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LOM IONUȚ-VALENTIN

INCREASING INSURANCE EFFICIENCY BY VALORISING THE FINANCIAL POTENTIAL OF INSURANCE COMPANIES

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Summary of the doctoral thesis in economics

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Doctoral commission:

Andrei Mulic, PhD in Economics, University Lecturer, State University of Moldova - *president*
Iulia Caprian, PhD in Economics, University Lecturer, State University of Moldova - *doctoral supervisor*
Ulian Galina, PhD, University Professor, State University of Moldova - *official referent*
Manta P. Elena Otilia, Habilitated Doctor, Professor, National Institute of Economic Research, Romanian Academy, Romania - *official referent*
Natalia Bank, Habilitated Doctor, University Professor, Academy of Economic Studies of Moldova - *official referent*
Ungur Cristina, PhD, Scientific Researcher Coordinator, National Institute of Economic Research, Academy of Economic Studies of Moldova – *member of the commission.*

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The PhD thesis and the abstract can be consulted at the Library of the State University of Moldova and on the ANACEC website (www.cnaa.md).
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President of the Public Support Committee
Mulic Andrei, PhD, University Lecturer

semnătura

Scientific leader,
Ciprian Iulia, PhD, University Lecturer

semnătura

Author Lom Ionut -Valentin

semnătura

Content

CONCEPTUAL BASIS OF THE RESEARCH

The theoretical actuality and practical importance of the addressed problem. The current economic context is marked by the increasing importance of insurance as a determining factor of economic growth. Contrary to the widespread opinion that insurance is a necessary and requested financial service to protect the interests of the population and entrepreneurs from various risks, the insurance sector in Romania and the Republic of Moldova is underdeveloped, the degree of insurance penetration in Romania, and in the Republic of Moldova being lower than in European countries. The insurance market is characterized by a high level of concentration, and the tendency to reduce the number of insurers affects the competitive environment, leading to the oligopolization of the market, and, as a result - a decrease in the quality of insurance services. These issues served as a reason to investigate the problems of insurance efficiency.

The relevance of the research theme consists in the need to identify solutions to boost the development of insurance as a strategic field of activity for the development of any economy. Insurance not only makes it possible to compensate for losses suffered but is also one of the most stable sources of financial resources for investment. All this determines the strategic position of insurance in countries with a developed market economy, as well as in countries with developing economies. At the current stage, the most important task in Romania is to establish a modern insurance market with innovative products, but also to develop an insurance culture. This can only be achieved if insurance is efficient for both insurers and the insured.

To deal with the numerous economic and financial problems and the multiple events causing damage to both people's lives and businesses, insurance companies are looking for solutions to make their activities more efficient. While the theoretical and methodological aspects of assessing efficiency for the insurer are being researched in more depth, the efficiency of insurance through the prism of maximizing the value for the insured, society, and the economy in general, requires further research, given its economic, financial, and social impact. At the same time, the research has allowed us to find that insurance, in terms of the functions it performs, is complex in nature, and needs to be taken into account in the efficiency evaluation process. The stated aspects constitute the main motivation that led us to focus our attention on such a complex area as insurance efficiency which, in our opinion, depends on the capitalization of the financial potential of insurance companies.

Description of the situation in the research field. The issue of the efficiency and role of insurance in the economy is studied under different aspects, namely the methodological approaches to its evaluation are presented in different ways. However, the multiple studies and management models are difficult to apply to the realities of the Romanian economy. Complex analysis and evaluation models of insurance efficiency are not of interest to Romanian insures, who prefer to adopt financial decisions based on efficiency evaluation through traditional methods, translated into solvency and profitability indicators, considered by experts to be outdated in the current context of financial markets development, especially in the context of new regulations.

The issue of insurance through the conceptual-methodological approach is very topical for researchers and practitioners. An important contribution in clarifying these aspects belongs to scholars: St. Fotescu, M. Bogdan, C. Ciumaș, D. Constantinescu, L. Galiceanu, P. Liedtke, T. Negru et al. The efficiency of the insurance activity is a debated topic in the studies published by M. Văduvă, L. Cilestecan, C. Dolghi, Iu. Caprian, A. Giurgiu, T. Moldovan, G. Caporrale, Șt. Popovici et al. Due to the fact that one of the priority tasks in the development of the national insurance system is the expansion of the scope of services offered to the insured, the role of capitalizing on the financial potential of insurance companies is important. The theoretical-methodological problems regarding the insurance financial potential are the subject of research in the works of the following researchers: C. Ungur, L. Cilestean, N. Botnari, A. Teaca, D. Constantinescu, R. Pintea, R. Şumandea-Simionescu et al.

In the thesis, a researched subject concerns the aspects of the interdependence between insurance development and economic growth, which are extensively addressed in the works of the researchers: M. Andreica, A. Chițu, A. Atkinson, A. Maltz, D. Ștefănescu et al.

Research in the field of insurance is carried out in important national, European and international scientific centers: Insurance Europe, SwissRe etc. However, there are no clear-cut views on insurance efficiency, the financial potential of the insurance company, or the impact of insurance on economic growth. Thus, the research carried out in this thesis will contribute to the development of the insurance sector by developing models and tools to evaluate efficiency, determine the level of capitalization of the financial potential of the insurance company, and increase the contribution of this sector to economic growth.

The scientific problem of the theoretical and methodological basis for analyzing insurance efficiency as a field of economic and financial activity has confirmed the need for its systemic approach through the prism of the level of capitalization of the financial potential of insurance companies considered the determinant of insurance efficiency at all levels (microeconomic, sectoral and macroeconomic)

The object of the research includes the activity of insurance companies, whose impact influences the increase of insurance efficiency, as well as the insurance market as an element of the financial system.

In accordance with the importance of the research topic, **the purpose of the research** has been formulated, which is to develop and improve the existing theoretical-methodological framework of insurance efficiency assessment by identifying the unused reserves of the financial potential of insurance companies.

Objectives:

- Clarify the concept and role of insurance as a component of the financial system.
- Define the current state of knowledge on insurance efficiency and methods of its assessment.
- Research the components and the calibration of the mechanism of insurance financial potential formation.
- Comparative analysis of the evolution of the insurance market in Romania and the Republic of Moldova.
- Evaluation of efficiency and identification of financial potential through the lens of compliance with solvency and stability requirements.
- Development of analytical and predictive tools for the assessment of insurance efficiency.

The scientific-methodological support of the thesis. The delimitation of the conceptual approaches to the notions of insurance, the effectiveness of insurance and the explanation of their forms, i.e., the explanation of the diversity of opinions was carried out with qualitative and quantitative research methods, the comparison method, analogy, the historical method, documentary analysis, the method of scientific abstraction (induction, deduction). These methods were applied to distinguish between different concepts and to contrast different opinions. The delimitation of the current state of knowledge regarding the financial potential of the insurance company was achieved by applying content analysis, observation method, deductive method, analogy, observation, and systemic analysis.

To evaluate the development trend of the insurance market in Romania and the Republic of Moldova, concentration indices were calculated and analyzed. The analysis was carried out with numerical calculation procedures (concentration coefficient, Herfindahl-Hirschman index) and the graphic method. The accumulated data were processed with statistical procedures such as grouping, relative sizes of dynamics and structure. The comparative method is widely applied in the thesis, in particular, the comparison over time, the territorial comparison (the insurance market in the Republic of Moldova and Romania, as well as with the average at the European level). The methodical and normative study of insurance activity in the context of Solvency II requirements was carried out by applying the method of financial rates, systematizing indicators, grouping, time series modelling, etc.

In order to measure and analyze the financial potential of insurance as a field of activity and an element of the financial system, the matrix method (Franchon & Romanet model) was applied, and the scientific approach for evaluating the financial potential of the insurance company was based on the component analysis method (the Karhunen-Loeve transformation), the systematization of the determinants of the financial potential of the insurance company was carried out through the systemic

approach and multicriteria analysis, and to determine the level of capitalization of the financial potential, the linear method of matrix standardization was used.

To demonstrate the contribution of insurance to economic growth, econometric modelling was carried out. Information was processed using statistical analysis methods: comparison, regression and correlation.

The informational support of the research. To carry out the empirical studies in chapters 2 and 3, reports and data banks of the National Supervisory Authority of Romania and the National Commission for Financial Market of the Republic of Moldova financial statements published on the web pages of insurance companies, CEA Insurance of Europe, SwissRe, European Insurance Europe Federation, OECD were analyzed.

Research hypothesis: Insurance efficiency is determined by the potential of insurance companies and the adaptation of the financial mechanism, which increases their performance and thus the development of the insurance sector and economic growth in general.

Within the research of the addressed scientific problem, the following elements of **scientific novelty and originality** were highlighted:

- Delimitation of the conceptual-methodological framework of insurance efficiency by correlation with the level of capitalization of the financial potential.
- Econometric model of the interdependence between the financial potential of insurers and economic growth.
- Strategic analysis of the Romanian insurance sector with the application of the Franchon&Romanet matrix.
- Development of the model (integral index) to evaluate the capitalization of the financial potential as a complex indicator of the efficiency of the insurance company's activity.

The theoretical importance of the research within this thesis resides in the concretization of the concept and methodology of insurance efficiency evaluation and the determination of the components of the insurance company's financial potential. The conclusions and recommendations presented in the thesis present theoretical value for the knowledge and evaluation of the financial potential of insurance companies and the development of the insurance sector in general.

The applicative value of the work consists in the application of insurance efficiency integrated analysis. Also, financial managers of insurance companies can use the financial potential assessment model as an analytical tool to determine the performance of their actions and establish strategic indicators of business efficiency. The econometric model of the interdependence between insurers' financial potential and economic growth can serve as a tool for supervisory and regulatory bodies to formulate strategic visions regarding the development of the insurance sector. Both insurance companies and supervisory and decision-making bodies can use the results of the strategic analysis of the insurance sector with the Franchon&Romanet matrix model to determine strategic development directions.

Approval of scientific results. The main results of the research carried out in this doctoral thesis were communicated at 13 national and international scientific events. A total of 20 scientific papers were published on the thesis topic, with a total volume of 4.85 author sheets. Also, the results obtained are approved by the Innovator's Certificate no. 125 of 05.12.2022 and the Act of implementation at the "Allianz-Tiriac Unit Asigurari" SA insurance company, formerly known as Gothaer Asigurari Reasigurari SA (Romania). Some results will be used in the didactic-methodical process in the subject "Insurance and Reinsurance".

Summary of the thesis sections. The structure of the doctoral thesis was determined by the issues arising from the title of the thesis, the purpose and tasks of the research and includes an introduction, 3 chapters, general conclusions and recommendations, a bibliography, appendices, list of abbreviations, keywords, annotations in Romanian, English and French languages, evidence of implementation of the results.

Keywords: insurance, efficiency, solvency, model, Solvency II, matrix method, financial potential, multicriteria analysis, component analysis, insurance market, financial relations.

SUMMARY OF THE CHAPTERS

Chapter 1 " **The conceptual and theoretical foundation of the financial potential of insurance companies through the lens of efficiency** " represents the state of knowledge in the field of financial potential through the efficiency approach, its importance comes from the understanding of the concepts of insurance, insurance efficiency and financial potential, these being systematized in a multidimensional conceptual approach. Starting from the presentation of the concept of insurance, we found that the scientific literature approaches the concept of insurance from different aspects: legal, economic, financial, social, psychological, etc. Based on the research carried out, the economic-financial approach to insurance is of interest, highlighting its essence as an activity of providing financial services by insurance companies, which operate with specific financial instruments - insurance policies, as well as the social approach, taking into account the role of insurance in society and the solution of social problems.

The activity of insurance companies is carried out in the insurance market – an important component of the financial and social-economic infrastructure. Insurance companies ensure the mobilization of policyholders' funds and the creation of adequate financial resources, including insurance reserves, to provide protection to policyholders within the limits of insured risks. Thus, the activity of the insurance company involves exchange relations with subjects of economic and financial relations, which involve the transfer of services of financial assets. Exchanges are based on currency, giving rise to financial relationships. By taking over the risks from the insured, insurance becomes a protection mechanism and allows the financial stability of entities, citizens and the state to be maintained.

Providing insurance services is a socially useful activity. It is one of the basic conditions that ensure the reliability, risk tolerance and security of entrepreneurship. Insurance services and those related to them represent services of a financial nature offered by a service provider - the insurer. Insurance, reinsurance, coinsurance, and retrocession services are services provided by insurance companies, which may be carried out by insurers (reinsurers) in the form of joint-stock companies, including with foreign investments or by mutual funds [11]. In addition to insurance and reinsurance services, we also distinguish insurance-related services, such as those provided by other types of entities (insurance brokers/agents, insurance banks, consulting, actuaries, etc.

Insurance as a field of activity is characterized by an increased degree of risk, which directly affects the nature of financial relations within the financial system, making it necessary to regulate them. The process of providing insurance services starts from the moment when the insurance company is insured with all the necessary factors, the main factor being the risks assumed by the insured. It follows that in the absence of the "risk" factor, insurance activity is impossible. By assuming the risk, the sale-purchase transaction of insurance services takes place, i.e. the collection of the insurance premium.

