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***Research paper***



# Vehicle Insurance Market Competitive Position Estimation in Ukraine in Terms of European Integration

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**Abstract**

Place and importance of vehicle insurance at insurance services market in Ukraine is defined. Interaction mechanism between vehicles insurance subjects and objects is revealed. Complex estimation of domestic vehicle insurance market is carried out. Share of vehicles insurance in the structure of insurance market of Ukraine is defined. Analysis of the main indices of vehicles insurance market activity is conducted. Algorithm of Ukrainian vehicles insurance market competitive position estimation based on the method of multidimensional comparable analysis consisting of five stages is suggested. Types of vehicles insurance according to effectiveness indices are specified. Methodical grounds of Ukrainian vehicles insurance market competitive position estimation are defined. Prognostic model of vehicles insurance market competitive position is created grounded on simple linear regression which will enable modeling of vehicles insurance types condition in future according to European requirements.

***Keywords***: *competitiveness, insurance, insurance services market, profitability, vehicle insurance.*

## 1. Introduction

The most common type of property insurance at both domestic and world financial services markets is vehicle insurance. Under current conditions vehicle insurance market is in a difficult financial situation due to of internal and external factors influence.In terms of European integration it is very important for Ukraine to improve vehicles insurance market condition for its meeting the level of European standards. The world practice testifies that such insurance services market influences the country economy development as a whole and the population social security provision, as far as vehicles insurance is aimed at citizens' property interests protection in case of insured event occurrence involving motor vehicles. Due to the fact that Ukraine is currently at the stage of developing competitive vehicles insurance market, its reforming and adjusting in accordance with worldwide generally accepted requirements, the issue of creating a mechanism of defining vehicles insurance types competitive position is essential.

## 2. Problem Search

Insurance market development general theoretical issues and practical aspects of functioning are represented in the works by V.Bazylevych, V.Virchenko, V.I.Plysa, N.Vnukova, S.S.Osadets, S.Slobodianiuk, H.Tolkacheva and many others [1 – 4].
Insurance market state regulation under European integration was investigated by Achkasova S.A., which grounded the alternatives choice for providing Ukrainian insurance market effective state regulation ensuring [5]. Analysis of global practice for general insuring in the process of structural reforms and economic stabilization enabled scientists to provide recommendations referring the certificate of improvement in general insurance companies current [6 – 8]. Analysis of Slovak insurance market during recent years made it possible to conclude about insurance sector sufficient effectiveness and reveal negative tendencies in insurance against risks in vehicles [9].
Thus, scientific works analysis and authors' research enabled us to carry out the following: investigate the place and importance of vehicle insurance at insurance services market and define mechanism of interaction between vehicles insurance subjects and objects; conduct complex estimation of domestic vehicle insurance market competitiveness; develop algorithm for estimation vehicles insurance market competitive position based on the method of multidimensional comparable analysis which will enable specifying types of vehicles insurance according to effectiveness indices and increase insurance portfolio profitability.
The aim of the article is to ground and develop methodical approaches to estimating competitive position of insurance market in Ukraine.
To reach the main aim there was used a conjunction of general scientific and special methods of research: systemic and complex approaches used to define vehicles insurance development principles at insurance services market; statistical and coefficient analysis used to study, compare and interpret factual data as for estimating indices of vehicles insurance market competitiveness; economic and mathematic modeling methods used to develop algorithm and create prognostic model of vehicles insurance types competitive position; tabular and graphic method used to reflect the separate indices dynamics and structure.
In Ukraine appearance of vehicles insurance is connected to rapid infrastructure development and globalization process and consequently to increase in number of vehicles which means increase in the risk level while using motor vehicles and population need in insurance protection from potential expenses as a result of damage or destroying of property and damage to life and health. These in

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turn require from vehicles insurance market to define vehicles insurance types competitive positions in accordance with the global requirements.

One of vehicles insurance market functioning principles is separating particular types of insurance services. Vehicle insurance structure is represented at (Fig. 1).

