

UDC [338.48:338.1]:368 (477)

**Suslikov A.***Ph. D. student,**NSC «Institute of Agrarian Economics», Kyiv, Ukraine;**e-mail: Suslikov.Andrii@gmail.com; ORCID ID: 0000-0002-2126-0691***Sirenko O.***Candidate of Economical Sciences, Assistant Professor,**Poltava State Agrarian University, Ukraine;**e-mail: Olena.Sirenko@pdaa.edu.ua; ORCID ID: 0000-0003-4875-308X***Karman S.***Candidate of Economical Sciences, Associate Professor,**Dmytro Motornyi Tavria State Agrotechnological University, Melitopol, Ukraine;**e-mail: Serhii.Karman@tsatu.edu.ua; ORCID ID: 0000-0002-4919-7794***Pochernina N.***Candidate of Economical Sciences, Associate Professor,**Dmytro Motornyi Tavria State Agrotechnological University, Melitopol, Ukraine;**e-mail: Nataliia.Pochernina@tsatu.edu.ua; ORCID ID: 0000-0002-6109-6099***Zakharchenko O.***Candidate of Economical Sciences, Senior Lecturer,**Dmytro Motornyi Tavria State Agrotechnological University, Melitopol, Ukraine;**e-mail: Olena.Zakharchenko@tsatu.edu.ua; ORCID ID: 0000-0002-3259-3328***Vasylchenko O.***Senior Lecturer,**Dmytro Motornyi Tavria State Agrotechnological University, Melitopol, Ukraine;**e-mail: ElenaVasilchenko207@gmail.com; ORCID ID: 0000-0002-5420-2375*

## MARKET POWER AND COMPETITIVE POLICY ON THE MARKET OF TOURIST SERVICES INSURANCE

**Abstract.** Man's desire for self-development through knowledge of the world, the realization of his right to rest are manifested in tourism. The development of tourism is also facilitated by globalization and international integration, visa liberalization with individual countries, as well as international economic and political unions. An effective tool for minimizing risks in tourism is insurance. Despite the long period of forming, the market of travel insurance in Ukraine still does not meet international standards, occupies a small place in the system of insurance services. The purpose of this study is the analysis of concentration on the market of tourist services insurance in Ukraine. The state and tendencies of concentration in the market of travel insurance in Ukraine are analyzed. Lorentz' concentration curves in the market of medical expenses insurance are constructed. It has been shown that insurance in the market of medical expenses is essential for the development of tourism in Ukraine, especially outbound. In this system of provided insurance services the quality of tourist services should come first, which can be achieved only under conditions of perfect competition, state regulation and implementation of international insurance standards. It has been established that during 2014—2020 there were processes of increasing the market power of insurance companies, an oligopoly is formed with four or six main players. It has been shown that the leaders of insurance in the market of tourist services are large insurance companies with foreign capital, operating at the international level. Their gradual concentration in recent years indicates the improvement of the institutional framework of tourist insurance, and the increase in insurance premiums and insurance payments indicates the restoration of confidence of Ukrainians in insurers.

**Keywords:** market power, concentration, competitive policy, insurance, tourism, market, risks.

**JEL Classification** G22, L12, L13

Formulas: 6; fig.: 2; tabl.: 3; bibl.: 26.

**Сусліков А. О.**

здобувач вищої освіти ступеня доктора філософії,  
 ННЦ «Інститут аграрної економіки», Київ, Україна;  
 e-mail: Suslikov.Andrii@gmail.com; ORCID ID: 0000-0002-2126-0691

**Сіренко О. В.**

кандидат економічних наук, доцент,  
 Полтавський державний аграрний університет, Україна;  
 e-mail: Olena.Sirenko@pdaa.edu.ua; ORCID ID: 0000-0003-4875-308X

**Карман С. В.**

кандидат економічних наук, доцент,  
 Таврійський державний агротехнологічний університет імені Дмитра Моторного,  
 Мелітополь, Україна;  
 e-mail: Serhii.Karman@tsatu.edu.ua; ORCID ID: 0000-0002-4919-7794

**Почерніна Н. В.**

кандидат економічних наук, доцент,  
 Таврійський державний агротехнологічний університет імені Дмитра Моторного,  
 Мелітополь, Україна;  
 e-mail: Nataliia.Pochernina@tsatu.edu.ua; ORCID ID: 0000-0002-6109-6099

**Захарченко О. Г.**

кандидат економічних наук, старший викладач,  
 Таврійський державний агротехнологічний університет імені Дмитра Моторного,  
 Мелітополь, Україна;  
 e-mail: Olena.Zakharchenko@tsatu.edu.ua; ORCID ID: 0000-0002-3259-3328

**Васильченко О. О.**

старший викладач,  
 Таврійський державний агротехнологічний університет імені Дмитра Моторного,  
 Мелітополь, Україна;  
 e-mail: ElenaVasilchenko207@gmail.com; ORCID ID: 0000-0002-5420-2375

## **РИНКОВА ВЛАДА І КОНКУРЕНТНА ПОЛІТИКА НА РИНКУ СТРАХУВАННЯ ТУРИСТИЧНИХ ПОСЛУГ**

**Анотація.** Прагнення людини до саморозвитку через пізнання світу, реалізація його права на відпочинок знаходять свій прояв у туризмі. Розвиткові туристичної діяльності також сприяють глобалізація й міжнародна інтеграція, лібералізація візових режимів як з окремими країнами, так і міжнародними економічними й політичними союзами. Дієвим інструментом мінімізації ризиків у туризмі є страхування. Незважаючи на тривалий період становлення, ринок страхування туристичних послуг в Україні й донині не відповідає міжнародним стандартам, займає незначне місце в системі страхових послуг. Метою дослідження є аналіз концентрації на ринку страхування туристичних послуг в Україні. Проаналізовано стан і тенденції концентрації на ринку страхування туристичних послуг в Україні. Побудовано криві Лоренца концентрації на ринку страхування медичних витрат. Показано, що страхування на ринку медичних витрат має істотне значення для розвитку туризму в Україні, особливо виїзного. У цій системі надаваних страхових послуг на перше місце має виходити якість обслуговування туристів, чого можна досягти тільки за умов досконалої конкуренції, державного регулювання й впровадження міжнародних стандартів страхової діяльності. Установлено, що протягом 2014—2020 рр. відбуваються процеси нарощення ринкової влади страхових організацій, формується олігополія з чотирма — шістьма основними гравцями. Показано, що лідерами страхування на ринку туристичних послуг є великі страхові компанії з іноземним капіталом, що здійснюють свою діяльність на міжнародному рівні. Їхня поступова концентрація протягом останніх років вказує на удосконалення інституціональних засад страхування туристів, а збільшенням обсягів страхових премій і страхових виплат — свідчить про відновлення довіри українців до страховиків.