The research carried out led to the systematization of the following conceptual approaches to insurance:

1) *as an economic-social category*: activity of offering economic-financial protection by assuming risks against a premium; economic-financial compensation operation; insurance fund for compensation of losses from economic activities and related to people's lives.
2) as *a system of redistributive relations (economic and financial)*, which, as a rule, take monetary form, reflecting a set of specific relations that are associated with the compensation of losses caused to the economy and the population; these relations presuppose the redistribution of a part of the national income conditioned by the risky nature of production and social life.
3) as a *legal category*, insurance is manifested by an agreement of will between two parties, materialized in the form of an insurance contract (policy).

Another aspect addressed in this chapter is the issue of evaluating the effectiveness of the insurance activity. The current stage of development of economic thinking is characterized by an increased focus on insurance efficiency issues. Researching conceptual and methodological approaches to insurance efficiency has highlighted the large number of indicators that characterize it, which suggests that insurance efficiency is complex. The multidimensionality of the insurance

efficiency methodology creates some impediments for users, who are put in a position to find solutions for the simultaneous improvement of all the values of the efficiency indicators, which is practically impossible.

The multidimensional nature of insurance efficiency justifies the delimitation of conceptual and methodological approaches to its evaluation from the position of a) the insurer and b) the insured, as well as from the fact that an insurance contract is a bilateral transaction involving at least two parties - the insurer and the insured. And if from the perspective of the insured the problem is sufficiently well studied then from the perspective of other interested parties, these topics are less addressed. For insurers, the insurance activity is considered efficient if the expenses related to compensation, as well as those related to the formation and management of the insurance fund, are as low as possible. Within an insurance company, financial flows are heavily influenced by random loss events. Therefore, it is recommended that the efficiency analysis be carried out over a period exceeding 5 years [16, page. 151], because only in this way, the conclusions drawn will be conclusive. In the case of optional insurances, factors of a subjective nature influence, to a greater extent, the results obtained by the insurer. An essential characteristic of the insurance activity is *the reversal of the production cycle*. The insurer sets the price of the service (insurance policy) without knowing with certainty the costs, which he will have to bear in case of the occurrence of the insured event, the setting of the price is based on estimated calculations [5, page. 170].

The efficiency of insurance operations from the perspective *of the insured* consists of:

1. Obtaining the highest possible compensation in relation to the damages caused by the risk event.
2. Minimization of the time needed to liquidate the damage.
3. Minimization of insurance premiums, a criterion influenced by the degree of insurance coverage.

The efficiency of insurance at the insurer is estimated by achieving objectives of maximizing income or minimizing costs related to the activities carried out:

1. *Maximization* of revenues, for which purpose the increase of the insurance portfolio, the diversification of the insurance products (offer), the dynamic increase in the volume of collected premiums, the increase in the number of concluded contracts, etc. are considered.
2. Cost *minimization* through risk prevention actions, rigorous sizing of administration expenses, specification of special clauses in the insurance conditions, etc.

Considering insurance as a social-economic system, efficiency will materialize in the level of utility for society, which is manifested by the proper performance of their functions. In order to carry out this research, the insurance functions and the efficiency indicators corresponding to each function were systematized, as follows:

- *Function of protection against risks* of a *financial nature (*through the compensation of damages by insurers to the insured) and *social (*through the social insurance system). The efficiency of the insurance protection function is evaluated using the following indicators:
    a) *Degree of insurance coverage* by objects of insurance (ratio between the number of insured objects to the insurance potential corresponding to the insured object);
    b) *Level of insurance protection* reflects the extent to which insurance fulfils its functions in society.
    c) *Loss ratio*.
- *Risk prevention function.* The efficiency of this function results from prevention measures, being considered as a measure of both the efficiency and the quality of the protection through insurance and expressed by the following indicators:
    a) *Volume of financial resources allocated* for preventive measures in correlation with the number of insured cases.
    b) *Share of insured items* for which compensation has been paid.
    c) *Frequency of risks* in relation to the number of insured objects.

Accordingly, under conditions of efficiency, with the increase in the volume of financing of risk prevention measures, indicators b) and c) must decrease.

- *Saving function*. The efficiency of this function is evaluated, especially in countries where life insurance is developed. The following can serve as indicators of insurance efficiency:
    a) *Share of life insurance in the insurer's portfolio,* and its dynamic evolution.
    b) *Level of compensation* by type of life insurance.
    c) *Real return on* financial saving instruments.
- *Investment function* is manifested in economic growth and development through investments made up of insurance reserve funds and equity capital. The efficiency of the investment function is evaluated in terms of the placements made. In this case, an important role is assigned to the assessment of the investment potential of insurance companies. Relevant indicators for evaluating the efficiency of the insurance investment function can be considered as follows:
    a) *Return on investments* of the insurance sector, which reflects the efficiency of the investment activity of the insurance company, which allows insurers to identify internal reserves for reducing insurance rates.
    b) *Degree of diversification* of the investment portfolio.
    c) *Volume of funds invested in the calculation per monetary unit* of insurance premiums collected by type of insurance.

Knowing the methodological approaches for evaluating the insurer's efficiency facilitates the analysis of the financial potential, in order to identify the reserves for its more intense capitalization. The efficiency of insurance as a sector of the economy is reflected in its contribution to GDP formation. In the given context, efficiency at the macroeconomic level reflects the contribution of insurers through the prism of the following indicators: insurance penetration; insurance density and its dynamic evolution (total and by type of insurance); the contribution of the insurance sector to the total amount of investments; the return on investments made by insurers; average profitability per branch. The assessment of the efficiency of insurance as a field of activity is relevant and important to give assessments on the evolution (growth or decline) of the sector and financial stability.

Another perspective of approaching the efficiency of insurance identified by the author is *the position of the relationship of insurance subjects*, according to which the efficiency of insurance can be: the efficiency of insurance for the state, expressed in terms of saving public money; social efficiency of insurance and efficiency for the insured. All these three categories of efficiency added together determine *the total efficiency* of insurance, which means the totality of benefits (economic, social, moral, etc.) that the insurance protection system offers to society as a whole and for each individual subject of the insurance and is manifested in solving an important problem for the development of society and the economy: ensuring the continuity of social reproduction.

Thus, by contributing to the development of the insurance system, the state is advantaged, first of all, by relieving the burden of expenses for various payments, such as liquidating the consequences of natural disasters, compensating the costs of medical care, purchasing housing, solving other problems primarily related to ensuring people's social protection. Romania's experience shows that insurers are little involved in this process, and compensation costs ultimately fall on taxpayers, which, in turn, only increases the overall fiscal burden [7].

Secondly, it is necessary to consider the efficiency from the position of insurance participation in the state economy as an institutional investor. The insurance funds, made up of the resources of the population and of business entities, are used by the state to ensure the continuity of social reproduction by investing part of the fund's resources under the conditions of profitability, repayment, liquidity, and diversification in priority areas of socio-economic and environmental development of society.

The efficiency of insurance in this case will be measured over time by increasing the volume of investment resources provided by insurance companies to the market and by increasing the weight of investment projects that are financed from the monetary resources accumulated by insurance companies and provided by them to the capital market. In this way, the need to intensify the investment activity of insurance companies by developing an effective mechanism for promoting insurance services in society is confirmed. Meeting the needs of the economy in investments, including through the funds established by insurers as efficient institutional investors, will ensure sustainable socio-economic growth, contributing to social progress and, accordingly - to improving

the quality of people's lives, which once again confirms the social efficiency of the institution insurance from the state's position.

The social efficiency of insurance is expressed in increasing the social and environmental comfort of life in society, using the index of social progress as a measure of the quality of life. According to IPS2022, Romania is in a much more advanced position compared to the Republic of Moldova, which has an upward evolution in this ranking. However, by comparison with the level of EU member states, Romania occupies the penultimate position, ahead of Bulgaria. Both Romania and the Republic of Moldova are regressing in terms of health and well-being, food and basic medical care, aspects that could be improved through the development of insurance.

The use of the presented methods for calculating different types of insurance efficiency makes it possible to determine the performance indicators and the degree of participation in the protection system by ensuring the interests of various subjects who decided to ensure protection against the occurrence of adverse events through insurance. For the authorities, these methods can be useful for determining the main parameters of the development strategy and the effectiveness of the operation of the insurance system in society, and on this basis, to formulate effective methods and mechanisms for stimulating the system of insurance relations, which in turn boost sustainable development of all subjects of social-economic relations. The synthesis of methodological approaches to efficiency evaluation needs to be systematized on 3 levels: macroeconomic; branch and macroeconomic (fig. 1.)

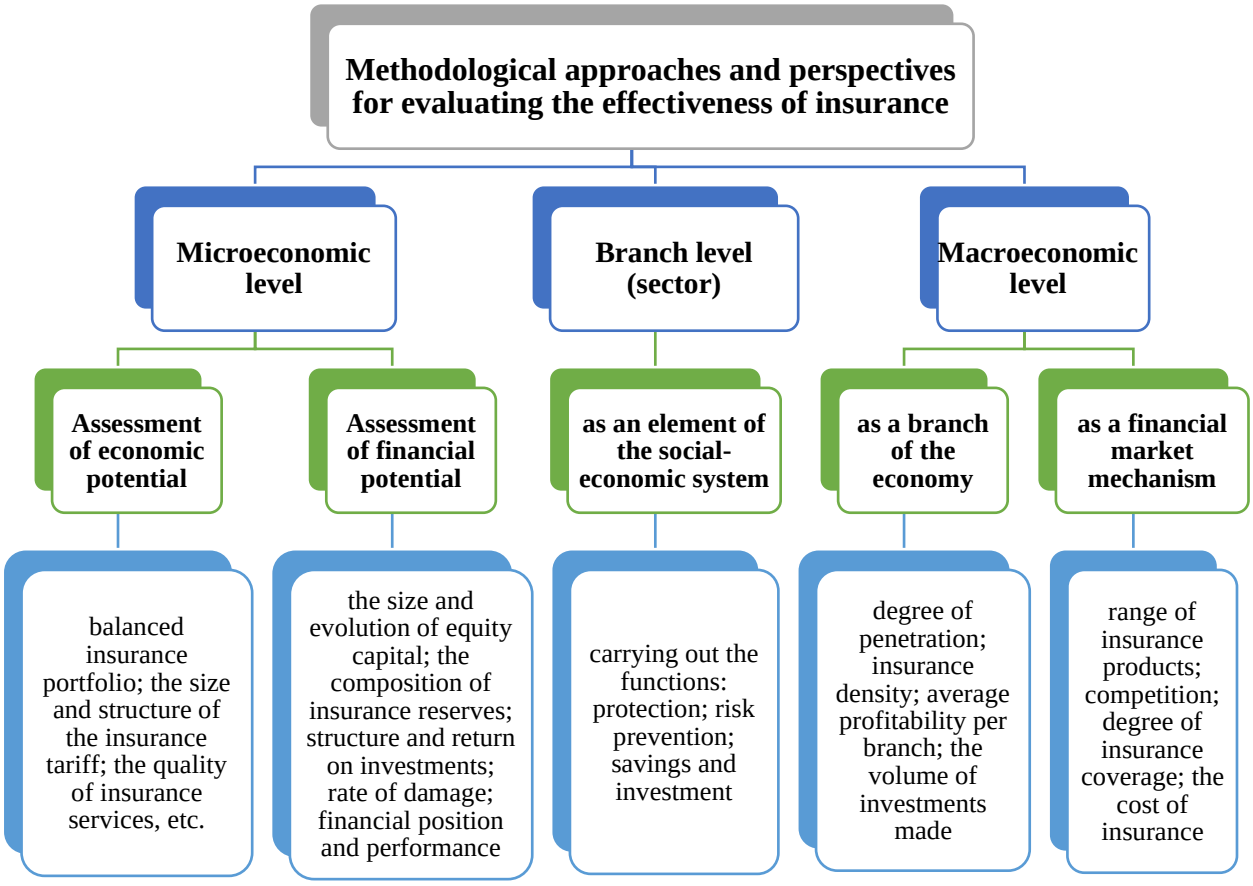

Fig. 1. Criteria for the systematization of methodological approaches to the assessment of insurance efficiency.

Source: developed by the author

The sub-chapter on the formation of financial potential in insurance clarifies the essence of the concept, its elements, and the way of its formation through the lens of efficiency. Establishing the financial potential is a defining condition for the activity of the insurance company.

The sources of the insurance company's financial potential are:

- authorized paid-in capital (share capital);
- insurance premiums collected from customers.

• income from investment activities.

Financial potential does not mean only the size of the insurer's financial resources, but also their adequate management for the successful implementation of insurance activities on the market. The management of the financial potential of an insurance company is the guarantor of the economic well-being of both the state and society as a whole. This explains the importance of increasing the financial potential of insurance companies, including through the development and implementation of an effective investment strategy [11, page. 155].