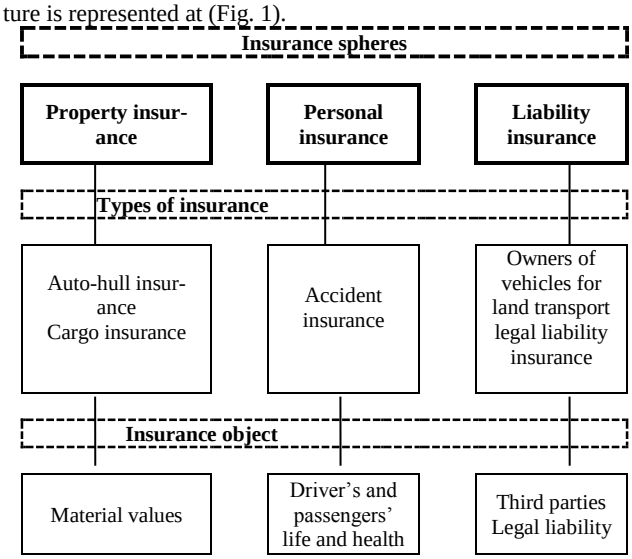



**Fig. 1:** Vehicles insurance structure

Picture 1 illustrates vehicle insurance coverage of all types of insurance (property, personal and liability insurance) as far as vehicles insurance objects can include property, life and health or civil liability of motor vehicle driver third parties liabilities [10]. Among vehicles insurance market services the following ones are in the biggest demand:

1. Vehicles insurance ("motor hull insurance – KASKO") is vehicle insurance market insurance product targeted at protecting insured person's property from losses which can occur due to damages, complete destroying, loosing of a vehicle or its separate parts in case of insured event occurrence stipulated by the terms of the insurance contract. This type of insurance is subject to all types of vehicles.

2. Compulsory insurance of land vehicles owners civil liability or compulsory motor vehicle liability insurance (CTPL) provides insurance protection to the victim in result of an accident at the insured fault and provides insurance compensation payment from the insurance company in the amount that may be charged from the vehicle owner for civil suit in favor of a third person for damage to life, health or disability, as well as for damage or destruction of property that is in his possession. An accident with compulsory insurance of civil liability is such an accident where an insured vehicle became a participant.

3. "Green card" is a certificate of the unified form for compulsory motor third party liability insurance applicable in the member-countries of the given international system without which the person is not entitled to drive a car within the "Green card" members-countries. "Green card" certificate cost considerably exceeds CMTRL agreements cost. Such price level of "Green card" international agreement is related to high limits of insurance indemnity in EU countries which considerably exceed corresponding limits in Ukraine. In particular, certificate price depends on the agreement action territory which can include "All the Europe" or "Western Europe" and category of a vehicle.

4. Insurance of goods transported by motor vehicles ("CARGO") is a kind of motor insurance aimed at protecting the insurer's property interests related to the possession, use or disposal of goods transported by motor vehicle and which may be damaged.

5. A special category of compulsory insurance is compulsory personal insurance against accidents in transport as far as transport is a source of increased danger to its users.

It is defined that at the current stage of insurance market development motor insurance prevails in the insurance services portfolio of most Ukrainian insurers both in terms of contracts made and in the amount of insurance premiums and insurance payments. Correspondingly vehicles insurance market condition in direct ratio influence insurers' activity financial results. Thus, vehicles insurance market in Ukraine needs a comprehensive analysis in order to identify existing competitive problems and disadvantages that can negatively affect insurance market conditions as a whole and take measures to resolve them in a timely manner.

Insurance market condition analysis in Ukraine has revealed that vehicles insurance remains the main constituent in "non-life" insurance structure in Ukraine, which requires research and estimating dynamics of its main indices (Table 1) [11 – 13].

**Table 1:** Vehicles insurance share at insurance market in Ukraine, mln UAH

| Indices | Years | | | | Variation | |
|---|---|---|---|---|---|---|
| | | | | | absolute | relative |
| | 2014 | 2015 | 2016 | 2017 | mln UAH | % |
| Gross vehicle insurance premiums | 6560,0 | 7871,6 | 9277,5 | 10613,0 | 4053,0 | 61,78 |
| "Non-life" gross insurance premiums | 24607,5 | 27549,4 | 32414,2 | 40518,1 | 15910,6 | 64,66 |
| Vehicle insurance premiums share, % | 26,66 | 28,57 | 28,62 | 26,19 | -0,47 | -1,760 |
| Gross vehicle insurance compensation | 2873,9 | 3187,2 | 3868,3 | 4997,8 | 2123,9 | 73,90 |
| "Non-life" gross insurance compensations | 4826,2 | 7608,9 | 8421,2 | 9980,5 | 5154,3 | 106,80 |
| Vehicle insurance compensation share, % | 59,55 | 41,89 | 45,94 | 50,08 | -9,47 | -15,90 |

In the result of the analysis it was revealed that during 2014 – 2017 vehicles insurance in Ukraine made about 27% which testifies about stable demand for insurance services of this type. 15,9% decrease in vehicles insurance payments in 2017 as compared to 2014 is compared to decrease in the riskiness of operating activities for insurers and increase in number of reinsurance companies in Ukraine.