**Ключові слова:** ринкова влада, концентрація, конкурентна політика, страхування, туризм, ринок, ризики.

Формул: 6; рис.: 2; табл.: 3; бібл.: 26.

**Introduction.** Tendency of people to self-development through learning the world, realization of their right to rest can be realized through tourism. Globalization and international integration, liberalization of visa regime both with individual countries and international economic and political alliances contribute the development of tourist activity. At the same time tourist activity fulfillment should be based on the principle of safety and risk minimization for peoples' life and health, for this reason in accordance with the Art. 6 of the Law of Ukraine «On tourism» [1], one of the main priority areas of the state policy in the sphere of tourism is determination of the basics of tourism safety. In addition, the main directions in realization of the Strategy of tourism and resorts for the period until 2026 within «Safety of tourists» [2] are the following: guarantee of tourists' safety and protection of their legal rights by providing emergency assistance to those who are occurred to be in an emergency situation or are injured during the journey, intensification of responsibility rested on tourist operators to consumers of tourist services.

An effective instrument of risk minimization in tourism is insurance. Despite the extended period of establishing, the market of tourist service insurance in Ukraine does not meet the international standards and takes an inconsiderable place in the system of insurance services up to the present day.

Realization of Strategy of development of the financial sector of Ukraine for the period until 2025 [3] accepted by the National Bank of Ukraine in 2020 needs the development of the market of insurance services (goal 4.1.2), in particular, development, approval and implementation of a circulation map for «Main principles of insurance» of the International Association of Insurance Supervisors and implementation of EU requirements to the Ukrainian legislation as for regulation of the insurance activity with consideration to the specificity of the national market; implementation of management within the systemic influence of misleading fillips and promotion of competitiveness on the market of financial services (goal 1.3.5).

Consequently, the investigation of concentration on the market of tourist services insurance is a current and significant task of the scientific research which is driven by the choice of the theme and the purpose statement.

**Literature review and problem statement.** D. Abramitova, R. Baharun, N. Botvina, A. Diab, D. Hainaut, I. Huzela, P. Kannisto, O. Kneysler, S. Kotenko, O. Kozmenko, O. Kryvytska, V. Lysenko E. Mamedova, A. Metwally, H. Naseeb, N. Ribun, N. Shashkova, L. Shupa, D. Tretiak, Ch. Tso-Jen, Y. Tsu-Wei, N. Vnukova, O. Yatsenko, S. Zaychuk and many other scientists devoted their works to the study of the problem of competitive development of the tourist insurance market. They have developed theoretical and methodological bases for the development of the travel insurance market, substantiated the principles for increasing the competitiveness of companies in it.

Thus, D. Hainaut identified a direct relationship between financial markets and insurance markets [4]. In turn, the decline in financial activity of citizens, even despite the amount of savings, directly determine the development of the insurance market for tourist services.

O. Kozmenko and V. Lysenko showed that the development of the tourist insurance market is significantly influenced by the processes of globalization and economic integration, as well as the liberalization of financial markets [5].

According to the fundamental research of A. Hutorov et al., insurance of tourist services is one of the important conditions for inclusive development of the national economy [6].

P. Kannisto, R. Baharun et al. showed that resistance to local tourism markets causes risks to human health and the need for travel insurance [7; 8].

E. Mamedova, S. Kotenko et al. and N. Shashkova et al. proposed an improved method of analyzing the competitiveness of insurance companies in the market of tourist services [9—11]. In this case, according to the author, a significant impact on the market is the concentration of market power.

According to studies by Y. Tsu-Wei and Ch. Tso-Jen, despite the transaction costs, tourists prefer to insure medical expenses in the highest rated insurance companies [12]. At the same time,

the lower cost of the electronic assistance policy mostly does not change the consumer’s choice of customers.

S. Zaychuk [13], D. Tretiak [14] and O. Yatsenko et al. [15] identified the main trends in the development of health insurance in Ukraine.

Studies conducted by O. Kneysler et al. showed that the concentration in the medical insurance market in Ukraine is significant and due to the tendencies of monopolization of the insurance market. Scientists have also substantiated a methodical approach to the analysis of the concentration of the insurance market, which is based on the integrated application of market share of the four largest companies and the Herfindahl-Hirschman index [16].

Recent studies by H. Naseeb, A. Diab and A. Metwally show significant transformations in medical insurance for tourists, changes in the structure of the assistance policy under the influence of the COVID-19 pandemic [17].

At the same time, in the context of globalization challenges and European integration processes, further research on the problem of concentration in the market of tourist services in Ukraine is needed, which led to the choice of the topic of this study.

**The purpose of the study.** The purpose of this study is the analysis of concentration on the market of tourist services insurance in Ukraine.

**Methodology and research methods.** The methodological basis of the study is a systematic analysis of the market of tourist services insurance in Ukraine and economic processes that determine the dynamics of market power in it.

The level of concentration of the travel insurance market will be assessed using the analysis of the market share of the largest insurance companies, as well as specialized methodological approaches: the Herfindahl-Hirschman index, Hall-Tideman, Lind’s and Ginny’s indexes. These methods make it possible to assess the level of market concentration, the state of monopolization and the boundaries of the oligopoly, as well as to identify trends in market power. Among the main research methods also we used generalization, historical, monographic analysis and graphing.

The information base of the study consists of data from the State Statistics Service of Ukraine, National Commission for State Regulation of Financial Services Markets and the «Forinsurer» agency.

