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METHODOLOGICAL APPROACHES TO ESTABLISHING A LIFE ASSURANCE GUARANTEE SCHEME IN UKRAINE

Abstract. The article investigates the features of creation, implementation and functioning of life assurance guarantee schemes. Based on the analysis of Ukrainian experience with insurers' failure during 2011—2019, as well as other mechanisms of policyholders' protection (internal risk-management, reinsurance, risk-based prudential supervision, early interventions, policyholders' priority in winding-up process), the article proves the necessity of insurance guarantee scheme (IGS) as the last-resort protection, especially in case of long term life assurance in Ukraine.

The expected guarantee costs for Ukrainian insurance market are calculated in compliance with Solvency II capital requirements. The expected losses of the system in the event of failure as a proportion of remaining insurers' gross premiums for various asset shortfalls are estimated. Considering high concentration in life insurance market of Ukraine, it is revealed that possible losses due to the insolvency of the first four life insurers in Ukraine (from Top-10) are crucial for both the market and the guarantee scheme, despite the fact that the total expected costs of IGS appear relatively small, making up 0.35—0.45% of life assurance gross premiums (in 2019). This is typical for small and concentrated insurance markets, especially if more than 96% premiums are collected by top ten insurers, which make up only half of the market.

When established, policyholder protection funds should be designed carefully to minimise any drawbacks, particularly the moral hazard problem and the burden on soundly managed member companies. The key features of an effective IGS for Ukraine are offered. It has been proven that any IGS initiatives should be delayed in Ukraine until proportional regulation that reduce the risks of insurance companies is introduced and prudential supervisory regime Solvency II implemented.

Keywords**:** life assurance, protection mechanisms, insurance guarantee scheme, insurer insolvency, policyholder protection.

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МЕТОДОЛОГІЧНІ ПІДХОДИ ДО ПОБУДОВИ СИСТЕМИ ГАРАНТУВАННЯ ВИПЛАТ ЗА ДОГОВОРАМИ СТРАХУВАННЯ ЖИТТЯ В УКРАЇНІ

Анотація. Проведено дослідження особливостей створення, впровадження і функціонування систем гарантування виплат (СГВ) страхувальникам за договорами страхування життя. На основі аналізу українського досвіду вибуття страховиків з ринку впродовж 2011—2019 рр., а також інших відомих механізмів захисту споживачів страхових послуг (ризик-менеджмент страховика, перестрахування, пруденційний нагляд на основі оцінки ризиків, системи раннього попередження, преференції страхувальників порівняно з іншими кредиторами в процесі ліквідації страховика) обґрунтовано потребу в існуванні страхових гарантійних механізмів як останнього рівня захисту, передусім, за договорами накопичувального страхування в Україні, виплати за якими є довгостроковими заощадженнями громадян і, зокрема, їх забезпеченням у старості.

Обчислено обсяг гарантійного фонду (очікуваних гарантійних виплат) для українського страхового ринку, виходячи з дотримання вимог Solvency II до капіталу страховика, а також очікувані збитки системи в разі банкрутства страховика у відсотках до сумарних валових премій інших учасників ринку. Зважаючи на високу концентрацію ринку страхування життя в Україні, виявлено, що неплатоспроможність одного з перших чотирьох (у рейтингу Top-10) страховиків життя в Україні може мати критичні наслідки як для ринку, так і для системи гарантування, попри те, що очікувані гарантійні виплати становлять лише 0,45 % валових премій (для 2019 року). Таке характерно для невеликих і концентрованих страхових ринків, особливо якщо понад 96 % премій збирається першими десятьма страховиками, які становлять лише половину ринку.

Запропоновано ключові характеристики ефективної системи гарантування виплат за договорами страхування життя для України. Доведено, що ініціативи щодо СГВ в Україні повинні впроваджуватись лише після імплементації Solvency II, а також пропорційного регулювання і нагляду на основі оцінки ризиків.

***Ключові слова*:** страхування життя, захисні механізми, система гарантування, неплатоспроможність страховика, захист страхувальника.

Формул: 0; рис.: 3; табл.: 2; бібл.: 10.