In order to maximize the financial potential of the insurance company, it is necessary to implement a strategy in 4 steps/stages:

- Factorial analysis of the level of capitalization of the financial potential and determination of the target variables/indicators of the financial situation.
- Estimating the possibilities of increasing the financial potential based on the development of directions for the realization of the investment strategy.
- Supervising the implementation of the strategy and the evolution of the level of financial potential.
- Adjusting the management of the company's financial potential, considering the strategic objective of sustainable growth.

Thus, the strategy acts as a necessary tool for increasing the financial potential of the insurance company. Such strategies can be developed based on a diagnosis of the efficiency of capitalizing on the financial potential at the microeconomic, sectoral and macroeconomic levels.

The theoretical research carried out confirmed the scientific hypothesis that insurance **efficiency** is determined by the potential of insurance companies and the adaptation of the financial mechanism, which increases their performance for society, and thus the development of the insurance sector and economic growth in general.

Chapter 2 " **Methodology of the formation of the financial potential in insurance by correlation with the requirements of efficiency and stability"** approaches by comparison the evolution of the insurance market in Romania and the Republic of Moldova. At the same time, this chapter analyzes the regulatory framework of the insurance activity in the context of Solvency II requirements and the analytical aspects of the efficiency of the insurance activity and the identification of the financial potential in accordance with the solvency and stability requirements.

The importance and contribution of the insurance sector were evaluated by analyzing a system of quantitative and qualitative indicators. One of the quantitative indicators characterizing the level of development of the insurance market is the number of participants, which is represented by insurance and reinsurance companies and brokerage companies. The year 2001 brought important reforms, which influenced the evolution of the insurance market in Romania, being applied provisions of the legislation in the process of harmonization with the directives of the European Union. This explains the threefold reduction in the number of insurance companies existing at the end of 2000 from 73 to 26 insurance companies in 2021. However, the reduction in the number of insurers has not affected the volume of activity, on the contrary, it has continued to grow. Replicated to the conditions and level of the economies of developing countries, such as Romania and the Republic of Moldova, where insurance companies are considered small and medium-sized according to their financial potential, an even steeper decrease in the average life expectancy is anticipated. In the given context, we believe that the insurance companies in Romania and the Republic of Moldova must focus on strategic objectives by implementing new models for capitalizing on financial potential. We can consider that in the Republic of Moldova, this phenomenon is already manifesting itself, so that at the end of 2021 the number of insurance companies that hold a license to carry out insurance activities has reduced to 10 compared to 16 - in 2017. In addition, it will be taken into account that the insurance market is in the formation phase, which is characterized by problems of the growth stage specific to insurance companies.

The analysis carried out based on the data of the annual reports of the Financial Supervisory Authority (Romania) and the National Commission of the Financial Market of the Republic of Moldova, shows that in the last two decades the insurance market in both countries is going through

a process of market concentration, a phenomenon that manifests by the constant decrease in the number of insurance companies.

In the Republic of Moldova, this phenomenon is more pronounced, due to the amendment of the legislation on capital requirements and supervision norms. Many of the created companies failed to comply with the new rigors, respectively, in the year 2021 in the Republic of Moldova only 10 insurance companies reported activity compared to 45 - in the year 2000. In Romania, the process of concentration of the insurance market was slower. On average, an insurance company ceases its activity every year.

According to the value of the concentration coefficient, the insurance market in Romania is characterized by a moderate level of concentration in the period 2019-2021, unlike the insurance market in the Republic of Moldova, which shows a higher degree of concentration. The same conclusion also results from the analysis of the calculated values of the Herfindahl Hirschman Index for the insurance market in Romania, which from 2020 indicates a level that exceeds the threshold of 1000, which attests to a moderate concentration of the market, but much lower compared to the values recorded at market level in the Republic of Moldova. The tendency to decrease the number of insurers can have negative consequences, manifested by the oligopolization of the market, which creates premises for the authorities regarding stricter competition supervision.

The volume of gross premiums subscribed by insurers from the Republic of Moldova is 0.005% of that of the EU-15 and only 3.81% of that of Romania. We note, regretfully, that in the market size indicator, the Republic of Moldova ranks last in the world ranking. Measured in nominal terms, the value of gross premiums on the market in the Republic of Moldova increased annually on average by approximately 10.73%. During the analyzed period, the companies in Romania paid compensations and insurance allowances about 3 times lower in relation to the gross premiums collected, registering a nominal decrease of about 9% compared to the previous year.

The insurance market in Romania, characterized by the evolution of the main underwriting indicators, reflects a slower evolution compared to the one in the Republic of Moldova. The average annual growth rate of insurance premiums, as well as insurance benefits paid, is on average about 6.2% compared to 10.7 (insurance premiums) and 13.0 (benefits) in the Republic of Moldova. This is explained by the processes of market development. As I mentioned above, Romania went through some stages in the development of the insurance market in 2000-2001, and the Republic of Moldova - starting from 2006.

The structuring of the insurance market by segments (general insurance and life insurance) aims to highlight the qualitative aspects. Based on the ASF (Romania) and CNPF (Republic of Moldova) reports, the indicators of the structure of the insured market were determined. The comparative analysis reflects the maintenance of a high share of the mandatory component of contracting policies, a factor that explains the high share of general insurance, as well as the low representation of life insurance. The insurance markets in Romania and the Republic of Moldova are dominated by the general insurance segment, especially car insurance. Life insurance, which dominates the European insurance market, but in Romania the share held by this segment is only 18% of the total gross premiums subscribed.

The structure of insurance premiums collected by insurance companies in the Republic of Moldova is similar to that in Romania, only that the share of life insurance is even lower, registering a downward trend in relation to the share of the general insurance segment. In addition, the general trend of the evolution of general and life insurance premiums in both countries is increasing.

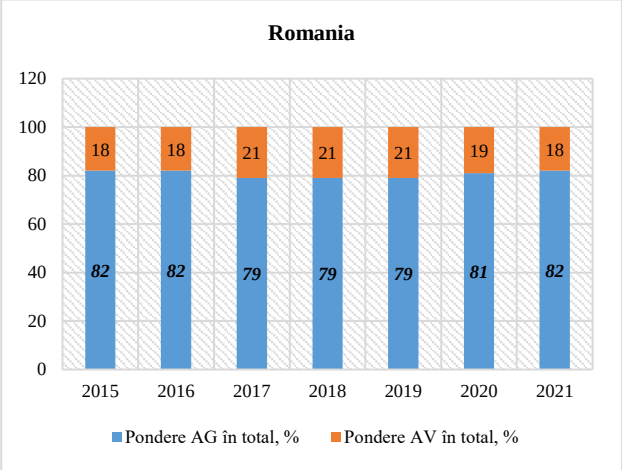

Fig. 2. The structure of insurance premiums collected by insurance companies in Romania

Source: systematized based on the reports of the Financial Supervision Authority

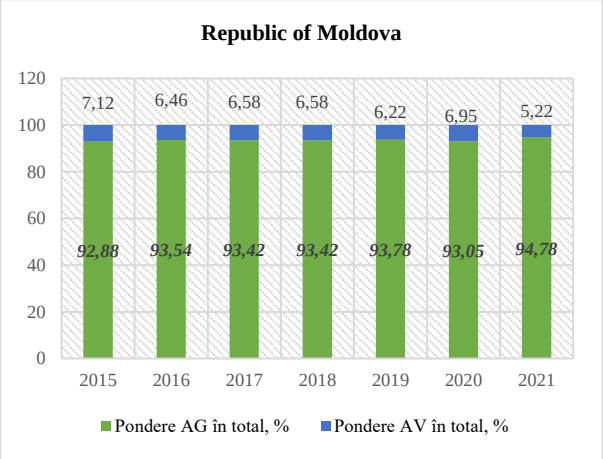

Fig. 3. The structure of insurance premiums collected by insurance companies from the Republic of Moldova

Source: systematized based on the reports of the National Financial Market Commission

The grouping of 54 OECD countries according to the market share of life insurance in the portfolio of insurers in 2021, allowed us to find that only 7 countries have a share of life insurance up to 20%, and 15 countries - between 20 and 40%. At the same time, it is visible that in countries with a high level of development or that register re accelerated economic growth, the share of life insurance exceeds 60% [20].

The gross compensations paid by insurance companies in Romania for the two categories of insurance totaled 7.6 billion lei in 2021, with the largest part going to the general insurance segment.

Cumulatively, the number of indemnities paid by the 10 insurance companies operating on the market in the Republic of Moldova at the present time constituted about 662 million lei, of which only 34.2 million - for damages related to the life insurance segment. At the same time, the evolution trend of the amounts of compensation paid registers significant fluctuations.

In addition to traditional indicators, we considered that to analyze the level of development of a market, the absolute indicator "number of contracts" concluded or in force does not provide sufficient informational value, because its value can be influenced by several factors. Therefore, we considered that the indicators "gross written premiums per contract" and "average number of contracts in force per insurance company" better reflect the trends in the development of the insurance market, in particular, their dynamic evolution. The analysis of these indicators neutralizes, to some extent, the influence of the change in the number of insurers and emphasizes the performance in the insurance field. In addition, their values can be compared over time to determine trends, in a territorial aspect, in the case of the given research – between countries, by segments and types of insurance.

Figure 4. reflects a large difference regarding the value of this indicator. Thus, the average premium per contract in Romania exceeds more than 10 times the level of this indicator in the Republic of Moldova. The operation and evolution of the reinsurance market provide a picture of the process of integration of the national market into the world market of insurance services. Based on the ASF reports from Romania, necessary data were systematized to assess the trend of the evolution of the reinsurance market. The analysis carried out allowed us to find that on average more than 1/3 of the gross premiums subscribed on the Romanian insurance market are ceded annually in reinsurance, the trend remaining relatively constant, except for 2020.

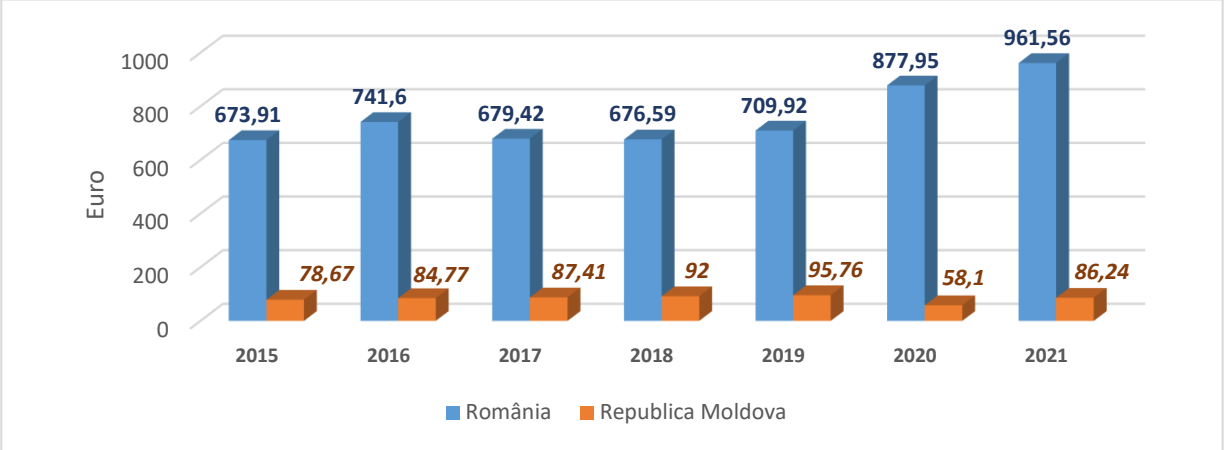

Fig. 4. Average gross written premiums per contract recalculated in Euros.
Source: author's calculations

During the analysis, significant differences were found in the reinsurance policies of insurers from the Republic of Moldova depending on their segment. Traditionally, insurance companies take a much larger share of the underwritten risks for life insurance because of the more accurate predictability of claims. The upward evolution of gross written premiums and net reinsurance premiums collected reflects a concern of insurers in Romania for the management of the risks assumed. This trend was also transmitted to the evolution trend of the gross compensations paid. The increase in the degree of cession in insurance of the compensations paid, indicates that the risks with a higher probability of occurrence were ceded in reinsurance.

An important segment of the insurance sector is represented by brokerage companies. The degree of intermediation in Romania has an increasing tendency during the analyzed period. About 13 percent of the total gross premiums written by insurers were brokered in the last two years by brokers. The revenues obtained from the insurance intermediation/distribution activity on the Romanian market come from the intermediation/distribution contracts concluded with insurance and reinsurance companies. The revenues from the intermediation activity of brokerage companies in Romania amounted to 1737.13 million lei in 2021, a quarter more than the previous year and a double increase compared to 2015. At the same time, the increase in the degree of intermediation from 8.18% in 2015 – to 13.46% in 2021 is attested.