**Research results.** During 2000—2020 tourism by citizens of Ukraine had been getting of more importance. The number of tourists has increased in 1.4 times during the investigated period (Fig. 1). The best rate of increase at tourist flows can also be noted in 2018–2019. In accordance with price-quality ratio, national tourists prefer travelling abroad beginning from 2008. The most popular with tourists’ countries are Turkey, Egypt, OAE, Tunisia, Cyprus and Spain. Hence in 2019 the number of international tourists was 5.5 million people which is 10.6 times higher than the number of domestic tourists.

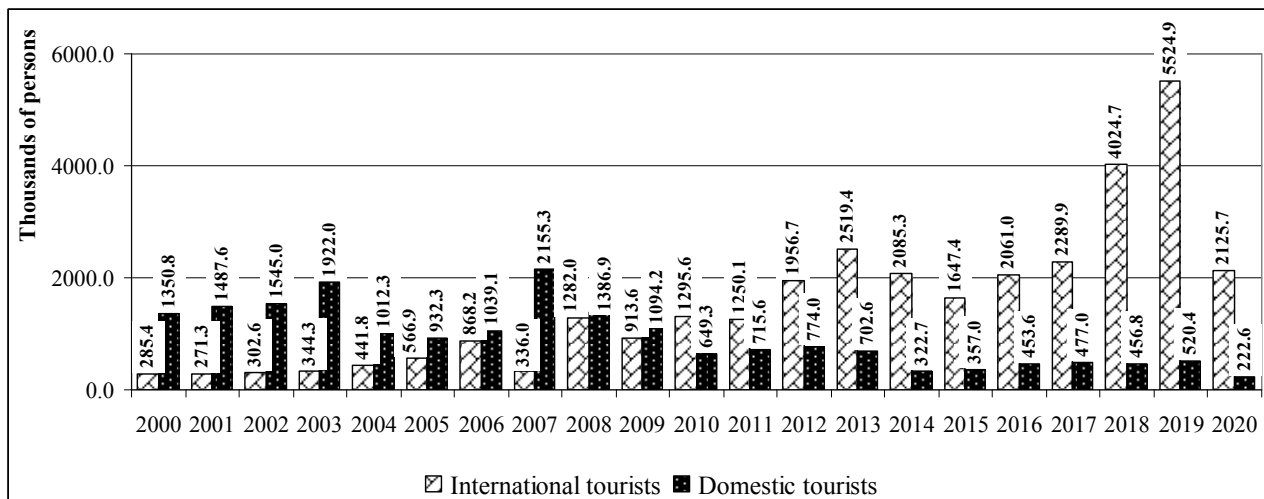


Fig. 1. Dynamics of tourist flows in Ukraine

Source: compiled by authors according to the data from the State Statistics Service of Ukraine.

It should be noted that the COVID-19 pandemic had a negative impact on tourism development in 2020. As a result, the number of tourists decreased by 2.6 times in comparison with the previous year.

Tourist activity is closely connected with a number of risks that threaten the lives and health of people and their property. Especially these risks increase during international tourism, adventure tourism and implementation of health resort treatment.

In accordance with the Art. 16 of the Law of Ukraine «On tourism», insurance of tourists (medical and accident insurance) is compulsory and provided by tourist operators under the contracts with insurers [1].

Insurance of tourist operators is mainly obligatory and depends on a particular type of service provided. Thus, in accordance with the Art. 7 of the Law of Ukraine «On insurance», medical and pharmaceutical workers in case of Human Immunodeficiency Virus infection during fulfillment of their job responsibilities, insure the liability of tourist operators for damage caused to life or health of the tourist or his/her property, personal accidents insurance for transport, civil aviation insurance, liability insurance of the sea carriers' and the executor's of works connected with service of sea transport, as for compensation of the losses caused to passengers, luggage, post, cargo, other users of maritime transport and third parties, civil and legal liability insurance of land vehicles owners, water transport means insurance, marine liability insurance of ship owners' [18].

Medical expenses insurance is a type of insurance when the subject of the policy is property interests that do not contradict the law related to life, health of the insurant or the third party (an insured person) specified by the insurant in the policy to his/her consent, as well as medical and additional costs which are directly related to the occurrence of the insured accident during the trip of the insurant or the insured person. This type of insurance provides the obligation of the insurer for the premium fixed in the policy insurance fee to make an insurance payment in accordance with the terms of the policy in the amount of the sum insured or its part by compensation of the documented expenses for receiving necessary health care by an insurant in connection with the occurrence of the insured accident during the travel of the insurant or the insured person [19].

Personal insurance of tourists who are the citizens of Ukraine and travel through its territory is voluntary. Exceptions are guided adventure tourist routes, such as visiting the Chernobyl Exclusion Zone, which threatens human life and health.

In the case of international tourism, a personal insurance of tourists is mostly mandatory, which is regulated by international standards, interstate agreements and visa regime of individual countries. Thus, according to Art. 15 of the EU Visa Code, in order to obtain a visa or cross the border without a visa, a person must have a valid health insurance policy to cover the costs that may arise in connection with repatriation for medical reasons or death, the provision of emergency medical services and/or urgent care in a hospital [20]. The minimum amount of insurance coverage should be 30 thousand euros, and the insurance policy should be valid in all EU member states, including those where the tourist is in transit.

Currently, insurance companies in Ukraine offer a comprehensive insurance policy to their tourists. Depending on the cost of the policy, it includes medical expenses insurance, flight delay or cancellation insurance, luggage insurance, insurance in case of loss of documents (passport, tickets, etc.), personal liability insurance. For tourists traveling by their own car, their liability as owners of vehicles under the «green card» program is additionally insured. Insurance companies can also cover the costs for providing emergency legal assistance to the injured tourist, payment of urgent messages related to the accident, transportation of close relatives to the scene and back, organization of early return of the tourist to Ukraine, payment of additional medical services not provided by a standard policy.

One of the main indicators of market concentration is the market share of the largest companies. In general, the impact of a certain company on the market can be estimated when a share of this market exceeds 20%. In accordance with paragraph 10.2 of the Methodology for determining the monopoly (dominant) position of business entities on the market, approved by the order Antimonopoly Committee of Ukraine, the monopoly (dominant) position of business entities

is considered when the share of one market agent (market leader) exceeds 35% and it has not proved that it has real competitors; the market share of the three (or two) largest market agents exceeds 50% and the market share of the five (or four) largest market agents exceeds 70% [21].