Introduction. In the conditions of weak state regulation of the insurance market, insufficient institutional capacity of the supervisory authority, enhanced by the low level of consumer protection, the lack of guarantees for policyholders to recover their own savings in case of insurer’s insolvency leads to mistrust of life assurance, lack of competitive advantages of insurance compared to banks.

Purchasing life assurance, policyholder can’t predict long-term solvency of insurer until the maturity of the contract. The actual consequences of life assurer’s failure for policyholders and beneficiaries are particularly severe due to savings and investment nature of life insurance products when expected benefit of customers is their future income or financial support in case of breadwinner death. Wealth losses can be rather significant, if the life assurance was purchased to provide for retirement income or individual savings have been made during long time period.

This outlines the need for research the feasibility of creating compensation and guarantee mechanisms for life insurance premiums in Ukraine, the conditions for their design and introduction, as well as the justification of the financial basis of such mechanisms.

Analysis of recent research and publications. Issues of insurance guarantee schemes (IGS) creation in Ukraine and their influence on the financial market have been considered in researches of many scientists, in particular N. Vnukova, O. Vovchak, Y. Gavrilenko, O. Gamankova, S. Osadets, O. Reverchuk, T. Rotova, N. Tkachenko, and others. Also, outlined issues are actively researched by foreign scientists. Schich, Kim [1] and OECD [2] each provided a detailed report on financial consumer protection systems and insurance guarantee schemes in OECD member jurisdictions. Oxera [3] and EIOPA [4; 5] presented a comprehensive overview of insurance guarantee schemes in EU member states.

European commission report [6] proposes the methodology for estimation of loss distributions for IGSs based on a default risk model and compares them with: the results provided in the Oxera report, actual fund sizes and data on past failures as reported by Oxera. P. Rymaszewski and H. Schmeiser [7] analyzed under which conditions a self-supporting insurance guaranty fund can be beneficial for the policyholders in an incomplete market.

However, despite numerous scientific developments and legislative initiatives, there is no comprehensive vision of the insurance protection scheme in Ukraine with regard to design features, which include: the relationship with the financial supervisory authority; the limit and scope of coverage; funding mechanisms; and resolution powers.

The purpose of the research is to establish theoretical and methodological foundations as well as practical approaches to creating a compensation mechanism (IGS) for consumer protection in Ukrainian life insurance market.

Research methodology and methods. Analyzing the concept of insurance guarantee scheme and the steps of it's establishing, the authors has used a comparative analysis, whereas examining other mechanisms of policyholders' protection and offering key features of an effective IGS for Ukraine — synthesis and analogy methods. While estimating the expected guarantee costs and expected losses of the system in the event of failure, VaR methodology was used.

Research results. Despite the fact that insurance undertaking is strictly regulated, quite a few life assurers, such as Zenit, Garant-Life, ECKO, Illichivsk-Life, Classic Insurance, Oranta-Life have left the market during the last few years, leaving more than 22,000 policyholders without compensation (totalling more than UAH 316 million). And there is no mechanism for transferring their savings to another insurance company (*Fig. 1*).

