCID ID: 0000-0003-2948-6238

Демографічні виклики старіння населення: трансформація систем внутрішнього контролю, внутрішнього аудиту та управління на підприємствах

Анотація. У статті досліджуються демографічні виклики старіння населення та їх вплив на трансформацію систем внутрішнього контролю, внутрішнього аудиту, ризик-менеджменту й корпоративного управління. Особливу увагу приділено змінам структури трудових ресурсів, зростанню частки населення старших вікових груп і необхідності адаптації управлінських систем до нових соціально-економічних умов.

Постановка проблеми. Старіння населення в економічно розвинених країнах світу, зокрема в країнах Європейського Союзу, призводить до скорочення чисельності працездатного населення, збільшення навантаження на державні фінанси та трансформації ринку праці. У цих умовах традиційні системи управління, внутрішнього контролю та аудиту потребують модернізації для забезпечення ефективного функціонування суб'єктів господарювання.

Нерозв'язані аспекти. Незважаючи на значну кількість досліджень у сфері демографічного старіння та його макроекономічних наслідків, недостатньо вивченими залишаються питання впливу старіння населення на системи внутрішнього контролю, внутрішнього аудиту, ризик-менеджменту та корпоративного управління підприємствами, системи державного управління.

Мета статті. Метою дослідження є аналіз впливу демографічних тенденцій старіння населення на системи внутрішнього контролю, внутрішнього аудиту та управління, а також обґрунтування необхідності їх адаптації до сучасних демографічних викликів.

Основний матеріал. У дослідженні використано загальнонаукові та спеціальні методи пізнання: аналіз і синтез, статистичний, порівняльний та системний підходи. Інформаційною базою стали статистичні дані, аналітичні публікації та наукові праці з проблематики демографічного старіння, корпоративного управління та внутрішнього аудиту. У статті доведено, що демографічні зміни зумовлюють необхідність цифровізації управлінських і контрольних процесів, розвитку адаптивних моделей управління та інтеграції працівників старших вікових груп у сучасні економічні процеси.

Висновки. Обґрунтовано, що адаптація систем внутрішнього контролю, внутрішнього аудиту та управління до демографічних викликів є необхідною умовою забезпечення стійкого економічного розвитку. Впровадження цифрових технологій, програм професійного навчання та механізмів залучення осіб віком 60+ до економічної діяльності сприятиме підвищенню продуктивності праці, стабілізації державних фінансів і формуванню додаткових конкурентних переваг для суб'єктів господарювання.

Ключові слова: *демографічні виклики; старіння населення; внутрішній контроль; внутрішній аудит; ризик-менеджмент; корпоративне управління; цифровізація; трудові ресурси; системи управління.*

Формули: –; рис.: 4; табл.: –; бібл.: 9.

JEL Classification: J11, M42, G32

Для цитування: Shum Alina. Demographic challenges of population ageing: transformation of internal control, internal audit, and management systems at enterprises. Фінансово-кредитні системи: перспективи розвитку. №2(21) 2026. С. 269-281. https://doi.org/10.26565/2786-4995-2026-2-21

Список літератури

1. Clark D. Share of people in post-working age in total population of Poland 1950-2023. *Statista.* 2025. https://www.statista.com/statistics/1198386/poland-share-of-people-in-post-working-age/?srsltid=AfmBOoo861hyNc0Qf5yCMY9uL4TZFsbBS_pdxhWZs8c5R0gzo9nhEUEH
2. Jamet M., El-Atillah I. The rise of elderly workers: The Europeans defying retirement norms and working past the age of 70. *Euronews.* 2023. https://www.euronews.com/next/2023/02/22/the-rise-of-elderly-workers-who-works-beyond-the-age-of-65-or-75-in-europe
3. Jurek Ł. Zarządzanie ryzykiem demograficznym wobec procesu starzenia się zasobów pracy. *Przegląd Prawno-Ekonomiczny*. 2021. No 3. P. 43–64. https://doi.org/10.31743/ppe.12688
4. Mežnar D. Challenges of a Long-Lived Society as an Opportunity for Restructuring Organizations. In P. Šprajc, M. Bernik, M. Klačmer Čalopa, D. Maletič, M. Mihić, N. Petrović, I. Podbregar, D. Tomić, & A. Žnidaršič Mohorič (Eds.), & (Ed.), *45th International Conference on Organizational Science Development: Organization and the Longevity Society, Conference Proceedings* (2026. Vols. 45., pp. 553-562). University of Maribor Press. https://doi.org/10.18690/um.fov.3.2026.41

5. Rudnicka J. Umfrage: Gründe für das Arbeiten über das offizielle Rentenalter hinaus 2024. *Statista.* 2025. https://de.statista.com/statistik/daten/studie/1488110/umfrage/gruende-fuer-das-arbeiten-ueber-das-offizielle-rentenalter/
6. Textor C. Labor force participation rate Japan 1973-2025, by age. *Statista.* 2026. https://www.statista.com/statistics/1233920/japan-labor-force-participation-rate-by-age/
7. The Institute of Internal Auditors. *The IIA's Three Lines Model*. 2024.: https://www.theiia.org/globalassets/documents/resources/the-iias-three-lines-model-an-update-of-the-three-lines-of-defense-july-2020/three-lines-model-updated-english.pdf
8. Wong F. S., Ganesan Y., Pitchay A. A., Haron H., Hendayani R. Corporate governance and business performance: the moderating role of external audit quality. *Journal of Governance and Integrity*. 2020. No *2*(2). P. 34–44. https://doi.org/10.15282/jgi.2.2.2019.5466
9. 2024 Ageing Report. Economic and Budgetary Projections for the EU Member States (2022-2070). *Institutional Paper 279*. April 2024. Brussels. PDF. 358 pp. 2024. https://doi:10.2765/022983

Стаття надійшла до редакції 08.02.2026
Стаття надійшла після рецензування 23.04.2026
Статтю рекомендовано до друку 12.05.2026
Статтю опубліковано 30.06.2026

Внесок авторів: *всі автори зробили рівний внесок у цю роботу*
Конфлікт інтересів: *автори повідомляють про відсутність конфлікту інтересів*