During 2009—2019 the market of insurance services in Ukraine underwent significant structural changes (*Table 1*). In particular, during the period under investigation, the share of the three largest companies in the life insurance market («Life») has increased by 3.3 percentage points, and compared to 2016 — by 14.6 percentage points; TOP-10 companies have increased their market presence and in 2019 controlled 96.7% of transactions. The dynamics of concentration on the market of «non-Life» insurance also has a steady tendency to strengthen the market power of the largest enterprises however, due to development of the market and active competitiveness within it, monopolization proceeds at a slower pace.

Table 1

### Concentration on insurance market of Ukraine

Market share, %	2009		2011		2016		2019	
	«Life» Insurance	«non-Life» Insurance	«Life» Insurance	«non-Life» Insurance	«Life» Insurance	«non-Life» Insurance	«Life» Insurance	«non-Life» Insurance
CR <sub>3</sub>	54,3	11,2	51,3	13,7	43,0	18,9	57,6	13,9
CR <sub>10</sub>	80,9	29,3	87,1	34,4	89,4	44,6	96,7	37,9
CR <sub>20</sub>	95,2	49,0	96,7	53,6	99,5	62,7	100,0	60,0
CR <sub>50</sub>	100,0	75,2	100,0	76,8	100,0	85,9	×	88,6
CR <sub>100</sub>	×	90,3	×	92,1	×	96,9	×	98,1

Source: compiled by authors according to the data from the National Commission for State Regulation of Financial Services Markets [22] and «Forinsurer» [23].

By January 1, 2021, 72 out of 210 insurance companies in Ukraine insured travelers to EU / Schengen member states. According to data of the National Commission for State Regulation of Financial Services Markets, the share of medical expenses insurance averaged 83—88% in the structure of tourist insurance during 2014—2020. This is the evidence of the fact that Ukrainian tourists traveling abroad mostly buy basic insurance policies and do not want to spend money on luggage or document insurance. At the same time, the overall share of the medical expenses insurance market in Ukraine remains low during 2010—2020. The share of net insurance premiums, although being increased more than 3.0 times, did not exceed 4.5%, and the share of net insurance payments did not exceed 3.0%.

According to «Forinsurer», the leaders within the market of medical expenses insurance in Ukraine in 2019 in terms of gross insurance premiums and gross insurance payments were VUSO and PZU Ukraine (*Table 2*). In total, 25 insurance companies accounted for 88.1% of gross insurance premiums and 97.8% of gross insurance payments. At the same time, the level of insurance payments was the highest in Uniqua, Oranta and ARX, which is due to policies portfolio and the occurrence of insurance accidents under them.

Table 2

### Top-25 insurance companies fulfilling their activity at medical expenses insurance market in 2020

Insurance Company	Insurance premium (gross)		Insurance payments (gross)		Level of insurance payments, %
	amount, mil UAH	market share, %	amount, mil UAH	market share, %	
VUSO	175.0	15.8	42.4	16.4	24.2
PZU Ukraine	140.5	12.7	40.1	15.5	28.5
European Travel Insurance	121.0	10.9	57.9	22.4	47.9
TAS	84.1	7.6	20.4	7.9	24.3
Guardian	74.5	6.7	9.1	3.5	12.2
Kniazha	71.5	6.4	7.7	3.0	10.7

Table 2 (continued)

Insurance Company	Insurance premium (gross)		Insurance payments (gross)		Level of insurance payments, %
	amount, mil UAH	market share, %	amount, mil UAH	marker share, %	
USI	62.3	5.6	9.8	3.8	15.7
Providna	34.9	3.1	3.5	1.4	10.1
ARX	28.9	2.6	15.6	6.0	54.1
Persha	26.9	2.4	6.6	2.5	24.4
Inter-Plus	21.1	1.9	0.8	0.3	3.9
Ukrainian Insurance Group	19.7	1.8	1.3	0.5	6.7
Universalna	15.4	1.4	5.9	2.3	38.2
NIKO	13.3	1.2	2.1	0.8	15.5
Etalon	12.3	1.1	1.4	0.5	11.0
INGO Ukraine	10.8	1.0	2.9	1.1	26.5
SPARE	10.2	0.9	0.0	0.0	0.3
Uniqua	9.9	0.9	8.0	3.1	81.1
Arsenal	9.8	0.9	3.3	1.3	33.7
Oranta	8.8	0.8	5.5	2.1	63.0
ALFA	8.4	0.8	5.0	1.9	59.4
Krona	6.8	0.6	0.2	0.1	3.0
UPSK	6.3	0.6	1.1	0.4	16.7
ASKA	5.8	0.5	2.3	0.9	39.6
Grawe Ukraine	3.9	0.3	0.6	0.2	15.1

Source: compiled by authors according to the date from the National Commission for State Regulation of Financial Services Markets [22] and «Forinsurer» [23].

According to the Methodology for determining the monopoly (dominant) position of business entities on the market, the travel insurance market in Ukraine can be considered as the competitive one, without obvious manifestations of the monopoly position of one or another insurance company (Table 3).

Table 3

### Concentration of medical expenses insurance market

Index number	2009		2012		2016		2019		2020	
	Market share, %	Relative concentration index	Market share, %	Relative concentration index	Market share, %	Relative concentration index	Market share, %	Relative concentration index	Market share, %	Relative concentration index
Market leader	14.6	1.78	10.2	2.49	15.6	1.67	14.2	1.70	15.8	1.53
CR <sub>3</sub>	32.8	1.16	29.1	1.25	40.3	0.94	34.2	0.95	39.3	0.83
CR <sub>5</sub>	47.4	1.05	44.7	1.06	53.4	0.94	55.8	0.88	53.6	0.84
CR <sub>10</sub>	67.9	1.18	66.3	1.12	74.2	1.08	67.5	0.9	73.8	0.84
CR <sub>15</sub>	78.8	1.40	77.8	1.31	84.7	1.30	74.7	1.10	81.2	1.02
CR <sub>20</sub>	87.1	1.61	85.4	1.51	89.9	1.56	78.7	1.31	85.6	1.21
CR <sub>25</sub>	93.1	1.83	90.8	1.72	93.8	1.81	81.2	1.53	88.4	1.40

Source: compiled by authors according to the date from the National Commission for State Regulation of Financial Services Markets [22] and «Forinsurer» [23].