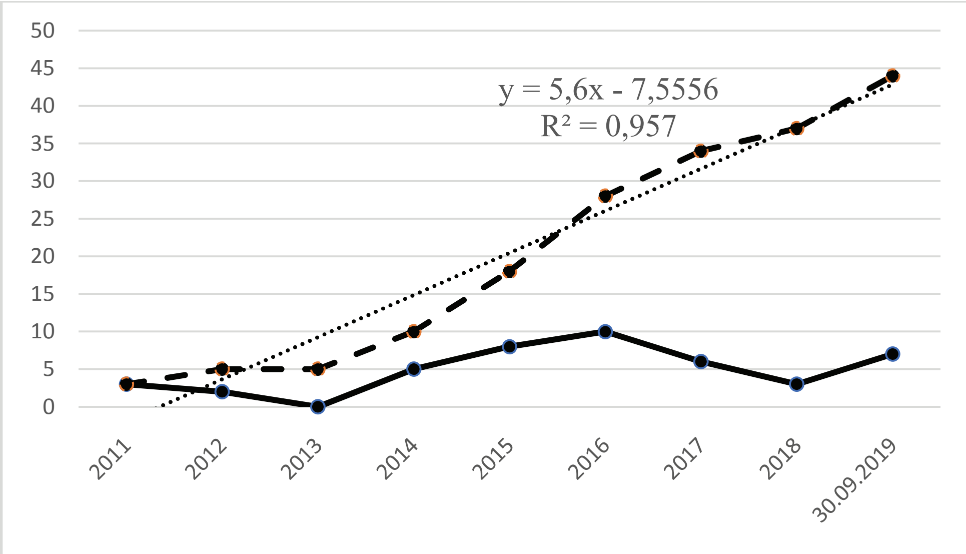

Fig. 1. **The number and accumulative number of failed life insurers during 2011—2019 years in Ukraine**

Source: built by the authors using data from [8; 9].

As it can be seen from the figure, five life assurers on average leave the Ukrainian market annually. The cumulative result of such processes can be quite accurately described and predicted by the equation shown in the figure with coefficient of determination $R^2 = 0{,}957$.

Existence of other protection mechanisms, such as a strict prudential framework, actual solvency regime (Solvency I or Solvency II), insurer's internal risk management can reduce, but don't completely eliminate the risk of failure. Assuming that there is no zero-failure regime, a case can be made for establishing an IGS that can offer consumer protection by paying compensation or by facilitating the transfer of insurance policies to a solvent insurer (*Fig. 2*).

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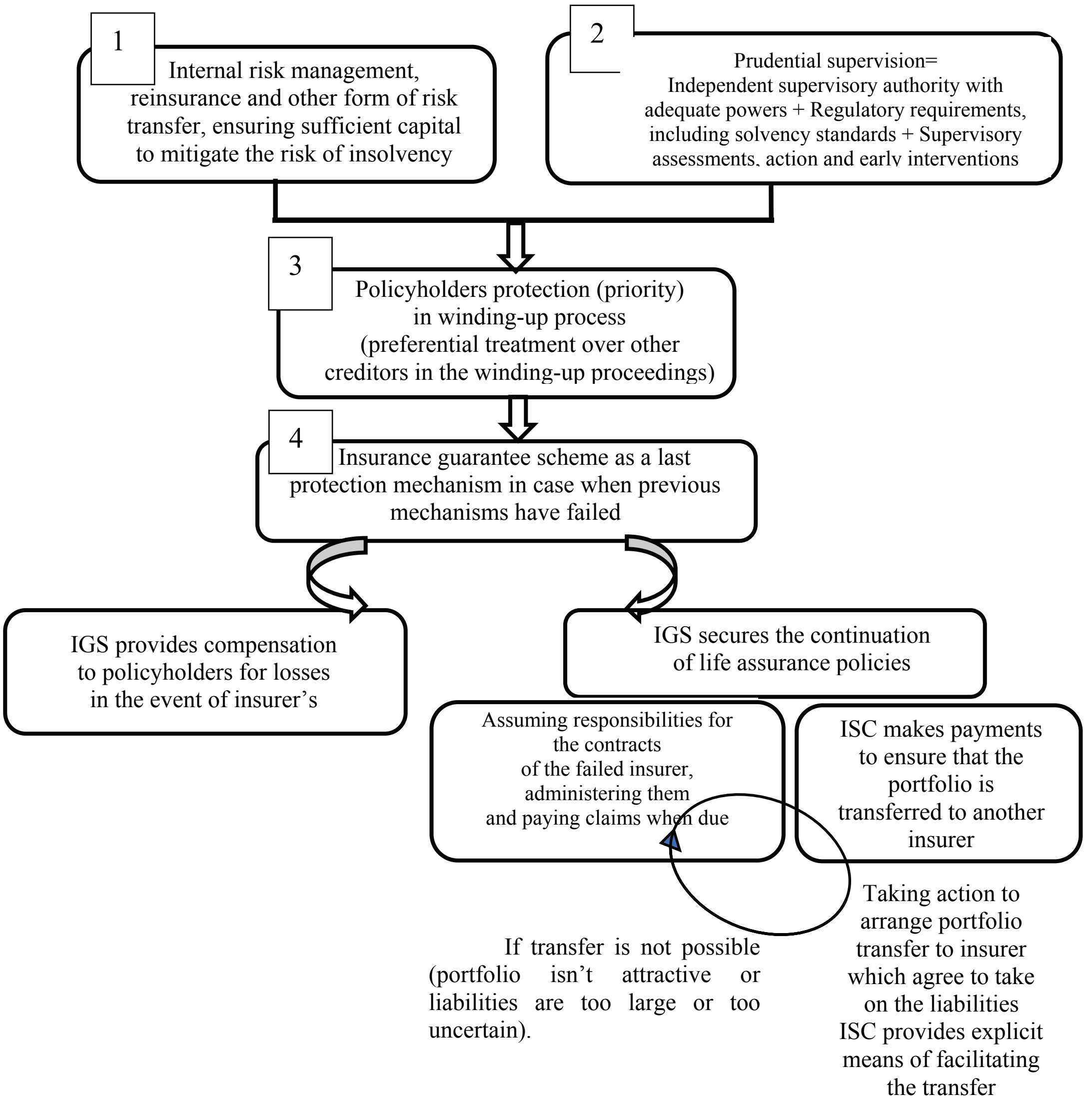