In the Republic of Moldova, for the same period, insurance intermediation income increased 2.4 times, and the degree of intermediation constitutes about 1/3 of the volume of gross premiums written, and in the last two years of the analyzed period - about 45%. The analysis of the ratio between the income obtained by brokers from the intermediation activity and the volume of intermediated premiums indicates a higher yield compared to the intermediation activity of brokers in Romania. An important criterion is dedicated to the methodical and normative study of insurance activity in the context of Solvency II requirements. The issue of ensuring the financial stability and solvency of insurance companies is the basic concern of insurance companies, but also a condition for the efficient functioning of a modern economy. Maintaining them at a certain level depends on the possibility of ensuring the insurance protection of society, intended to ensure economic security, continuity, and stability of social reproduction in the conditions of a dynamic business environment. Both the financial stability and the solvency of an insurance company are determined by the influence of a system of factors, which can be classified according to different criteria (Figure 5). Judging from the position of the systemic approach, which represents the insurance company as a specific system of economic relations, influencing factors on the stability and solvency of the insurance company can be delimited into internal factors, which originate within this system and factors outside the company insurance (external). [16].

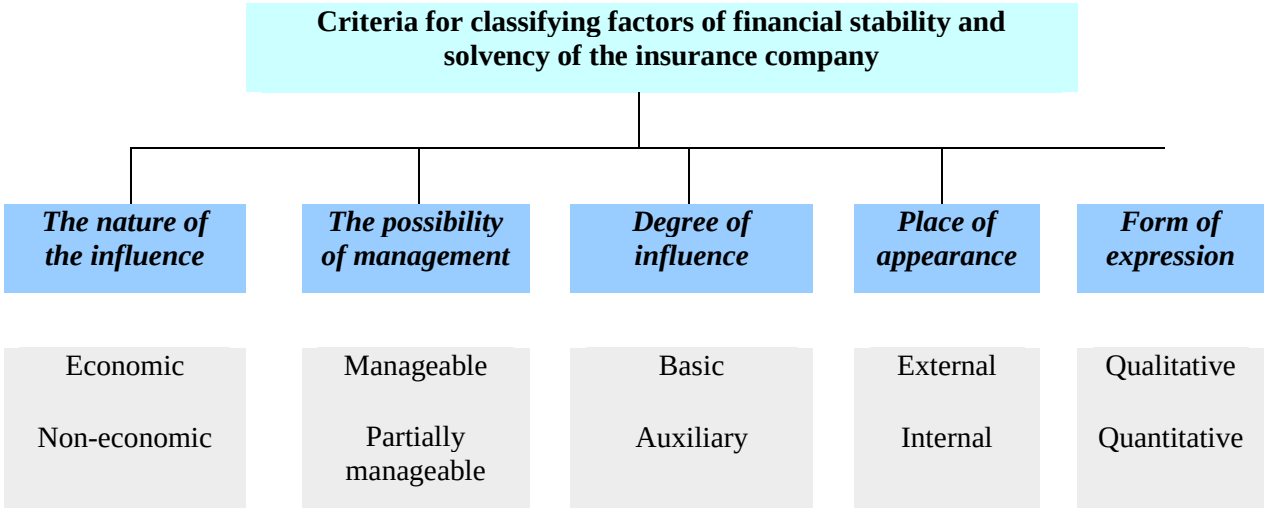

Figure 5. Classification of factors of financial stability and solvency of the insurance company [6, 8, 13]

The given classification is suitable for establishing the objectives of managing the financial stability and solvency of the insurance company because it involves intervention actions, in response to external influences, and certain internal changes (transformations) that will ensure the balance of the external and internal financial environment of the entity.

The problems of assessing the solvency of insurers are, as a rule, of a methodological nature. The existing methodological approaches allow the determination of its retrospective solvency but do not offer the possibility of evaluating the insurer's ability to be solvent in the future, which is very important for this field of activity, since the risks assumed are to be produced. Therefore, both current solvency and estimates of future solvency are important to an insurer. The problems related to the management of the insurer's solvency are relevant not only for the insurers themselves but also for the entire economy, taking into account their role and the propagation of their effect. Thus, the supervision of insurers' solvency implies *ex-post* monitoring and *a priori monitoring.*

Ex-post monitoring of solvency involves prudential supervision measures by the supervisory authorities during the period of activity of the insurer, including during the restructuring process of the company. The object of the monitoring is the tariff policy for insurance services, compliance with the rules in force, the quality of insurance products, etc. [13].

The *a priori* solvency monitoring method applies both at the company level and for certain risks. Such an approach was applied during a period in Switzerland, Korea, USA, but with the development of information technologies, especially the penetration of artificial intelligence, this method is abandoned. Following the adoption of the third generation of insurance directives, all EU member states have implemented *ex-post monitoring* [13]. The OECD's Insurance and Private Pensions Committee (IPPC) provides a set of analytical tools and indicators used in insurance regulation and supervision, as well as for policy-making purposes for the insurance sector. Ex-post monitoring is implemented by applying several models, which are continuously developed. The most established researched and applied models are *the fixed rate model* and *the risk-based model* (Risk Based Capital - RBK) [16, page. 218].

In our opinion, the assessment of the solvency of insurance companies is based on two approaches:

- calculation of the solvency margin (EU countries, Republic of Moldova);
- concept of venture capital (USA, Canada, Japan, Australia, Korea, etc.).

The first approach assumes that, ideally, the payment obligations of the insurer must be covered by the amount of insurance reserves. However, the impact of market factors may result in additional funds being drawn to pay claims. In the given situation, the insurer guarantees with its own capital the honoring of the obligations towards the insured. The second approach is based on the concept of venture capital. Adopting this approach requires the use of complex models for calculating the required capital for each of the main risk categories faced by insurers. For example, in life insurance,

models are applied that consider four types of risk: asset risk, insurance risk, interest rate risk and business risk.

In Romania, insurance companies have the right to apply partial or full internal models approved by the Financial Supervisory Authority for the following situations:

- calculation of the total value of the Solvency Capital Requirement calculated using a partial internal model, the scope of which includes credit risk included in both market risk and counterparty risk - at the available aggregation level - expressed as a percentage of the total amount of the Solvency Capital Requirement.
- partial or full model for calculating the solvency capital requirement.
- internal model whose scope covers credit risk in both market risk and counterparty risk.

From the moment the legal provisions were introduced in 2016 to the situation at the end of 2022 in Romania, only 3 insurance companies used a partial internal model for calculating the solvency capital requirement, the other companies used standard formulas.

From Figure 6 . the upward trend of the Solvency Capital Requirement (SCR) and the Minimum Capital Requirement (MCR) is evident. This fact reflects the consolidation of the insurance market in Romania.

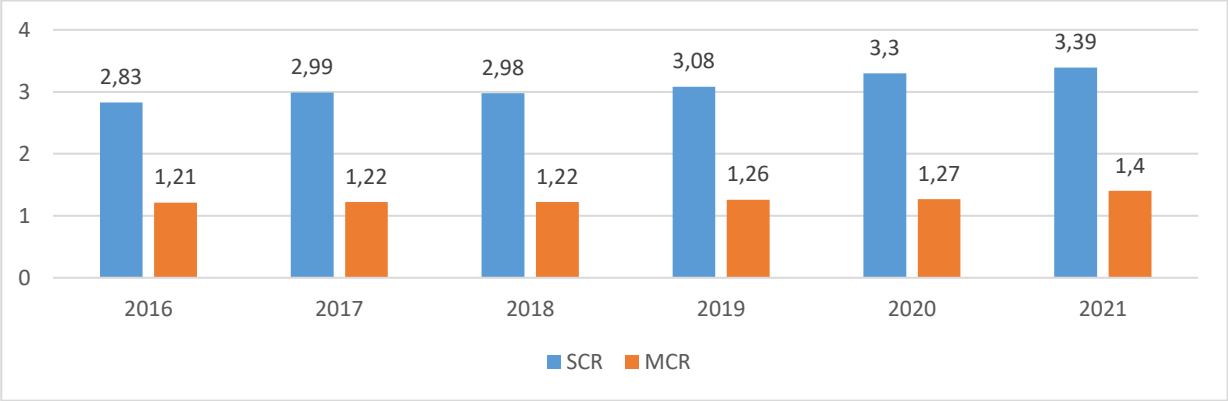

Figure 6. Evolution of the solvency capital requirement (SCR) and the minimum capital requirement (MCR) of insurance companies in Romania, billion lei (2016-2021)

Source: Systematized by the author based on the reports of the Financial Supervisory Authority

The value of own funds eligible to cover the solvency capital requirement at the end of December 2021 was 6.2 billion lei, 0.6% less than the value recorded on December 31, 2020 and an increase of 34.7 per cent compared to the year 2016.

Table 1. Distribution of insurance companies in Romania according to the SCR rate, coef.

SCR Rate Variation Ranges	2017		2018		2019		2020		2021		2022	
	No. of socie ties	Freq uenc y, %	No. of socie ties	Freq uenc y, %	No. of socie ties	Freq uenc y, %	No. of socie ties	Freq uenc y, %	No. of socie ties	Freq uenc y, %	No. of socie ties	Freq uenc y, %
1.0 – 2.0	14	51.85	14	58.33	13	56,58	13	50.0	16	64.0	14	58.33
2.0 – 3.0	6	22,22	6	25.0	4	17.39	9	34.62	5	20.0	7	29.17
3.0 – 4.0	5	18.52	4	16.67	4	17.39	2	7.69	2	8.0	2	8.33
SCR rate >4.0	2	7.40	0	0	2	8.70	2	7.69	2	8.0	1	4.17
Total	**27**	**100.0**	**24**	**100.0**	**2. 3**	**100.0**	**26**	**100.0**	**25**	**100.0**	**24**	**100.0**

Source: author's calculations

The Solvency II solvency regime imposes tougher solvency requirements on insurers, which must establish provisions for market, credit and operational risks. Solvency II takes historical data into account, but factors that may affect future performance are also taken into account. The solvency of insurers can also be evaluated with the help of relative indicators: a) MCR rate and b) SCR rate.

The distribution of insurance companies in Romania according to the SCR rate is presented in Table 1.

The analysis carried out shows that the highest share is held by companies that have an SCR rate with a value in the range of 1-2. It is the small share of those who have values higher than 3 and 4. This is explained by the small number of companies that practice only life insurance.

Table 2. Distribution of insurance companies in Romania according to the MCR rate, coef.

SCR Rate Variation Ranges	2017		2018		2019		2020		2021		2022	
	No. of socie ties	Freq uenc y, %	No. of socie ties	Freq uenc y, %	No. of socie ties	Freq uenc y, %	No. of socie ties	Freq uenc y, %	No. of socie ties	Freq uenc y, %	No. of socie ties	Freq uenc y, %
1.0 – 2.0	9	33,33	8	33,33	5	21.74	8	30.77	8	32.0	4	16.67
2.0 – 3.0	5	18.52	5	20.83	5	21.74	5	19.23	5	20.0	7	29.17
3.0 – 4.0	6	22,22	2	8.33	5	21.74	4	15.38	2	8.0	4	16.67
4.0 – 6.0	3	11,11	5	20.83	3	13.04	4	15.38	5	20.0	4	16.67
6.0 – 8.0	1	3.70	3	12.5	2	8.70	3	11.54	4	16.0	3	12.5
MCR rate >8.0	3	11,11	1	4.17	3	13.04	2	7.69	1	4.0	2	8.33
Total	**27**	**100.0**	**24**	**100.0**	**2. 3**	**100.0**	**26**	**100.0**	**25**	**100.0**	**24**	**100.0**

Source: author's calculations

The distribution of insurance companies in Romania according to the MCR rate indicates a higher rate of companies that fall into the first two grouping intervals, so they have values between 1 and 3 (more than 50 per cent of the companies).

An important criterion of insurers' solvency is the structure of eligible own funds to cover the Solvency Capital Requirement (SCR) and to cover the Minimum Capital Requirement (MCR). Thus, according to the provisions of Directive 2009/138/CE [50], own funds eligible to cover the solvency capital requirement can fall into one of 4 categories:

Rank 1 – unrestricted; Rank 1 – restricted; Rank 2; Rank 3. Own funds eligible to cover the minimum capital requirement can only fall into the first three categories (tier 1 and tier 2).

Table 3. The structure of Romanian insurers' own funds eligible to cover solvency capital requirements (SCR) and minimum capital requirements (MCR), %

Period	Rank 1 – unrestricted	Rank 1 – restricted	Rank 2	Rank 3
Eligible own funds to cover Solvency Capital Requirement (SCR)				
2016	90	1	7	2
2017	92	1	5	2
2018	89	2	6	2
2019	94	1	3	2
2020	92	1	6	1
2021	91	3	5	1
Eligible own funds to cover the minimum capital requirement (MCR)				
2016	99	1	1	n/a*
2017	97	2	1	n/a
2018	98	1	1	n/a
2019	98	1	1	n/a
2020	98	1	1	n/a
2021	98	1	1	n/a

**n/c* (not calculated)

source: author's calculations.

Based on the data systematized by the author from the ASF reports for the period 2016-2021, the structure of eligible own funds was analyzed to cover the solvency capital and minimum capital requirements. According to the Solvency II regulations, the liquidity ratio is calculated differently for non-life insurance and for life insurance. The values of this rate are different, considering the particularities of these two types of insurance. In Table 4, data are systematized on the liquidity coefficient at the insurance market level in Romania and the placements of availabilities.