At the same time, during both 2009—2020 and 2016—2020, we can observe a slight increase in the group of Top-5 largest insurers, which is caused by development of Guardian in 2017—2019 and the competitive struggle of leaders of the medical insurance market.

The main disadvantage of the market share indicator within the largest companies ( $CR$ ) is the fact that competitiveness on the market itself has not been taken into account. To some extent, this defect makes it possible to get rid of the relative concentration index ( $K$ ) [24]:

$$K = \frac{20 + 3FS_n}{CR_n}, \quad (1)$$

where  $FS_n$  is the share of  $n$  largest companies on the market in their total number, %.

In this case, if the index of relative concentration is larger than one, the market is competitive, and vice versa. Relevant calculations have showed that the medical expenses insurance market in Ukraine was competitive, without signs of monopolization until 2014. However, in 2016—2020 we can see a significant impact of the three and five largest insurers, which indicates the formation of an oligopoly.

To confirm or refute the hypothesis of the oligopolistic nature of the travel insurance market in Ukraine, we have calculated the Lind's index ( $L$ ) on a formula (2) [24].

$$L_k = \frac{\sum_{i=1}^n \frac{CR_i(k-i)}{i(CR_k - CR_i)}}{k(k-1)}, \quad k = 2, \dots, n, \quad (2)$$

where  $n$  — is the total number of companies on the market;  $k$  — the number of largest companies on the market;  $i$  — the number of leading companies among the  $k$  largest ones.

In this case, the boundaries of the oligopoly are determined by conditions  $(L_k > L_{k-1}) \wedge (L_{k+1} > L_k)$ . If condition of having an oligopoly is fulfilled and 2–3 companies dominate on the market, then such a market is a rigid oligopoly; if the number of leading companies is up to seven, the total market share of which is 70–80%, the oligopoly is vague [24].

Calculations of Lind's index for the health insurance market in Ukraine in 2020 show that oligopoly condition is met for six insurance companies for the first time, and for eleven insurance companies for the second time. In addition, the value of the first gap is 76.5%, the second one is 19.9%. Thus, it can be argued about the formation of imperfect competitiveness in the form of a semi-rigid oligopoly, where the main market agents are four-six largest companies.

To assess market concentration trends, the Herfindahl — Hirschman index ( $HHI$ ), the Hall — Tideman index ( $HT$ ), and the Gini index ( $G$ ) are calculated.

$$HHI = \sum_i^n Y_i^2, \quad (3)$$

where  $Y_i$  is the market share of the  $i$  company, %.

It is believed that  $HHI < 1000$  means that the market is low-concentrated;  $1000 < HHI < 2000$  means that the market is medium concentrated;  $2000 < HHI < 10000$  means that the market is highly concentrated [24].

$$HT = \frac{100}{2 \sum_i^n r_i Y_i - 100}, \quad (4)$$

where  $r_i$  is the rank of  $i$ -company by the share of the market  $Y_i$ .

It is obvious that the maximum value of the Hall — Tideman index is equal to one under condition of absolute monopoly, and the minimum —  $1/n$  is under condition of perfect competition.

At the same time, due to the different number of insurance companies, the value of the Hall — Tideman index will be statistically shifted. Therefore, we suggest standardizing the indicator by the formula (5). Then the minimum value of the standardized Hall — Tideman index is zero, and the maximum one is 100.0.

$$HT_s = \frac{HT - \min(HT)}{\max(HT) - \min(HT)} \cdot 100, 0. \quad (5)$$

The Gini index is calculated by the formula (6) [25].



$$G = 1 - 2 \sum_{i=1}^m (P_i \cdot cumY_i) + \sum_{i=1}^m (P_i \cdot Y_i), \tag{6}$$

where  $P_i$  is the share of companies of the  $i$  group in the total number of market agents, unit fraction;  $Y_i$  — market share of the  $i$  group of companies, unit fraction;  $cumY_i$  — cumulative market share of companies, unit fraction;  $m$  — number of groups, units.

In the case of a small number of partitions of the original combination ( $m \leq 3$ ) and orientation of cumulative distribution function to the absolute inequality of distribution, the Lorentz curve does not pass through the lines of absolute inequality of distribution, but only approaches them. According to G. Glasser, in this regard, the Lorentz indexes are statistically biased, and therefore they must be adjusted to a constant value of  $m / (m - 1)$  [26].

Calculations of concentration indicators on the market of medical expenses insurance in Ukraine showed that during 2009—2020 there had been two main periods of changes of the market power (Table 4).

Table 4

**Concentration indicators of medical expenses insurance on the national market**

Period	Herfindahl — Hirschman index	Hall — Tideman index		Gini index	
		effective	adjusted	effective	adjusted
2009	632.5	0.057	3.78	0.634	0.704
2010	611.2	0.052	3.44	0.607	0.674
2011	586.5	0.053	3.33	0.603	0.670
2012	552.4	0.052	3.44	0.611	0.679
2013	543.1	0.050	3.24	0.589	0.654
2014	688.6	0.066	4.87	0.680	0.756
2015	675.6	0.055	3.90	0.675	0.750
2016	759.3	0.065	4.59	0.679	0.754
2017	789.2	0.068	4.90	0.690	0.767
2018	806.5	0.086	7.22	0.705	0.783
2019	624.9	0.115	10.25	0.695	0.772
2020	745.0	0.105	9.24	0.641	0.712

Source: compiled by authors according to the date from the National Commission for State Regulation of Financial Services Markets [22] and «Forinsurer» [23].

Thus, by 2014 there was a gradual development and increase in the number of insurance companies providing travel insurance services, thereby intensifying competitiveness and reducing concentration. After the socio-economic and political crisis in 2014, there was a redistribution of economic assets and an oligopoly began to be formed in the insurance market. In 2019—2020, the level of concentration reached its maximum value and this fact has given grounds to conclude that the competitive conditions of tourism insurance activities have significantly deteriorated.

