

JEL Classification: G22, M41

DOI: <http://doi.org/10.34025/2310-8185-2025-1.97.03>

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## **DEVELOPMENT OF THE CONCEPT OF ACTUARIAL ANALYSIS IN THE INSURANCE BUSINESS**

### *Summary*

In modern economic realities, the effectiveness of the functioning of business entities in general and insurance companies in particular is determined by the choice of tactical and strategic direction of their activities, the validity of management decisions made, and the level of coordination of relationships between subjects of the insurance market. The basic tool for ensuring the effectiveness of these measures is the use of a system of statistical and econometric methods for calculating tariff rates and identifying the main aspects of financial relationships between the insurer and the insured, which are largely based on actuarial analysis methods. The article considered methods related to probability theory, mathematical statistics, and the theory of random processes, as well as their combination with objects of modelling and forecasting (insurance operations), and the comprehensive methodology of such modelling and forecasting.

The conducted research showed that actuarial analysis has its own goals and tasks, groups of users and performers, principles of analysis, a system of actuarial reporting, a system of economic analysis of this reporting, as well as specific models for evaluating the value of companies that use information from actuarial analysis. Thus, actuarial analysis can be presented as a new type of analysis at the current stage of insurance business development, which is sufficiently justified and necessary. Actuarial analysis forms an important vector of development of the theory and methodology of traditional insurance business and allows bringing traditional systems of analytical support for managing an insurance company into compliance with the new requirements of the modern economy. Therefore, the question of further studying and developing the concept of actuarial analysis and its application in various fields of activity is of great importance for improving financial management of business and increasing the usefulness of analytical information for participants in modern financial markets.

The results of the conducted research are useful for employees of financial and analytical departments of insurance companies who strive to improve the significance of actuarial management in the process of developing practical recommendations and justifying specific management decisions. The prospects for further research lie in focusing in the future on expanding the scope of using actuarial analysis methods not only in the insurance business, investment and pension funds, but also in other areas of

economic activity.

**Keywords:** insurance, actuary, actuarial analysis, risk assessment, reserve assessment, insurance management.

**Number of sources – 13, number of drawings – 5.**

### **References:**

1. Kozmenko, O.V., Kuzmenko, O.V. (2014). *Aktuarni rozrakhunky* [Actuarial calculations]. Universytetska knyha, Sumy, 224 p. (in Ukr.).
2. Klapkiv, Yu.M. (2020). *Rynok strakhovykh posluh: kontseptualni zasady, tekhnichni innovatsii ta perspektyvy rozvytku* [Insurance services market: conceptual foundations, technical innovations and development prospects]. TNEU, Ternopil, 568 p. (in Ukr.).
3. Bellis, C., Shepherd, J., Lyon, R. (2003). *Understanding Actuarial Management: actuarial control cycle*. Institute of Actuaries of Australia, Sydney, 462 p.
4. Manachynska, Yu.A. (2021). Business value management based on actuarial cash flow balance. *Vcheni zapysky TNU im. V.I. Vernadskoho. Serii: Ekonomika i upravlinnia* [Scientific notes of the V.I. Vernadsky TNU. Series: Economics and Management], vol. 32 (71), pp. 123-130 (in Ukr.).
5. Manachynska, Yu.A. (2013). Organization of Prospective and Operational Analysis Taking into Account the Actuarial Aspect. *Visnyk Lvivskoi komertsiiinoi akademii. Serii ekonomika* [Bulletin of the Lviv Commercial Academy. Economics Series], vol. 43, pp. 112-117 (in Ukr.).
6. Maliarchuk, O.V., Rylieiev, S.V., Drin, I.I. (2024). Financial and tax aspects of the planning of companies' activities: an econometric analysis. *Visnyk Chernivets'koho torhovel'no-ekonomichnoho instytutu* [Bulletin of the Chernivtsi Institute of Trade and Economics], vol. II(94), pp. 79-85 (in Ukr.).
7. Wilke, A.D. (1985). The Actuarial Profession in the European Communities. *Groupe Consultatif des Associations d'Actuaires des Pays des Communautes Europeennes*. Pp. 19-23.
8. Kulyna, H., Farion, Ya. (2017). The global insurance market in the context of a changing paradigm of global economic development. *Svit finansiv* [World of finance], vol. 3(52), pp. 48-59 (in Ukr.).
9. Buhlmann, H. (1987). Actuaries of the Third Kind? *ASTIN Bulletin*, vol. 2 (17), pp. 137-138.
10. Clarkson, R.S. (1996). Financial Economics - Investment Actuary's Viewpoint. *British Actuarial Journal*, vol. 2. Part IV. Pp. 809-973.
11. Bahrii, K.L. (2016). The importance of conducting an analysis of economic activity in making management decisions by a business entity. *Visnyk Chernivets'koho torhovel'no-ekonomichnoho instytutu* [Bulletin of the Chernivtsi Institute of Trade and Economics], vol. II(62), pp. 136-143 (in Ukr.).
12. Mack, Th. (1997). *Schadenversicherungsmathematik*. VVW, Munchener Ruck, Karlsruhe, 406 p.
13. Booth, P. (1999). *Modern Actuarial Theory and Practice*. Chapman&Hall/CRC, London, pp. 248-271.