Fig. 2. **Main policyholders' protection mechanisms**
Source: built by the authors.

Since mechanisms 1—3 (see *Fig. 2*) can't completely protect policyholders' rights, the issue of IGS implementation boils down to cost of its operation. IGS is mechanism of last-resort protection, being triggered only in case when other protection mechanisms fail.

Currently, 26 insurance guarantee schemes (or schemes that are similar to or fulfil the tasks of IGSs) are established in 20 European Economic Area member states. IGSs don't exist in Croatia, Cyprus, Czech Republic, Iceland, Liechtenstein, Lithuania, Luxembourg, Netherlands, Slovakia, Slovenia and Sweden [4].

Most IGSs pay compensation to policyholders for losses in case of liquidation, while 8 out of 25 schemes have other tasks, such as funding a portfolio transfer, taking over and administering insurance policies, securing the continuity of insurance policies, etc. 75% of existing schemes in EU require ex-ante funding and approximately half of them have the power to raise additional funding ex-post from insurers to cover shortfall should it arise. Ex-ante model is the most widespread because it allows to gradually accumulate resources within the fund and use them at any time as needed (Latvia, Spain, Germany, France, Japan). Advantages of this model are constant availability of financial resources and speed of response in case of insurers' insolvency. However, there are some drawbacks such as necessity for administrative expenses, the inability to clearly identify the amount of fund to ensure the stability of the insurance market. 25% schemes require ex-post funding the advantage of which is the ability of insurers to use their funds without transferring them to IGS. However, difficulty in accumulating the necessary amount of financial resources quickly under ex-post basis complicates the guarantee process and leads to loss of trust on the part of consumers.

In 50% of EU IGSs the contributions are calculated on the basis of written premiums while in the others the technical provisions and number of contracts are used to estimate the contribution [5].

In Ukraine insurance premiums under life insurance contracts for 2018 amounted to UAH 3.9 billion, and for 9 months of 2019 — to 3.29 billion. In 2018, the insurers made payments in the amount of UAH 704.9 million, and for the 9 months of 2019 — UAH 427.4 million. Despite a significant number of insurance companies in Ukraine, in fact, the main share of gross premiums (96.7%) is accumulated by 10 life insurers (43.5% of all life insurance companies).

Moreover, today life assurers continue to accept insurance premiums and build up liabilities. Mass payments under the contracts will begin only in 2020—2025, since life insurance in Ukraine became a separate industry in 1997, and the average duration of the contracts is 15—20 years. As payments in case of survival are growing, the risk of insurers' insolvency increases.