It should also be noted that the Herfindahl — Hirschman index on the market of medical expenses insurance in 2019 exceeded the similar value on the market of risky types of insurance for 3.6 times, and the average one for the entire insurance market of Ukraine for 4.0 times.

Construction of Lorentz curves of concentration on the market of medical expenses insurance of Ukraine shows that in 2020, compared to 2009, the receipt of insurance premiums was less even and proportionally distributed among insurance companies (Fig. 2).

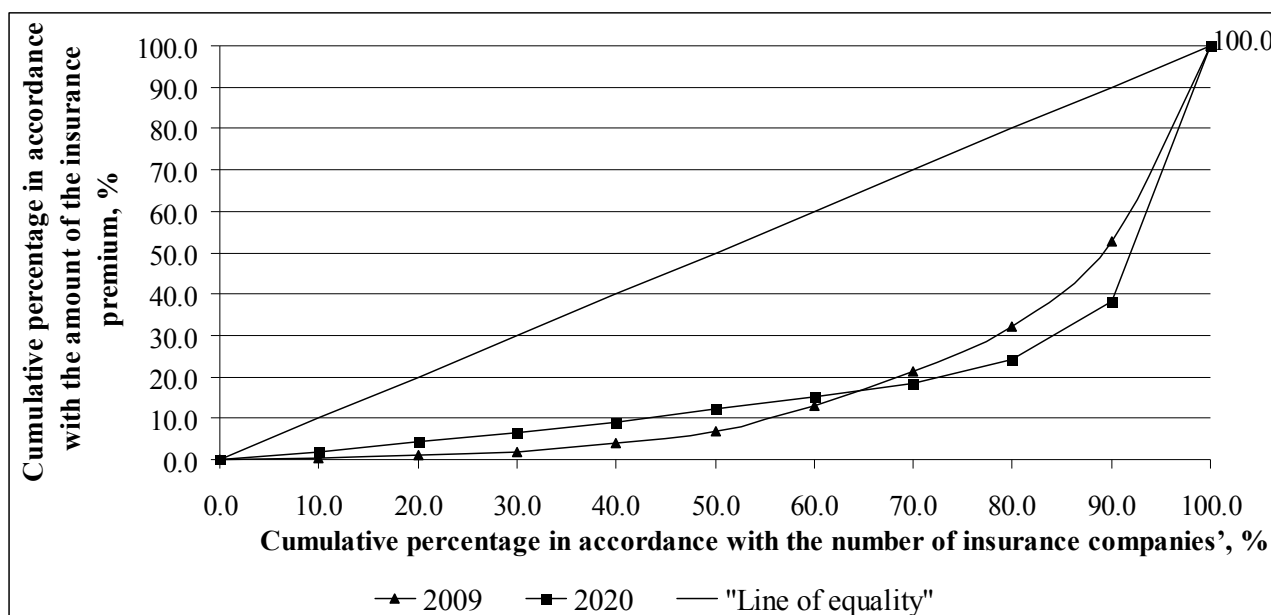


Fig. 2. Lorentz curves of concentration on the market of medical expenses insurance of Ukraine in 2009 and 2020

Source: compiled by authors according to the data from the National Commission for State Regulation of Financial Services Markets [22] and «Forinsurer» [23].

In particular, insurers of the tenth decile concentrated 61.7% of the market of insurance premiums from tourists, or for 14.3 percentage points more than in 2009. If such a concentration of market power is the same, a rigid oligopoly can be expected in the travel insurance market within three main insurers for the next four or five years.

**Conclusions.** Insurance of medical expenses on the market is essential for development of tourism in Ukraine, especially the international one. In this system of provided insurance services, the quality of tourist services should come first, that can be achieved only under conditions of perfect competitiveness, state regulation and implementation of international insurance standards.

The study of concentration on the market of tourist services insurance has shown that during 2014—2020 there were processes of increasing market power within insurance companies; an oligopoly has been formed with four or five major players. At the same time, the leaders in insurance on the market of tourist services are large insurance companies with foreign capital, which operate internationally. Their gradual concentration in recent years shows improvement of the institutional framework of tourist insurance, and increase in insurance premiums and insurance payments shows the restoration of confidence of Ukrainians towards insurers.

Prospects for the further investigation in this area are modeling competitiveness in the insurance market and behavior of tourists as consumers of insurance services, development of strategic directions of state regulation on the medical insurance market and ensuring perfect competitiveness on it.

#### Література

1. Про туризм : Закон України від 15.09.1995 № 324/95-ВР (у чинній редакції). *Законодавство України*. URL : <https://zakon.rada.gov.ua/laws/show/324/95-%D0%B2%D1%80>.
2. Про схвалення Стратегії розвитку туризму та курортів на період до 2026 року : Розпорядження Кабінету Міністрів України від 16.03.2017 № 168-р. URL : <https://www.kmu.gov.ua/npas/249826501>.
3. Стратегія розвитку фінансового сектору України до 2025 року. Київ : НБУ, 2020. 102 с.
4. Hainaut D. Contagion Modeling between the Financial and Insurance Markets with Time Changed Processes. *Insurance: Mathematics and Economics*. 2017. Vol. 74. P. 63—77.
5. Kozmenko O., Lysenko V. Contribution of Insurance Companies to the Development of the World Health Supermarket. *Innovative Marketing*. 2014. Vol. 10. Is. 3. P. 6—13.
6. Hutorov A. O., Lupenko Y. O., Zakharchuk O. V., Hutorova O. O., Dorokhov O. V. Inclusive Development of the Ukrainian Economy. *TEM Journal*. 2020. Vol. 9. № 1. P. 296—303.
7. Kannisto P. Travelling Like Locals: Market Resistance in Long-Term Travel. *Tourism Management*. 2018. Vol. 67. P. 297—306.
8. Baharun R., Jing Mi T., Streimikiene D., Mardani A., Shakeel J., Nitsenko V. Innovation in healthcare performance among private brand's healthcare services in small and medium-sized enterprises (SMEs). *Acta Polytechnica Hungarica*. 2019. Vol. 16. № 5. P. 151—172.