Table 4. The investment portfolio in liquid assets of insurers in Romania to ensure liquidity.

Period	Government bonds (million lei)	Municipal bonds (million lei)	Securities traded (million lei)	Deposits (million lei)	Current account and cash register (million lei)	Short-term obligations (million lei)	Liquidity ratio
General insurance							
2015	3577	47	251	634	360	2431	2.00
2016	4647	47	358	503	274	2272	2.57
2017	5016	46	328	518	559	2662	2.43
2018	4782	38	327	704	620	2765	2.34
2019	4726	34	414	441	921	2917	2.24
2020	5329	27	374	454	914	2982	2.38
2021	6049	27	595	866	341	3354	2.35
Life insurance							
2015	3124.3	64	1257	360	55	881	5.46
2016	2823	64	1249	342	78	899	5.07
2017	3363	65	1293	251	80	1017	4.97
2018	3537	62	1286	185	144	1147	4.55
2019	3830	61	1435	224	167	1286	4.44
2020	4616	64	1457	163	189	1393	4.66
2021	4420	60	1618	249	228	1671	3.94

Source: systematized by the author based on ASF reports.

The analysis carried out allows us to conclude that insurance companies in Romania prudently manage liquidity risk, respecting the dispersion of investments and prudence in the selection of financial instruments. Also, the investment policy can be appreciated as prudent, with the principle of safety prevailing over the shareholders' appetite for profit.

Insurance companies periodically perform sensitivity tests to assess the ability to comply with liquidity requirements, as well as stress tests for asset liquidity, unforeseen payments, etc.

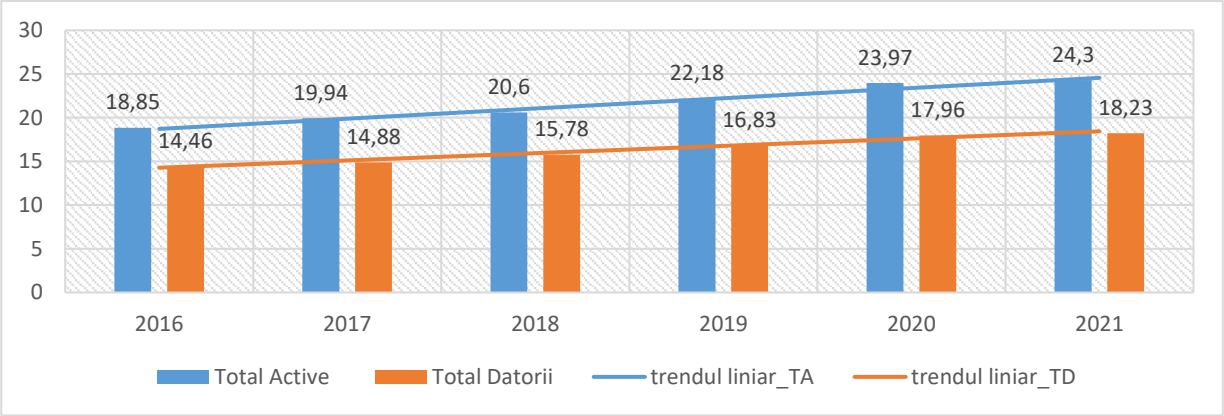

Figure 7. Evolution of total assets and liabilities of insurance companies in Romania, billion lei (2016-2021)

Source: systematized by the author based on data from the reports of the Financial Supervision Authority for the period 2015-2021.

The equations of the linear trend for the value of total assets (TA) and total liabilities (TD) are as follows:

$$TA_t = 17{,}548 + 1{,}169 \cdot t \qquad R^2 = 0.9743 = 97.43\%.$$

$$TD_t = 13{,}443 + 0{,}8326 \cdot t \qquad R^2 = 0.9771 = 97.71\%.$$

Figure 7 reflects the evolution of the value of assets and total liabilities assessed according to Solvency II requirements. The linear evolution trend of both assets and liabilities correlates perfectly, recording a surplus of assets in relation to liabilities over the entire analyzed period. Thus, we can

consider that solvency is more than a regulatory process, representing for insurers a perspective on how to manage their business, as well as the strategy of capitalizing on the financial potential.

An insurer's ability to be profitable is the guarantor of the company's survival and development. The traditional indicator of profitability in the insurance industry is *the combined ratio*, which is interpreted as an indicator of the performance of the underwriting business and reflects short-term performance.

Such a conclusion also results from the dynamics of the main performance indicators of this field: the degree of penetration and the density of insurance. The density of the insurance premium per inhabitant is an indicator that expresses the scale of use of insurance products by the population. If the density of insurance registered a modest increase, then the downward dynamics of the degree of penetration in recent years clearly reflect the involution of this field with negative macroeconomic implications (Fig. 8.). The insurance density in Romania is about 4 times higher than its level recorded in the Republic of Moldova, a fact that can be explained both by the different level of economic development, the level of income, and other factors. The analysis of insurance density, expressed in euros per capita at the average annual exchange rate for the period 2011 – 2021, allowed us to note a doubling of its level for both countries, the rate of growth being: in Romania – 195.12%, in the Republic of Moldova – 204.6%.

At the same time, the level of this indicator is much lower than the average European level. Compared to the European average of this indicator, the level of insurance density in Romania was only 4% in 2020, and in the Republic of Moldova – 1%. This indicates a potential for the development of insurance in both countries in the European space.

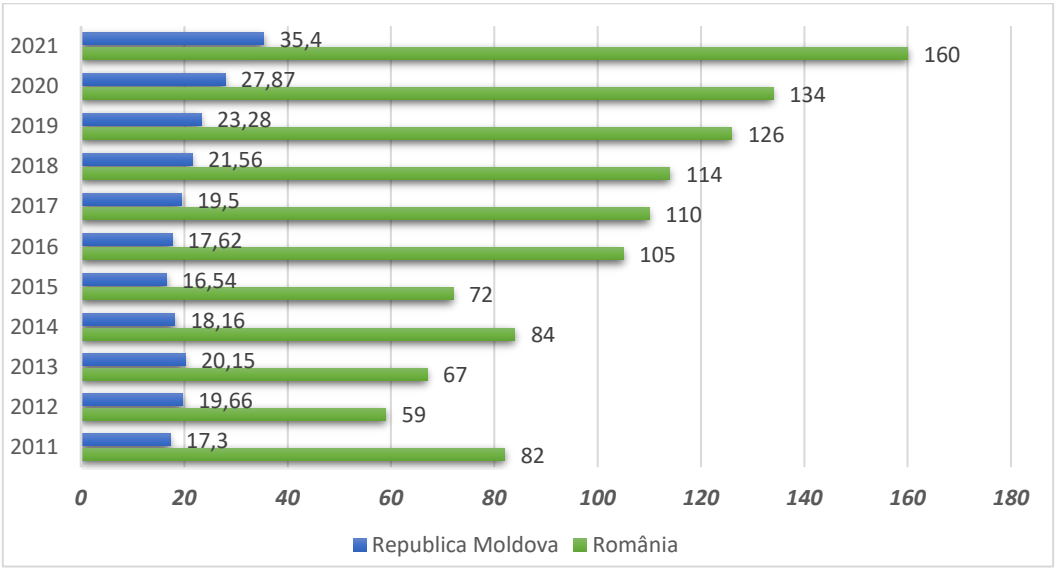

Figure 8. Insurance density, monetary units per capita, Euro/Capita

Source: elaborated by the author: the data for Romania - from the EIOPA Data Bank [17] and ASF reports; the data for the Republic of Moldova were calculated by the author based on CNPF reports and the average annual MDL/euro exchange rate; *RON/capita; **MDL/capita.

An important role in the evaluation of insurance performance belongs to the degree of penetration of insurance in the economy - a synthetic indicator that reflects the contribution of the insurance sector to the creation of the gross domestic product and which is calculated as a ratio between the volume of direct gross insurance premiums and the gross domestic product obtained in a certain period.

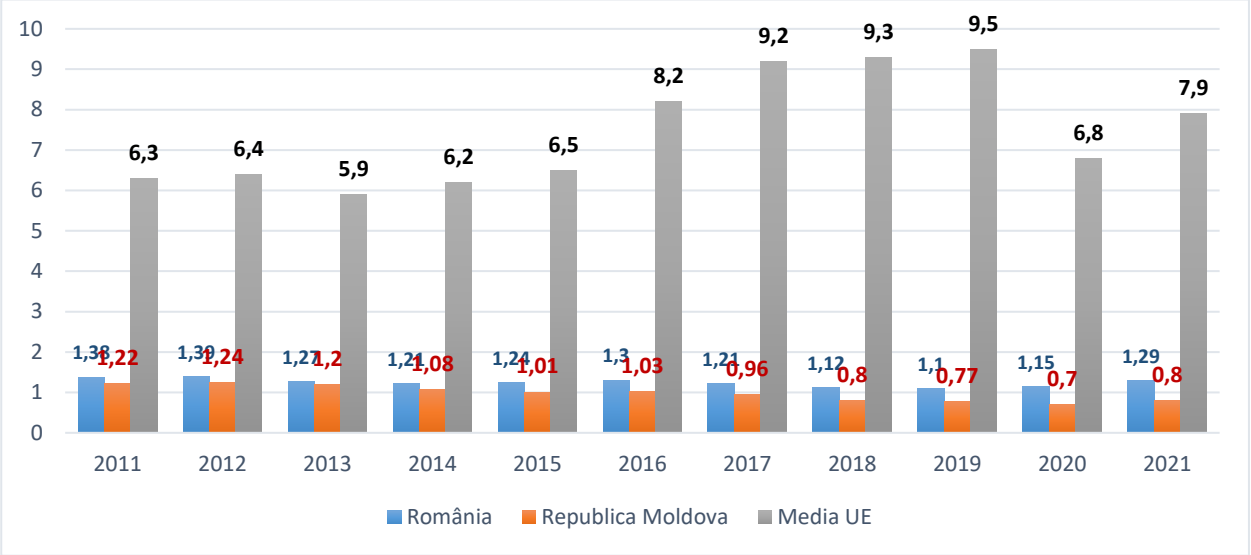

Figure 9. **Insurance penetration rate, % in GDP**

Source: reports of the Financial Supervision Authority for the period 2011 – 2021.

The degree of insurance penetration in Romania is lower than that recorded by developed countries (for example, the average of this indicator in EU countries at the level of 2020 was 6.8%), which reflects the untapped potential that insurance has in the Romanian economy. At the same time, the comparative analysis of the indicator for Romania and the Republic of Moldova highlighted the gap between the countries, in the Republic of Moldova the level of this indicator being sub-unit and lower than the level in Romania. (Fig. 9). If the density of insurance registered a modest increase, then the downward dynamics of the degree of penetration in the last 10 years clearly reflect the evolution of this field with significant implications on economic growth.

Chapter 3 "Development of tools for complex analysis of insurance activity and assessment of insurance efficiency" brings a new vision to analytical tools for analysis of insurance activity and assessment of insurance efficiency.

One of the tools identified by the author is the Francone&Romanet matrix model for insurance analysis and sizing the financial potential as a useful tool for improving the decision-making process, the regulation of the insurance market is oriented towards ensuring the efficiency of the insurer's capital, the pursuit of a balanced positive result of insurance and financial operations. The advantages of this model consist in the coordination of the underwriting and investment processes, presenting a forecasting framework for possible insurance market development scenarios. The comparative analysis of aggregated data for a period of seven years allowed determining the attractiveness of Romania's insurance sector from the perspective of development potential. The consolidated result of the investment and insurance activities allows the harmonization of both aspects from a managerial perspective. The insurance industry targets operational (underwriting) efficiency and financial efficiency. This will allow decision-makers to significantly influence both lines of business. Through the integrated analysis of the insurance field in Romania, the research provides an aggregated picture of the financial position of insurance companies. We consider the obtained results a benchmark for regulatory authorities. The findings can be used to propose a systemic framework for improving the performance of the insurance industry.

The obtained results show that the strategic matrix model could be considered a useful tool for the government to review its policy and strategy for the future regarding the development of the insurance sector. The Financial Supervisory Authority can assess financial performance, identify drivers and predict their future trends. The matrix can also serve as a diagnostic methodology for detecting financial problems and their reasons.

The theoretical model is based on the matrix of the financial strategy [15], which allows the determination of the "critical path" of the insurer for the future and the measurement of the indicator of the financial development potential, i.e., the determination of the need for financial resources that can be invested in development, respectively will allow to be carried out forecasts of the development

of the insurer's financial potential. The calculations for the insurance market in Romania for the period 2015-2021 are presented in Table 5.