In order to provide protection of policyholders in Ukraine, the IGS must raise funds from contributions of insurance undertakings. The size of the insurance guarantee costs depends on several factors [3; 6]:

1. The average probability of default over the period considered;
2. Exposure at default measured by the average amount of liabilities of failed company to claimants, beneficiaries and insured. The best estimate for the exposure is given by the Technical Provisions of the company including the risk margin;
3. The extent of insolvency — the average shortfall of assets over liabilities of defaulting company;
4. Market share of defaulting company — the higher market share of the failed company causes more claims to be compensated and therefore enhances the guarantee costs;
5. The extent of protection provided — the rules adopted by the IGS relating to compensation limits, eligibility of claimants, reductions in benefits and continuation policy.

Disregarding scheme design features and timing, it's possible to calculate expected guarantee costs for Ukrainian insurance market, which are illustrated in *Table 2* for the probability of insolvency being taken as 0.5%. If Solvency II is accepted by National bank of Ukraine as a basis of insurance supervision, capital requirements for insurers will relies on the value at risk (VaR) measure with a ruin probability of 0.5 percent per year. It can be assumed as a frequency at which an IGS may be triggered after all previous prevention mechanisms have failed.

As presented in *Table 1*, the obtained total expected costs of IGS appear relatively small, making up 0.35—0.45% of life assurance gross premiums (approximately UAH 14 mln) in a given year. But in parallel, it's worth considering possible loss at failure, because depending on the market share of the failed company the losses could be pretty significant. Calculation will base on 2019 data about technical provisions and gross premiums of life assurers in Ukraine.

Table 1

Expected guarantee costs in Ukrainian insurance market

Date	Total gross technical provisions, mln. UAH	Total gross premiums, mln UAH	Probability of insolvency	Shortfall of assets over liabilities	Expected costs, mln UAH	Expected guarantee costs (% of gross premiums)
31.12.2018	9 335,10	3906,10	0,5%	30%	14,0027	0,3585
30.09.2019	9 891,60	3 293,70	0,5%	30%	14,8374	0,4505

Source: estimated by authors using the data from [8].

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As shown in *Table 2*, for Top-8 life insurers in Ukraine the uncovered loss could vary widely from 0.38% to 52.96% of gross premiums of the insurers remaining in the market for 50% shortfall of assets over liabilities of the failed company. It should be noted that possible losses due to the insolvency of the first four companies are crucial for the market (so, for MetLife it can reach up to 53% of market gross premiums depending on shortfall of company's assets in case of failure).

Table 2

Loss given failure as a proportion of remaining insurers' gross premiums for various asset shortfalls (Top-8 life insurers)

№	Insurance company	Shortfall of assets over liabilities				
		15%	**20%**	**30%**	**40%**	**50%**
1	MetLife	15,89	21,18	31,77	42,36	52,96
2	TAC	12,13	16,17	24,25	32,34	40,42
3	UNIQA LIFE	4,69	6,26	9,38	12,51	15,64
4	PZU UKRAINE Life insurance	3,76	5,02	7,53	10,04	12,55
5	KD-LIFE	0,92	1,22	1,83	2,44	3,05
6	ACKA-LIFE	0,47	0,63	0,95	1,26	1,58
7	ARX LIFE	0,17	0,22	0,33	0,44	0,55
8	INGO UKRAINE LIFE	0,11	0,15	0,23	0,30	0,38

Source: estimated by authors using the data from [8; 9].

Such financial difficulties can arise with IGS on small and concentrated insurance markets as one in Ukraine especially in the event of larger-scale failure. The combined market share of top ten life assurers in Ukraine exceeds 96% while the share of top five amounts to around 78%. Under the circumstances, it is difficult to allocate costs between a plenty of companies and, that is far more important, between a large number of policyholders in the event of insolvency.

Therefore, it is very important to design the Ukrainian IGS correctly, namely to address the basic issues, illustrated on *Fig. 3*, in order not only to minimise risks for the market, particularly the burden on soundly managed member companies, but also to stimulate its development.