9. Mamedova E. Identifying the Competitiveness of Insurance Companies on the Travel Insurance Market. *European Journal of Economics and Management*. 2019. Vol. 5. Is. 6. P. 104—112.
  10. Kotenko S., Nitsenko V., Hanzhurenko I., Havrysh V. The Mathematical Modeling Stages of Combining the Carriage of Goods for Indefinite, Fuzzy and Stochastic Parameters. *International Journal of Integrated Engineering*. 2020. Vol. 12. № 7. P. 173—180.
  11. Tsu-Wei Y., Tso-Jen Ch. Online Travel Insurance Purchase Intention: A Transaction Cost Perspective. *Journal of Travel & Tourism Marketing*. 2018. Vol. 35. Is. 9. P. 1175—1186.
  12. Shashkova N., Ushkarenko Iu., Soloviov A., Osadchyi O., Nitsenko V. Behavioral Segmentation of Baby Food Consumers: Risk Areas, Possible Solutions. The Case of Ukraine. *European Journal of Sustainable Development*. 2021. Vol. 10. № 1. P. 349—364.
  13. Zaychuk S. The origins and Trends of the Ukrainian Medical Insurance Market. *Problems and Perspectives in Management*. 2015. Vol. 13. Is. 2. P. 102—108.
  14. Tretiak D. Analysis of Ukrainian Life Insurance Market and Its Tendencies. *Investment Management and Financial Innovations*. 2017. Vol. 14. Is. 3. P. 330—338.
  15. Yatsenko O., Reznikova N., Karasova N., Musiiets T., Lavrinenko O., Nitsenko V. Modernization of the Format of Ukraine's Trade Integration with the EU in the Conditions of Implementation of the DCFTA. *Problemy Zarzadzania — Management Issues*. 2020. Vol. 18. № 4. P. 101—124.
  16. Kneysler O., Kryvytska O., Shupa L., Huzela I. Assessment of the Competitive Environment of the Health Insurance Market. *Problems and Perspectives in Management*. 2019. Vol. 17. Is. 2. P. 541—549.
  17. Naseeb H., Diab A., Metwally A. The Impact of the COVID-19 Pandemic on Medical and Travel Insurance Pricing and Fraud Risks: An Exploratory Study. *Journal of Risk Management in Financial Institutions*. 2021. Vol. 14. № 1. P. 59—71.
  18. Про страхування : Закон України 07.03.1996 № 85/96-ВР (у чинній редакції). *Законодавство України*. 1996. URL : <https://zakon.rada.gov.ua/laws/show/85/96-%D0%B2%D1%80>.
  19. Про затвердження Характеристики та класифікаційних ознак видів добровільного страхування : Розпорядження Державної комісії з регулювання ринків фінансових послуг України від 09.07.2010 № 565 (у чинній редакції). *Законодавство України*. 2010. URL : <https://zakon.rada.gov.ua/laws/show/z1119-10>.
  20. Community Code on Visas (Visa Code): Regulation (EC) № 810/2009 of the European Parliament and of the Council of 13 July 2009. URL : <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02009R0810-20200202>.
  21. Про затвердження Методики визначення монопольного (домінуючого) становища суб'єктів господарювання на ринку : розпорядження Антимонопольного комітету України від 05.03.2002 № 49-р. *Законодавство України*. 2002. URL : <http://zakon.rada.gov.ua/laws/show/z0317-02>.
  22. Річні звіти / Національна комісія, що здійснює державне регулювання у сфері ринків фінансових послуг. URL : <https://nfp.gov.ua/ua/Richni-zvity-Natskomfinposlul.html>.
  23. Форіншурер. Статистика страхового ринку України. URL : <https://forinsurer.com/stat>.
  24. Джуха В. М., Курицын А. В., Штапова И. С. Экономика отраслевых рынков. Москва : Кнорус, 2012. 288 с.
  25. Гуторов А. О. Застосування графіка Лоренца для вимірювання рівня концентрації сільськогосподарського виробництва. *Статистика України*. 2011. № 2 (53). С. 4—9.
  26. Glasser G. J. Variance Formulas for the Mean Difference and Coefficient of Concentration. *Journal of the American Statistical Association*. 1962. Vol. 57 (299). P. 648—654.
- Статтю рекомендовано до друку 15.12.2021

© Сусліков А. О., Сіренко О. В., Карман С. В., Почерніна Н. В.,  
Захарченко О. Г., Васильченко О. О.

#### References

1. Pro turizm: Zakon Ukrainy vid 15.09.1995 № 324/95-VR (u chynnii redaktsii) [On tourism: Law of Ukraine of 15.09.1995 № 324/95-VR (in the current version)]. (1995). *Zakonodavstvo Ukrainy — Legislation of Ukraine*. URL : <https://zakon.rada.gov.ua/laws/show/324/95-%D0%B2%D1%80> [in Ukrainian].
2. Kabinet Ministriv Ukrainy. (2017). *Pro skhvalennia Stratehii rozvytku turyzmu ta kurortiv na period do 2026 roku: Rozporiadzhennia vid 16.03.2017 № 168-r* [On approval of the Strategy for the development of tourism and resorts for the period up to 2026: Order dated 16.03.2017 № 168-r]. Retrieved from <https://www.kmu.gov.ua/npas/249826501> [in Ukrainian].
3. *Stratehiia rozvytku finansovoho sektoru Ukrainy do 2025 roku* [Strategy for the development of the financial sector of Ukraine until 2025]. (2020). Kyiv: NBU [in Ukrainian].
4. Hainaut, D. (2017). Contagion Modeling between the Financial and Insurance Markets with Time Changed Processes. *Insurance: Mathematics and Economics*, 74, 63—77.
5. Kozmenko, O., & Lysenko, V. (2014). Contribution of Insurance Companies to the Development of the World Health Supermarket. *Innovative Marketing*, 10 (3), 6—13.
6. Hutorov, A. O., Lupenko, Y. O., Zakharchuk, O. V., Hutorova, O. O., & Dorokhov, O. V. (2020). Inclusive Development of the Ukrainian Economy. *TEM Journal*, 9 (1), 296—303.
7. Kannisto, P. (2018). Travelling Like Locals: Market Resistance in Long-Term Travel. *Tourism Management*, Vol. 67, 297—306.
8. Baharun, R., Jing Mi, T., Streimikiene, D., Mardani, A., Shakeel, J., & Nitsenko, V. (2019). Innovation in healthcare performance among private brand's healthcare services in small and medium-sized enterprises (SMEs). *Acta Polytechnica Hungarica*, 16 (5), 151—172. <https://doi.org/10.12700/APH.16.5.2019.5.9>.
9. Mamedova, E. (2019). Identifying the Competitiveness of Insurance Companies on the Travel Insurance Market. *European Journal of Economics and Management*, 5 (6), 104—112.
10. Kotenko, S., Nitsenko, V., Hanzhurenko, I., & Havrysh, V. (2020). The Mathematical Modeling Stages of Combining the Carriage of Goods for Indefinite, Fuzzy and Stochastic Parameters. *International Journal of Integrated Engineering*, 12 (7), 173—180. <https://doi.org/10.30880/ijie.2020.12.07.019>.
11. Shashkova, N., Ushkarenko, Iu., Soloviov, A., Osadchyi, O., & Nitsenko, V. (2021). Behavioral Segmentation of Baby Food Consumers: Risk Areas, Possible Solutions. The Case of Ukraine. *European Journal of Sustainable Development*, 10 (1), 349—364. <https://doi.org/10.14207/ejsd.2021.v10n1p349>.