Table 5. Calculated values of PDF, AO and AF indicators for the Romanian insurance market, 2015-2021

Road sign		2015	2016	2017	2018	2019	2020	2021
Financial development potential, million lei	PFD	17342	18602	20125	19647	20827	21182	25857
Underwriting activity (operational), index	aA	-2.04	-0.16	-0.14	-0.20	-0.23	-0.226	-0.227
Financial activity, index	AF	0.04	0.07	0.17	-0.07	0.11	0.06	0.14
Insurer activity index	**AA**	**-2.0**	**-0.09**	**0.03**	**-0.27**	**-0.12**	**-0.17**	**-0.09**

Source: author's calculations

Based on the data in table 5, the matrix of the financial strategy for the insurance sector in Romania was developed (Figure 10.).

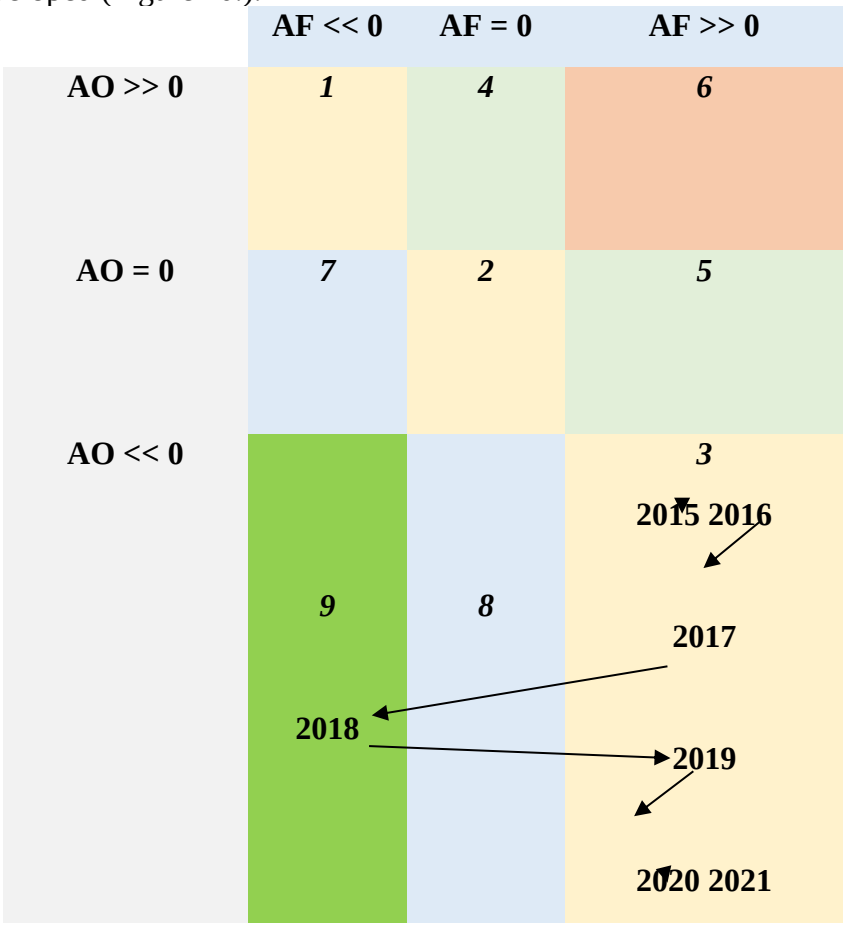

Figure 10. Financial strategy matrix of the Romanian insurance industry (2015-2021) Source: developed by the author according to matrix 3.1. [5]

The strategic matrix forecasting method developed by Franchon and Romanet aims to improve the decision-making process for the regulation of the insurance market, based on determining the efficiency of the insurer's capital. The results provide empirical evidence on the reliability of financial and underwriting (insurance) performance forecasting results in very different markets. The method allows the assessment of the attractiveness of the insurance sector in a certain country from the perspective of the insurance product portfolio (underwriting activity) and the investment portfolio. In this sense, matrix forecasting could be considered a useful tool for authorities to review their policy

and strategy for the future development of insurance. The regulator can assess the financial performance, fix the determinants, and predict their future trends.

The consolidated result of investment and underwriting activities allows the harmonization of both categories of operations from a managerial and regulatory perspective. During the entire analyzed period (2015-2021), except for 2018, the "Insurer activity indicator (AA)" was always in the square with an unbalanced financial position, which indicates the untapped potential of Romanian insurance companies. This is due to the following factors: the collection of insurance premiums for the analyzed period is at a level of balance, but a high degree of surrender in reinsurance is attested, which indicates the inability of insurance companies to comply with insurance obligations.

Further research directions were also identified by extending the differential analysis for life and non-life insurance to identify differences and test the initial research hypotheses. In the same context, we expect to extend the application of the matrix model at the level of insurance companies on a sample of at least 10 companies. This will allow the identification of factors influencing their development strategy to help managers formulate future strategies to be implemented.

As it follows from the analysis carried out in chapter 2 of the thesis, the insurance sector both in Romania and in the Republic of Moldova has potential for development. The analyzed indicators reflect the modest contribution of insurance to economic growth and ensuring the well-being of citizens. An argument in this sense is the conclusion resulting from the clarification of the hypothesis that there is an interdependence between the economic dimension of insurance development expressed by the volume of gross premiums subscribed and the macroeconomic indicator Gross Domestic Product per capita. The obtained results confirm the given hypothesis, as evidence serving the quality tests of the econometric model (3.6.). The interpretation of the parameters of the linear regression model highlighted the fact that the evolution of GDP per capita can be considered decisive for the evolution of the insurance market, providing managers of insurance companies with a useful financial forecasting tool.

The relationship between insurance and economic growth has become a matter of debate both theoretically and empirically. The financial system has been recognized as an important sector in the country's economic growth. Different theories of growth have shown that there is a relationship between the financial system and economic growth. The relationship between insurance and economic growth has been addressed by many researchers, concluding that there is a causal and direct link between insurance and economic growth. The development of insurance and reinsurance businesses is essential to the economic development of any country, as it reduces uncertainty and encourages long-term investment.

To clarify the hypothesis of dependence between the insurance sector in Romania and economic growth at the national level, expressed through the macroeconomic indicator GDP per capita in current prices, we conducted a study with the application of econometric instruments, which demonstrated the positive impact of the evolution of GDP per capita on total insurance and a significant link between them (88.94% - the value of the coefficient of determination).

To demonstrate that the development of insurance depends on the evolution of economic processes, the author formulated the following working *hypothesis*: between the evolution of gross written premiums and the value of GDP per capita expressed in current prices (USD) there is a direct positive connection. To test the hypothesis, the author applied the statistical analysis tools – the Method of Least Squares and the Data Analysis module in Excel. Thus, the linear regression model was developed, in which the dependent variable is the gross premiums subscribed by Romanian insurance companies *(PBS*), and the GDP in current prices per capita, expressed in US dollars, is the independent variable (x). The theoretical model of the linear regression equation has the form:

$$PBS\ A\ b\cdot GDP_{c/l}\varepsilon \quad (3.5.)$$

a – the free term, which determines the PBS value, when the values of all factors (independent variables) are equal to 0.

b – parameter of the regression equation.

ε – random error (deviation);

$GDP_{c/l}$ – independent variable – GDP per capita.

PBS – the dependent factor (variable).

The bifactorial econometric model obtained is expressed by the regression equation (3.6.):

$$PBS = 14.36 + 0.898 \cdot GDP_{c/l} + \varepsilon \quad (3.6)$$

This model will allow estimating the influence of the determining factor of the dynamics of gross premiums subscribed by insurance companies in Romania and will be considered as a framework for empirical verification of the hypothesis stated above. The free term of the model $a = 14.36$ has a positive value and demonstrates the existence of additional factors that influence the dynamics of gross written premiums and whose global impact is positive.

Analyzing the coefficient of the estimated regression model (3.6), we notice that it exerts a positive influence on the dynamics of gross premiums subscribed by insurance companies in Romania: the increase of GDP per capita by one monetary unit (one USD dollar) generates an increase of 0.898 million RON of gross premiums subscribed.

The presented results confirm that the assumptions that were the basis of this model are valid, and the tests carried out confirm the quality of the model, so the volume of gross premiums subscribed by insurance companies is determined by the variation of the independent factor - the value of GDP per capita expressed in current prices (USD).

The methodological analysis of the efficiency of the insurance activity highlighted the fact that a complex approach is necessary, a fact that led to the development of the methodology for evaluating the financial potential of the insurance company, which is understood as the ability to reach a certain level of financial position and performance.

There are three main directions in the development of theories regarding the potential of a company:

1. The potential is a set of resources necessary for the operation and development of the system (resource approach). In this case, the evaluation should be based on an analysis of the quantitative and qualitative characteristics of different types of resources, and their synergistic effect is not considered.

2. Potential is a system of conditions (factors) that ensure the achievement of objectives. Accordingly, the analysis and assessment of individual resource types should be supplemented with indicators of the efficiency of the system as a whole, taking into account control actions.

3. An approach to understanding potential as an ability of the system to solve its tasks and achieve its goals using available resources, which, in addition to the previous approaches, also involves identifying unused reserves of the system and their mobilization. However, the concept of potential requires it to be approached through the prism of measurement, analysis, evaluation and management criteria.

Starting from the need to adopt a strategic vision of the efficiency of the insurance companies activity, as well as the consideration that the basis of its evaluation must be a balanced system of indicators, the efficiency of the activity through the prism of financial management, can be evaluated based on the indicators that reflect the financial potential of the insurance company. To this end:

- the algorithm for evaluating the company's financial potential has been developed.
- the system of financial potential indicators was systematized.
- the applicability of the analysis methodology for assessing the degree of capitalization of the financial potential was developed, and demonstrated, and the methodology applied within the insurance company "Allianz Tiriac Unit Asigurări" SA

The algorithm for evaluating the financial potential of the insurance company is as follows:

STAGE I. ***Evaluation of the elements of the financial potential and determination of their optimal/reference values by groups of indicators of the insurance company***.

For this purpose, 5 defining components (perspectives) of the financial potential of the insurance company were established, represented by 5 blocks of performance criteria (KPI) or variables of the multicriteria model - stated by the author as *Perspectives*:

1. Solvency and liquidity perspective – 4 indicators.
2. Reinsurance activity management perspective – 2 indicators.
3. Customer relationship performance perspective – 5 indicators.

4. Financial performance perspective – 4 indicators.
5. "Investments/Innovations" perspective – 5 indicators.

Each block, *Perspective*, respectively, corresponds to certain performance criteria (KPI) exposed in Table 3.4. from the thesis. In total, the complex model is based on 20 indicators.

Stage II. *Multicriteria evaluation of the components of financial potential*.

As a reference methodology, the component analysis method or the Karhunen-Loeve transformation was used, which was adapted to the specifics of insurance companies [137, page. 221-231 and 140, p. 55-63]. An integral indicator was calculated in the form of a multi-criteria index for evaluating the financial potential for the insurance company "Allianz Tiriac Unit Asigurări SA", previously - with the name of Gothaer Asigurări Reasiguri, for the period 2017 - 2021.

x_{ij} – values of the criterion K_n corresponding to the elements of the financial potential (A_i , B_i , C_i, D_i, E_i) in the t_i year of the analyzed period were considered. All the values of the performance criteria were calculated by the author based on the financial statements of the Insurance Companies. The calculated values of the performance criteria of the financial potential by components are systematized in Table 6.

Table 6. Calculated values of the performance criteria by components of the financial potential of the insurance company "Allianz Tiriac Unit Asigurări SA" for the period 2017 - 2021

	2017	2018	2019	2020	2021	Average value	Mean square deviation
A $_1$	143.0	129.0	167.0	156.0	165.0	152.0	15.97
A $_2$	281.0	338.0	356.0	276.0	364.0	323.0	41.74
A $_3$	3.19	2.39	2.03	1.62	1.60	2,166	0.66
A $_4$	1.58	1.59	1.65	2.11	2.10	1,806	0.274
B $_1$	49.37	41.19	41.24	39.52	33.23	40.91	5.76
B $_2$	37.54	56,67	21.60	34.43	19.92	34,032	14.82
C $_1$	9727.4	9659.3	5894.1	4835.0	4463.1	6915.78	2589.46
C $_2$	50.2	69.1	51.6	66.8	54.2	58.38	8.89
C $_3$	29.0	29.0	12.0	8.0	8.0	17.2	10.89
C $_4$	23.0	19.0	8.0	7.0	7.5	12.9	7.54
C $_5$	20.0	13.0	5.0	6.0	5.5	9.9	6.52
D $_1$	-7.52	-12.37	-6.41	-9.56	-12.08	-9,588	2.66
D $_2$	28.97	25.64	32.74	23.80	22.74	26,778	4.09
D $_3$	-32.34	-61.65	-29.19	-38.32	-42.26	-40,752	12.74
D $_4$	61.0	57.6	56.3	58.6	59.9	46,602	25074
It's $_1$	44.01	49.4	43.65	79.32	85.65	60,406	20.41
It's $_2$	90.97	94.71	143.7	86,47	100.95	103.36	23.17
It's $_3$	4.28	3.82	6.55	7.32	5.23	5.44	1.48
It's $_4$	60.9	63.74	56.62	74.54	75.16	66,192	8.30
It's $_5$	2.44	2.89	4.75	4.20	3.10	3,476	0.96

Source: author's calculations.