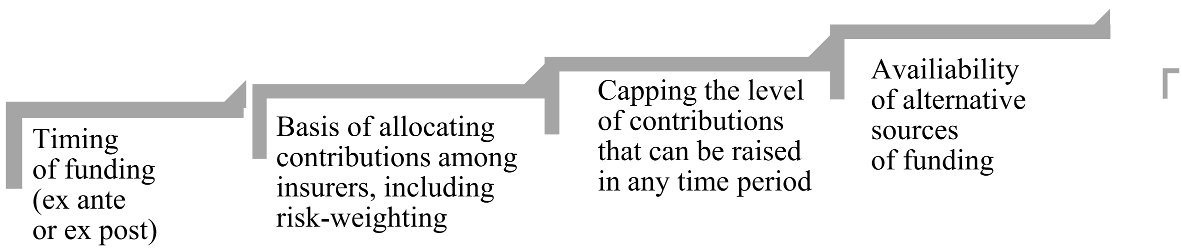

Fig. 3. **Main issues which need to be addressed for national IGS**

Source: built by the authors.

In our opinion, ex post funding is not appropriate for the Ukrainian market today, because under such model companies, leaving the market due to insolvency, do not participate in the creation of funds to compensate their policyholders, which causes significant moral risks, reinforced by the lack of financial remediation tools as well as an adequate mechanism for insurance portfolio transferring.

Since the amount of life assurers' equity capital is UAH 937,119 million for the 9 months of 2019, at proposed 1% of the initial contribution rate, the amount of initial revenues to the IGS fund will be about UAH 10 million. Quarterly receipts (at 1% of gross premiums) will fill the fund by more than UAH 40 million a year (in 2019, on average, quarterly gross premiums amounted to

UAH 1,098 billion). Subject to stable market development and appropriate supervision, this amount exceeds total expected costs of IGS in a given year.

But it's of crucial importance for Ukraine to adjust IGS scheme design which minimizes moral hazard effects at different levels (policyholders, insurers and supervisory authorities). The existence of IGS and guarantee funds may change their incentives, increase risk-taking and compound the risk of failure in the market.

For instance, customers believing they would not suffer from the insurer's failure because of IGS scheme coverage, may choose the cheapest product without prudent selection of insurer. This effect can be reduced by imposing limits on the compensation's amount or applying percentage reductions and deductibles to all claims. As IGS in Ukraine is supposed to become a part of the existing bank guarantee mechanism, it is relevant to set reimbursement limits that are applied to individuals' deposites.

On the other hand, introduction of the IGS may result in the insurers' portfolio shifts towards more risky assets, greater risk-taking, unhealthy competition on price, but also it causes stronger incentives for self-monitoring the industry by soundly managed insurer. Risk-based supervision (due to implementation of Solvency II before creation of an IGS in Ukraine), prudential regulations may essentially mitigate these potential concerns. Risk-based levies is one of the most efficient tools that prevent an unfair burden being placed on solvent insurer by weak and riskier ones [10]. Risk measure VaR (Value at Risk) focuses on the tail of claim distribution and therefore can be used to calculate contributions of a particular insurer to a life insurance guaranty fund.

It should be noted that due to the long-term nature of life assurance, policyholders benefit more if their contracts are continued via transferring to solvent insurer rather than terminated with compensation in cash because advanced age or deteriorating health can cause difficulty in purchasing equivalent cover instead of the previous one. Therefore, it is equally important to work out procedures for withdrawing insolvent players from the market and transferring the portfolio to solvent insurers.

Conclusions. In Ukraine, the conception of IGS itself will not solve the problem of public confidence. The insurance supervision in Ukraine today is mainly aimed at detecting the violations of legal requirements that have already taken place. The disadvantage of such approach is limited means of identifying possible future problems and taking measures to prevent them. At the same time, the global supervision system has already moved on to the prudential supervision, which involves identifying increased risks in the insurers' activities, monitoring their solvency, and applying appropriate preventive and corrective measures to minimize insolvency cases and violations of the consumers' rights.

Since IGS is only the third level of customer protection then if the first level of protection - the regulator — is not empowered, the largest insurers will constantly bear financial responsibility for the obligations of insolvent market players. Therefore, any IGS initiatives should be delayed until proportional regulation which reduce the risks of insurance companies is introduced and risk-based prudential supervisory regime in Ukraine is fully implemented.

Further research in this area should focus on the actuarial justification of risk-based funding of IGS guaranty funds in life insurance.

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