12. Tsu-Wei, Y., & Tso-Jen, Ch. (2018). Online Travel Insurance Purchase Intention: A Transaction Cost Perspective. *Journal of Travel & Tourism Marketing*, 35 (9), 1175—1186.
13. Zaychuk, S. (2015). The origins and Trends of the Ukrainian Medical Insurance Market. *Problems and Perspectives in Management*, 13 (2), 102—108.
14. Tretiak, D. (2017). Analysis of Ukrainian Life Insurance Market and Its Tendencies. *Investment Management and Financial Innovations*, 14 (3), 330—338.
15. Yatsenko, O., Reznikova, N., Karasova, N., Musiiets, T., Lavrinenko, O., & Nitsenko, V. (2020). Modernization of the Format of Ukraine's Trade Integration with the EU in the Conditions of Implementation of the DCFTA. *Problemy Zarzadzania — Management Issues*, 18 (4), 101—124. <https://doi.org/10.7172/1644-9584.90.6>.
16. Kneysler, O., Kryvytska, O., Shupa, L., & Huzela, I. (2019). Assessment of the Competitive Environment of the Health Insurance Market. *Problems and Perspectives in Management*, 17 (2), 541—549.
17. Naseeb, H., Diab, A., & Metwally, A. (2021). The Impact of the COVID-19 Pandemic on Medical and Travel Insurance Pricing and Fraud Risks: An Exploratory Study. *Journal of Risk Management in Financial Institutions*, 14 (1), 59—71.
18. Pro strakhuvannya: Zakon Ukrainy 07.03.1996 № 85/96-VR (u chynnii redaktsii) [On insurance: Law of Ukraine of March 7, 1996 № 85/96-VR (in the current wording)]. (1996). *Zakonodavstvo Ukrainy — Legislation of Ukraine*. Retrieved from <https://zakon.rada.gov.ua/laws/show/85/96-%D0%B2%D1%80> [in Ukrainian].
19. Derzhavna komisiia z rehuliuвання ryнкiv finansovykh posluh Ukrainy. (2010). Pro zatverdzhennia Kharakterystyky ta klasyfikatsiinykh oznak vydiv dobrovilnoho strakhuvannya: Rozporiadzhennia vid 09.07.2010 r. № 565 (u chynnyi redaktsii) [On approval of the Characteristics and classification features of types of voluntary insurance: Order dated 09.07.2010 № 565 (as amended)]. *Zakonodavstvo Ukrainy — Legislation of Ukraine*. Retrieved from <https://zakon.rada.gov.ua/laws/show/z1119-10> [in Ukrainian].
20. Community Code on Visas (Visa Code): Regulation (EC) № 810/2009 of the European Parliament and of the Council of 13 July 2009. (2009). Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02009R0810-20200202>.
21. Antymonopolnyi komitet Ukrainy. (2002). Pro zatverdzhennia Metodyky vyznachennia monopolnoho (dominuiuchoho) stanovyshcha subiektiv hospodariuvannya na rynku: rozporiadzhennia vid 05.03.2002 № 49-r [On approval of the Methodology for determining the monopoly (dominant) position of economic entities in the market: order dated 05.03.2002 № 49-r]. *Zakonodavstvo Ukrainy — Legislation of Ukraine*. Retrieved from <http://zakon.rada.gov.ua/laws/show/z0317-02> [in Ukrainian].
22. Natsionalna komisiia shcho zdiisniuie derzhavne rehuliuвання u sferi ryнкiv finansovykh posluh. (n. d.). *Richni zvity [Annual reports]*. Retrieved from <https://nfp.gov.ua/ua/Richni-zvity-Natskomfinposluh.html> [in Ukrainian].
23. Statystyka strakhovoho rynku Ukrainy [Ukrainian Insurance Market Statistics]. (n. d.). *Forinsurer*. Retrieved from <https://forinsurer.com/stat>.
24. Dzhuha, V. M., Kuricyn, A. V., & Shtapova, I. S. (2012). *Ekonomika otraslevykh ryнкiv [Economy of industry markets]*. Moscow: Knorus [in Russian].
25. Gutorov, A. O. (2011). Lorenz Diagram Application for Measuring the Concentration of Farming Industry. *Statistics of Ukraine*, 2 (53), 4—9.
26. Glasser, G. J. (1962). Variance Formulas for the Mean Difference and Coefficient of Concentration. *Journal of the American Statistical Association*, 57 (299), 648—654.

The article is recommended for printing 15.12.2021

© Suslikov A., Sirenko O., Karman S., Pochernina N., Zakharchenko O.,  
Vasylchenko O.