2. It was calculated s_j – the mean square deviation of K_n rates.

3. The standardized values of the performance criteria were calculated:

$$K_n = \frac{x_{ij}}{s_j} \qquad (3.19.)$$

4. As reference/benchmark values (x_j^*) the normative values of the performance criteria of the financial potential or the average values in the insurance field are taken. If such values are missing, then the best value of the indicator achieved by the insurance company during the analyzed period will be taken as the reference value. In the elaborated model, the best values obtained by the insurance company during the analyzed period were used, as well as some values considered optimal.

5. The standardized values of the values considered as benchmarks were calculated:

a) if the standard tends to the maximum, the formula will be applied:

$$K_j^* = \frac{x_j^*}{s_j} \quad (3.20)$$

b) if the standard tends to the minimum, the reverse ratio will be applied:

$$K_j^* = \frac{s_j}{x_j^*} \quad (3.21)$$

6. The weights of the indicators included in the integral index calculation model were calculated according to the relationship:

$$a_j = \frac{K_j^*}{\sqrt{\sum_{j=1}^{n}\left(K_j^*\right)^2}} \quad (3.22)$$

7. The values of the potential function for each year were calculated according to the relationship:

$$y_t = \sum_{j=1}^{n} a_j \cdot K_{ij} \quad (3.23)$$

8. The standard value of the potential function is calculated according to the formula:

$$y_t^* = \sum_{j=1}^{n} a_j \cdot K_j^* \quad (3.24)$$

9. The complex value of the financial potential was calculated based on an integrated index for each year:

$$P_t = \frac{y_t}{y_t^*} \cdot 100 \quad (3.25)$$

The calculation of the financial potential and the evolution in dynamics is presented in Table 7.

The multi-criteria index of the financial potential of the insurance company must tend towards the level of 100%. The closer this index is to the maximum value (100%), the higher the efficiency of its activity. The unutilized reserve of the financial potential is calculated as the difference between 100% and the value of the integral coefficient of the financial potential. Thus, we can conclude that the financial potential of the analyzed companies has been capitalized at a high level, there are untapped reserves to increase the efficiency of the financial management of these companies.

Table 7. Multicriteria evaluation of the level of capitalization of the financial potential of the insurance company "Allianz Tiriac Unit Asigurări SA"

	2017	2018	2019	2020	2021
$a_1 A_1$	21.30	19,218	24,877	23,238	24.57

$a_2 A_2$	6.51	7,831	8,247	6,394	8.43
$a_3 A_3$	0.672	0.503	0.427	0.341	0.337
$a_4 A_4$	14.4	14,496	15,043	19,237	19,144
$b_1 B_1$	13,328	11,12	11,338	10,669	8.97
$b_2 B_2$	1,560	2,355	0.897	1,431	0.827
$c_1 C_1$	1,866	1,408	1,242	2,373	0.829
$c_2 C_2$	0.005	0.008	0.006	0.007	0.006
$c_3 C_3$	2,365	2,365	0.978	0.653	0.653
$c_4 C_4$	5,649	4,667	1,965	1,719	1,843
$c_5 C_5$	7.6	4,941	1.9	2.28	2,089
$d_1 D_1$	-0.693	-1.139	-0.59	-0.88	-1.112
$d_2 D_2$	19.12	16,926	21,613	15,711	15.01
$d_3 D_3$	-0.56	-1.069	-0.506	-0.665	-0.73
$d_4 D_4$	0.021	0.02	0.02	0.02	0.021
$it's_1 it's_1$	0.413	0.465	0.411	0.746	0.805
$e_2 E_2$	6.36	6,622	10,047	6,046	7,058
$it's_3 it's_3$	2,982	2,661	4,563	5,099	3,643
$it's_4 it's_4$	19.94	20.87	18,542	24.41	24,611
$it's_5 it's_5$	2,621	3,103	5,101	4,511	3,329
y_t^*	**125,459**	**117,371**	**126,121**	**123.34**	**120,333**
P_t	***81.26***	***76.02***	***81.69***	***79.89***	***77.94***

Source: author's calculations

Stage III. ***Analysis and interpretation of the results of the assessment of financial potential***

The systematization of the results of the multicriteria evaluation of the level of capitalization of the financial potential are represented in the form of a structural diagram (Fig. 11.).

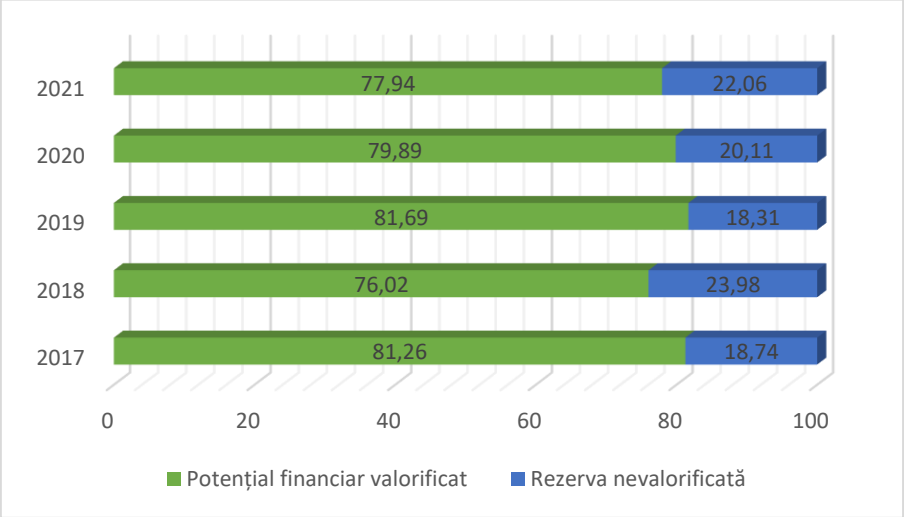

Fig. 11. The dynamics of the multi-criteria index of the capitalization of the financial potential of the insurance company "Allianz Tiriac Unit Asigurări SA" in the period 2017 - 2021, %

Source: developed by the author

Based on the multi-criteria analysis of the components and the assessment of the level of capitalization of the insurance company's financial potential, a strategy can be developed, and the set of measures and actions determined to make the insurance activity more efficient.

The algorithm for developing the financial strategy for the efficiency of the insurance company's activity based on the untapped reserves of the financial potential is as follows:

- at a *low level (up to 50%)* of the capitalization of the financial potential, it will tend to a maximum realization of the internal reserves on its components without resorting to external investments.
- at an *average level (50-75%)* of capitalization of the financial potential, the internal reserves will be mobilized with the attraction of investments according to the principle "the rate of growth of the integral index of the capitalization of the financial potential exceeds the gradual increase of investments".
- in the case of a *high level* (over *75 percent*) of the financial potential utilization, strategies aimed at innovative transformations of operational processes, of insurance products will be developed based on investment projects substantiated from an economic and financial point of view.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

The research carried out as part of the doctoral thesis has allowed the solution of the scientific problem that consists in the theoretical and methodological foundation of the analysis of the efficiency of insurance as a field of economic and financial activity, which has confirmed the need for a systemic approach to it through the prism of the level of capitalization of the financial potential of insurance companies, considered the determinant of insurance efficiency at all levels (microeconomic, sectoral and macroeconomic). Solving this scientific problem has led to the following conclusions:

1. At the current stage of the development of management theory and practice, a trend of reorientation from traditional management systems to strategically oriented ones is clearly emerging. This trend also applies to the insurance sector. The main difference between these two systems is the management tools applied. The introduction of the principles of strategically oriented management in the system of evaluating the efficiency of the insurance activity requires the need for new techniques and management methods. This also refers to the need for a proper assessment of efficiency. The need for new methodological approaches to assess the effectiveness of insurance also results from the complex nature of the insurance concept.
2. Insurance science has researched in detail the nature of insurance, defined its characteristics as an economic-financial and legal category, and its functions and role. At the same time, we found that insurance is an effective tool for managing social risks, but it is not sufficiently applied in the population protection system in Romania and the Republic of Moldova. At the current stage, we will not come across a clear definition of the concept of "insurance efficiency", this being defined from the perspective of the insurers, the insured, their impact on society, as well as through the prism of their dimension (legal, economic, financial, social, etc.). As a result of the research undertaken, certain scientific-methodological results have been obtained, which clarify the essence of the concept and the role of insurance as an element of the financial system and in the economy. The research carried out provides a theoretical basis for the fact that the economic and social importance of insurance consists not only in compensating for the damages resulting from an insured event, thus ensuring the stability, security and safety of the entrepreneurial activity, increasing the competitiveness of economic entities, but also in the fact that it is an area of business, efficiency and level of development on which the development of other areas of business depends on. At the same time, as an important element of the financial system, the results of the activity of insurance companies contribute to the formation of the GDP and the improvement of the social sphere.
3. A comparison of the insurance efficiency evaluation methods led to the conclusion that the insurance efficiency evaluation is relevant in terms of the functional criterion, i.e. the 4 basic functions of insurance, identified in Chapter 1 of the thesis. We consider the evaluation of the social efficiency of insurance to be relevant and timely, as it provides important methodological support for the evaluation of the efficiency of insurance from the perspective of saving public money and citizens' resources. This delimitation allowed us to establish three interdependent evaluation contexts:

- Efficiency of insurance as a resource transformation mechanism (at the level of the insurance company – the microeconomic context).
- Effectiveness of insurance as a mechanism for achieving the objectives of individuals and groups (individual level).
- Efficiency of insurance as a field of business, expressed in indicators of the development of the insurance sector (sectoral level).
- Effectiveness of insurance as a protection mechanism used by the state for its citizens and for economic growth (macroeconomic level).

4. An important aspect, emerging from this research, is that the insurer is at the center of insurance relations, i.e., the ability of the insurance company to form and use its resources efficiently through effective management is the basic source of insurance efficiency. The most comprehensive characteristic of the activity of an insurance company is its financial potential, which allows its evaluation to be accepted as a criterion of insurance efficiency. Thus, the activity of insurance can be considered a system in which the processes carried out within economic-financial relations influence the financial structure, position, and performance of the insurance company in order to achieve the strategic objective of growth by making the most of its financial potential.
5. Thus, the ability of the insurance company to reach and maintain over a period a certain level of financial situation (financial position and financial performance), taking into account the available financial potential, can be considered as the basic criterion for evaluating the efficiency of the insurance company. From this definition, two aspects of the insurer's efficiency can be deduced: static and dynamic. The static component characterizes the degree to which the company reaches the required level of the financial situation, expressed in indicators of financial position and performance at a given moment. The dynamic component characterizes the company's ability to maintain and improve this level in the future.
6. The process of evaluating the efficiency of the activity, but also the performance of the financial management of the insurance company, involves fundamental methodological problems: the principled commensurability of efficiency; degradation of performance indicators; and extrapolation validity. The research of traditional and multi-criteria methods of devaluating the activity efficiency revealed that the degree of minimization of the negative influence of these three problems in the analyzed methods and models is different. The best results are obtained in models based on modern mathematical methods, among which the Principal Component Analysis (PCA) stands out, which eliminates these disadvantages.
7. The research undertaken allowed us to identify two key aspects of assessing the efficiency of the insurance activity: a) evaluation of the operational efficiency of the underwriting activity by means of matrix analysis - as a controlling tool for maintaining profitability and solvency at a sufficient level; b) evaluation of the capitalization level of the company financial potential - as a complex criterion of the achieved insurance company efficiency and of the perspective efficiency (it makes it possible to determine the untapped potential). The application of these methods eliminates the disadvantage of traditional efficiency evaluation methods.
8. As a result of integrating the matrix method, the component analysis method, the approach to the insurance activity as a system, and the financial potential as a determinant of the efficiency of insurance activity, the set of methodological tools was developed to assess the development potential of insurance at the level of the company, at the sectoral level, but also through the lens of the contribution to economic growth. The calculations performed based on data for the entire insurance sector in Romania (matrix analysis), as well as for the insurance company "Allianz Tiriac Unit Asigurări SA" for the period 2017 - 2021, confirm the applicability in practice of the recommended method, which is justified by a series of advantages:
   a) It eliminates methodological issues: principled commensurability of efficiency; degradation of performance indicators, and extrapolation validity.
   b) It considers the specifics of the insurance company's activity and its relationships with other elements.
   c) It takes into account the strategic orientation of insurance financial management.

d) It is based on five basic components of financial potential: a) solvency and liquidity; b) management of the reinsurance activity; c) performance in customer relations; d) financial performance and e) investment and innovation activity performance.

9. The analysis carried out shows that the economic dimension of insurance development in Romania is given by the macroeconomic indicator Gross Domestic Product in current prices per capita. The results of the research confirm that the evolution of gross premiums written by insurance companies is determined by the variation in the level of GDP per capita expressed in current prices (US dollars). The interpretation of the parameters of the linear regression model highlighted the extent to which the factorial variable can be considered decisive for the evolution of the insurance market, providing the authorities with a useful forecasting tool.