One of indices which enable defining vehicles insurance market competitive positions is number of contracts made at each of the types separately (Table 2).

**Table 2:** Vehicle insurance contracts number made during 2014 – 2017

| Indices | Years | | | | Variation | |
|---|---|---|---|---|---|---|
| | 2014 | 2015 | 2016 | 2017 | absolute mln UAH | relative % |
| KASKO | 334227 | 247520 | 281321 | 317059 | -17168 | -5,14 |
| CTPL | 7459440 | 6790013 | 7029925 | 7408257 | -51183 | -0,69 |
| "Green card" | 695878 | 760766 | 716066 | 702262 | 6384 | 0,92 |
| Total | 8489545 | 7798299 | 8027312 | 8427578 | -61967 | -0,73 |

Table 2 shows that the number of vehicles insurance agreements in Ukraine decreased by 0,73% in 2014 – 2017 [11 – 13]. The smallest index was observed in 2015 because it was the year when insurers had to increase insurance the insurance tariff, respectively the amount of insurance premiums that customers had to pay for the provision of insurance certificate increased. This happened under economic crisis, inflation and devaluation of the national unit. As a result, service centers increased the cost of servicing and repairing cars due to the increased cost of vehicles parts at Ukrainian market.

Motor hull insurance KASKO faced the most dramatic decrease in the number of agreements. Their number decreased by 5,14% during 2014 – 2017.

"Green card" insurance certificate has positive growing tendency, the number of agreements increased by 0,92% for the study time.

The analysis of concluded vehicles insurance agreements structure according to the subjects shows that 87% of motor insurance contracts were concluded with physical persons and 12% with legal entities during 2014 – 2017.

In order to determine the vehicles insurance market competitive position there was conducted analysis of gross insurance premiums, which significantly increased – by 61.78% during the period investigated (Table 3) [11 – 13].

**Table 3:** Vehicles insurance market gross insurance premiums during 2014 – 2017

| Index | | KASKO | CTRL | «Green card» | Total |
|---|---|---|---|---|---|
| 2014 | | | | | |
| mln UAH | | 3410,8 | 2554,8 | 594,4 | 6560,0 |
| Share, % | | 51,99 | 38,95 | 9,06 | 100,00 |
| 2015 | | | | | |
| mln UAH | | 3827,4 | 3028,5 | 1015,7 | 7871,6 |
| Share, % | | 48,62 | 38,47 | 12,90 | 100,00 |
| 2016 | | | | | |
| mln UAH | | 4604,0 | 3468,1 | 1205,4 | 9277,5 |
| Share, % | | 49,63 | 37,38 | 12,99 | 100,00 |
| 2017 | | | | | |
| mln UAH | | 5570,1 | 3745,3 | 1297,6 | 10613,0 |
| Share, % | | 52,48 | 35,29 | 12,23 | 100,00 |
| Variation | +/– | 2159,3 | 1190,5 | 703,2 | 4053,0 |
| | % | 63,31 | 46,60 | 118,30 | 61,78 |

This is enabled by expenses of increase in insurance premiums by all the vehicles insurance services during 2014 – 2017. The most significant growth was observed according to "Green card" certificate, gross premiums for this insurance certificate increased by 118,30%. Among the main reasons for such a growth there is visa-free arrangements implementing between EU and Ukraine, which is one of the European integration conditions. That is why implementation of such mechanisms will enable enlargement in demand for "Green card" insurance certificate obtaining, and organize the system for their efficient selling in Ukraine.

Analysis of gross premiums share in the vehicles insurance market according to types revealed a voluntary insurance increase by 0.49% during 2014 – 2017 (Fig. 2) [15].

In general dynamics of gross vehicles insurance premiums according to the types over the study period has a volatile character, which is associated with an increase in the value of insurance certificates and the number of those willing to buy them.

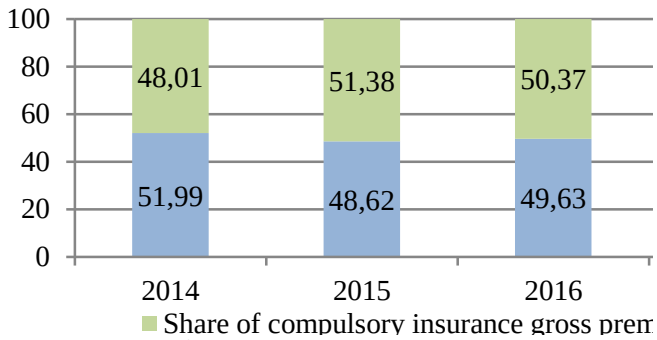



**Fig. 2:** Dynamics of vehicles insurance gross premiums by types

The next stage in defining vehicles insurance market competitive position includes analysis of net insurance premiums (Table 4).