The solution of the scientific problem and the analysis carried out in the second chapter of the thesis led to the formulation of the following recommendations:

1. To carry out an efficient activity over time, it is necessary for managers of insurance companies to be concerned with both the operational efficiency (of the current activity), which is evaluated using traditional indicators, and the perspective efficiency, which is expressed by indicators of a complex nature. For this, in addition to traditional methods of assessing and managing insurance activity, strategic management models must be implemented, such as the strategic analysis matrix proposed by the French scholars Franchon and Romanet. These methods can be adapted to the specifics of the company, considering the factors of the company's internal and external environment.
2. It is recommended that policymakers and insurance company managers use the econometric model presented in paragraph 3.2. as a useful tool for making predictions on the evolution of the insurance market, developing strategies, and formulating the necessary set of measures and actions for the efficiency and development of insurance, considering its role in the economy.
3. We consider financial potential as a determinant of the efficiency of an insurance company's activity. In the given context, we recommend a quarterly evaluation of the level of capitalization of financial potential using the algorithm developed by the author in paragraph 3.3. This will allow managers to self-assess as well as review strategic objectives. It is important for an insurance company to monitor the performance of its activities, as well as to determine the path for further development of regional insurance markets based on a system of indicators, considered as KPIs for its management.
4. In the absence of information on the strategic vision of the insurance company (as is the case with companies in the Republic of Moldova, but also with some insurers from Romania), this methodology can be used by potential investors, banks, other insurance companies, clients to evaluate and monitor the level of capitalization of the financial potential and to give an assessment of operational and prospective efficiency. The significance of the component analysis method consists in a comprehensive study of the problem of evaluating insurance from the standpoint of its efficiency.

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ADNOTARE

Lom Ionuț-Valentin: „Creșterea eficienței asigurărilor prin valorificarea potențialului financiar al societăților de asigurare”, teză de doctor în științe economice, specialitatea 522.01 Finanțe, Universitatea de Stat din Moldova, Chișinău, 2023

Structura tezei: introducere, trei capitole, concluzii generale și recomandări, bibliografie din 164 de titluri, 18 anexe. Conținutul este expus pe 131 pagini text de bază, conține 28 tabele, 31 figuri și 34 formule. Rezultatele obținute sunt publicate în 20 lucrări științifice.

Cuvinte-cheie: asigurare, eficiență, solvabilitate, model, Solvency II, metoda matriceală, potențial financiar, analiza multicriterială, analiza pe componente, piața de asigurări, relații financiare.

Domeniul de studiu: 522.01 Finanțe.

Scopul cercetării constă în dezvoltarea și perfecționarea cadrului teoretico-metodologic existent al evaluării eficienței asigurării prin identificarea rezervelor nevalorificate ale potențialului financiar a societăților de asigurare.

Obiectivele cercetării: clarificarea conceptului și rolului asigurărilor ca componentă a sistemului financiar; delimitarea stadiului actual al cunoașterii privind eficiența asigurărilor și compararea metodelor de evaluare a acesteia; cercetarea componentelor potențialului financiar al asigurărilor din perspectiva identificării rezervelor de eficientizare a valorificării acestuia; analiza comparativă a evoluției pieței asigurărilor în România și Republica Moldova; evaluarea eficienței și identificarea potențialului financiar prin prisma conformității cu cerințele de solvabilitate și stabilitate; dezvoltarea instrumentarului analitic și previzional al evaluării eficienței asigurărilor.

Noutatea și originalitatea științifică o constituie următoarele elemente: delimitarea conceptual-metodologică a eficienței asigurărilor prin prisma criteriului functional; a fost realizată analiza comparativă a pieței de asigurări din România și Republica Moldova; elucidarea interdependenței dintre evoluția pieței asigurărilor și creșterea economică prin elaborarea unui model econometric; analiza strategică a sectorului de asigurări din România cu aplicarea matricei Franchon și Romanet; elaborarea modelului integrat de evaluare a valorificării potențialului financiar ca indicator complex al eficienței activității societății de asigurare.

Importanţa teoretică a cercetării în cadrul prezentei teze rezidă în concretizarea conceptului și metodologiei de evaluare a eficienței asigurărilor și determinarea componentelor potenţialului financiar al companiei de asigurări. Concluziile și recomandările prezentate în teză prezintă valoare teoretică pentru cunoașterea și evaluarea potențialului financiar al societăților de asigurări și dezvoltării sectorului de asigurări în general.

Valoarea aplicativă a rezultatelor cercetării constă în aplicarea rezultatelor analizei comparative a eficienței asigurărilor în adoptarea unor decizii și elaborarea măsurilor de dezvoltare a acestora în România și Republica Moldova. De asemenea, managerii financiari ai societăților de asigurări pot utiliza ca instrument managerial modelul analitic al evaluării valorificării potențialului financiar pentru a da aprecieri acțiunilor sale manageriale și a stabili indicatori strategici de creștere a performanței. Modelul econometric al dependenței evoluției sectorului asigurărilor de creșterea economică poate servi drept instrument pentru organele de supraveghere și reglementare pentru formularea unor viziuni strategice privind dezvoltarea sectorului de asigurări.

Aprobarea rezultatelor ştiinţifice. Rezultatele cercetării la tema tezei sunt publicate în 17 lucrări ştiinţifice cu un volum total de 4,85 coli de autor, dintre care 13 – au fost communicate la foruri științifice naționale și internaționale. De asemenea, rezultatele obținute sunt aprobate prin Certificatul de innovator și Actul de implementare la Societatea de asigurare „Allianz-Tiriac Unit Asigurari” S.A., anterior cu denumirea Gothaer Asigurari Reasigurari S.A. (România). Unele rezultate vor fi utilizate în procesul de didactico-metodic la disciplina „Asigurări și reasigurări”.

ANNOTATION

Lom Ionuț-Valentin: «Increasing insurance efficiency by valorising the financial potential of insurance companies», PhD thesis in Economics, specialty 522.01 Finance, Moldova State University, Chisinau, 2023

Thesis Structure: introduction, three chapters, general conclusions and recommendations, references containing 164 titles, 18 appendices. The content is laid out on 131 pages of basic text, it contains 28 tables, 31 figures and 34 formulae. The results are published in 20 scientific papers.

Keywords: insurance, efficiency, solvency, model, Solvency II, matrix method, financial potential, multi-criteria analysis, component analysis, insurance market, financial relations.

Field of Study: 522.01 Finance.

The purpose of the research is to develop and refine the existing theoretical and methodological framework for assessing insurance efficiency by identifying the unused reserves of the financial potential of insurance companies.

Objectives of the research: clarification of the concept and the role of insurance as a component of the financial system; delimitation of the current state of knowledge on insurance efficiency and comparison of methods for its evaluation; research on the components of the financial potential of insurance from the perspective of identifying the reserves for making its exploitation more efficient; comparative analysis of the insurance market evolution in Romania and the Republic of Moldova; evaluation of efficiency and identification of financial potential in terms of compliance with solvency and stability requirements; development of analytical and forecasting tools for the evaluation of insurance efficiency.

The novelty and originality of the research are constituted by the following elements: conceptual and methodological delimitation of insurance efficiency through the functional criterion; comparative analysis of the insurance market in Romania and the Republic of Moldova was performed; clarification of the interdependence between the evolution of the insurance market and economic growth through the development of an econometric model; strategic analysis of the Romanian insurance sector with the application of the Franchon and Romanet matrix; development of the integrated model to evaluate the exploitation of financial potential as a complex indicator of insurance company efficiency.

The theoretical importance of the research in this thesis lies in the concretization of the concept and methodology of evaluating insurance efficiency and determining the components of the financial potential of the insurance company. The conclusions and recommendations presented in the thesis are of theoretical value for understanding and assessing the financial potential of insurance companies and the development of the insurance sector in general.

The applied value of the research results lies in the application of the results of the comparative analysis of insurance efficiency in the adoption of decisions and the elaboration of insurance development measures in Romania and the Republic of Moldova. At the same time, CFOs of insurance companies can use as a managerial tool the analytical model of financial performance evaluation in order to assess their managerial actions and establish strategic performance growth indicators. The econometric model of the dependence of the development of the insurance sector on economic growth can serve as a tool for supervision and regulatory bodies to formulate strategic visions for the development of the insurance sector.

Approval of Scientific Results. The main aspects of the research have been presented in scientific papers in national and international journals of different categories, as well as during national and international scientific events. The research results on the thesis topic are published in 20 scientific papers with a total volume of 4.85 author sheets. The results obtained are also approved by the Certificate of Innovator and the Deed of Implementation at the insurance company "Allianz-Tiriac Unit Asigurari" S.A., formerly Gothaer Asigurari Reasigurari S.A. (Romania). Some results can be used in the didactic and methodical process in the subject "Insurance and reinsurance".

ANNOTATION

Lom Ionuț-Valentin: "Accroître l'efficacité de l'assurance en valorisant le potentiel financier des compagnies d'assurance", thèse de doctorat en sciences économiques, spécialité 522.01 Finance, Université d'État de Moldavie, Chisinau, 2023

Structure de la thèse: introduction, trois chapitres, conclusions générales et recommandations, bibliographie de 164 titres, 18 annexes. Le contenu est présenté sur 131 pages de texte de base, contient 28 tableaux, 31 figures et 34 formules. Les résultats obtenus sont publiés dans 20 articles scientifiques.

Mots clés: assurance, efficacité, solvabilité, modèle, Solvabilité II, méthode matricielle, potentiel financier, analyse multicritère, analyse composantes, marché de l'assurance, relations financières.

Domaine d'études: 522.01 Finances.

Le but de la recherche est de développer et de perfectionner le cadre théorique et méthodologique existant pour l'évaluation de l'efficacité de l'assurance en identifiant les réserves inexploitées du potentiel financier des compagnies d'assurance.

Objectifs de recherche : clarification du concept et du rôle de l'assurance en tant que composante du système financier; dresser l'état actuel des connaissances en matière d'efficacité de l'assurance et comparer ses méthodes d'évaluation ; la recherche des composantes du potentiel financier de l'assurance dans la perspective de l'identification des réserves pour rendre plus efficace sa capitalisation ; analyse comparative de l'évolution du marché de l'assurance en Roumanie et en République de Moldavie ; évaluer l'efficacité et identifier le potentiel financier sous l'angle du respect des exigences de solvabilité et de stabilité ; développement d'outils analytiques et prédictifs pour l'évaluation de l'efficacité de l'assurance.

Les éléments suivants constituent **la nouveauté et l'originalité scientifique** : la délimitation conceptuelle et méthodologique de l'efficacité de l'assurance à travers le prisme du critère fonctionnel ; l'analyse comparative du marché de l'assurance en Roumanie et en République de Moldavie a été réalisée ; élucider l'interdépendance entre l'évolution du marché de l'assurance et la croissance économique en développant un modèle économétrique ; analyse stratégique du secteur roumain des assurances avec l'application de la matrice Franchon et Romanet ; le développement du modèle d'évaluation intégré de la capitalisation du potentiel financier comme indicateur complexe de l'efficacité de l'activité de la compagnie d'assurance.

L'importance théorique de la recherche au sein de cette thèse réside dans la concrétisation du concept et de la méthodologie d'évaluation de l'efficacité de l'assurance et dans la détermination des composantes du potentiel financier de la compagnie d'assurance. Les conclusions et recommandations présentées dans la thèse présentent une valeur théorique pour la connaissance et l'évaluation du potentiel financier des compagnies d'assurance et le développement du secteur de l'assurance en général.

La valeur applicative des résultats de la recherche consiste dans l'application des résultats de l'analyse comparative de l'efficacité de l'assurance dans l'adoption de décisions et l'élaboration de mesures pour leur développement en Roumanie et en République de Moldavie. En outre, les directeurs financiers des compagnies d'assurance peuvent utiliser le modèle analytique d'évaluation du potentiel financier comme outil de gestion pour évaluer leurs actions de gestion et établir des indicateurs stratégiques de croissance des performances. Le modèle économétrique de la dépendance de l'évolution du secteur de l'assurance à la croissance économique peut servir d'outil aux organismes de contrôle et de régulation pour formuler des visions stratégiques concernant le développement du secteur de l'assurance.

Approbation des résultats scientifiques. Les résultats de la recherche sur le sujet de la thèse sont publiés dans 17 ouvrages scientifiques avec un volume total de 4,85 pages d'auteur, dont 13 - ont été communiqués dans des forums scientifiques nationaux et internationaux. En outre, les résultats obtenus sont approuvés par le certificat d'innovateur et la loi d'exécution de la compagnie d'assurance "Allianz-Tiriac Unit Asigurari" SA, anciennement connue sous le nom de Gothaer Asigurari Reasigurari SA (Roumanie). Certains résultats seront utilisés dans la démarche didactique-méthodique de la discipline « Assurance et Réassurance ».

LOM IONUȚ-VALENTIN

INCREASING INSURANCE EFFICIENCY BY VALORISING THE FINANCIAL POTENTIAL OF INSURANCE COMPANIES

522.01 FINANCE

Summary of the Doctoral thesis in Economics

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e-mail: cep1usm@mail.ru