**Table 4:** Net vehicle insurance market premiums in Ukraine during a 2014 – 2017

| Index | | KASKO | CTRL | «Green card» | Total |
|---|---|---|---|---|---|
| 2014 | | | | | |
| mln UAH | | 3059,8 | 2403,7 | 484,0 | 5947,5 |
| Share, % | | 51,45 | 40,42 | 8,14 | 100,00 |
| 2015 | | | | | |
| mln UAH | | 3580,4 | 2907,4 | 834,6 | 7322,4 |
| Share, % | | 48,90 | 39,71 | 11,40 | 100,00 |
| 2016 | | | | | |
| mln UAH | | 4305,3 | 3366,2 | 981,5 | 8653,0 |
| Share, % | | 49,75 | 38,90 | 11,34 | 100,00 |
| 2017 | | | | | |
| mln UAH | | 5111,0 | 3690,0 | 1057,1 | 9858,1 |
| Share, % | | 51,85 | 37,43 | 10,72 | 100,00 |
| Variation | +/– | 2051,2 | 1286,3 | 573,1 | 3910,6 |
| | % | 67,04 | 53,51 | 118,41 | 65,75 |

Consequently net insurance premiums in 2014 – 2017 increased by 65,75% in both vehicle insurance as a whole and in every of its types [11 – 13, 15]. The biggest amount of insurance premiums is accounted in "Green card" police which showed 118,41% increase. Structure of gross insurance various types compensation under defining vehicle insurance market competitive position require separate analyses (Table 5) [15].

**Table 5:** Vehicle insurance market gross insurance compensation by the types in Ukraine

| Index | | KASKO | CTRL | «Green card» | Total |
|---|---|---|---|---|---|
| 2014 | | | | | |
| mln UAH | | 1689,2 | 987,9 | 196,8 | 2873,9 |
| Share, % | | 58,78 | 34,37 | 6,85 | 100,00 |
| 2015 | | | | | |
| mln UAH | | 1803,7 | 1101,5 | 282,0 | 3187,2 |
| Share, % | | 56,59 | 34,56 | 8,85 | 100,00 |
| 2016 | | | | | |
| mln UAH | | 2050,1 | 1407,3 | 410,9 | 3868,3 |
| Share, % | | 53,00 | 36,38 | 10,62 | 100,00 |
| 2017 | | | | | |
| mln UAH | | 2623,7 | 1887,5 | 486,6 | 4997,8 |
| Share, % | | 52,50 | 37,77 | 9,73 | 100,00 |
| Variation | +/– | 934,5 | 899,6 | 289,8 | 3910,6 |
| | % | 55,32 | 91,06 | 147,26 | 73,90 |

According to Table 5, vehicle insurance market gross insurance compensation by the types in Ukraine increased by 73,9% during 2014 – 2017, which means that growth rate of insurance premiums significantly outstripped the growth of insurance compensation from insurers. It is explained by increase in number of those willing to purchase insurance certificate of internal and international agreement. It was defined that, as well as insurance premiums, vehicle insurance gross insurance premiums increase in proportion to all types of insurance services during the investigated period.

Thus the level of vehicles insurance compensation in Ukraine demonstrated 2,1% decrease during the period analyzed. Decrease

by 2,4% is also observed under KASKO vehicles insurance. At the same time, vehicles insurance compensation under CMTRL insurance certificate and "Green card" international insurance contract there is an increase by 11.7% and 4.4% respectively. According to the calculations received, KASKO vehicle insurance with about 50% has the largest share and "Green card" with almost 10% in in the structure of insurance compensations and payments the period of 2014 – 2017.

The peculiarity of an insurance company activity as a financial market subject is carrying out reinsurance operations. Therefore, it is expedient to analyze the dynamics of premiums transferred for reinsurance, by types of vehicle insurance (Table 6) [14].

**Table 6:** Initial reinsurance under vehicles insurance types, mln UAH

| Indices | Years | | | | Variation | |
|---|---|---|---|---|---|---|
| | 2014 | 2015 | 2016 | 2017 | absolute mln UAH | relative % |
| KASKO | 520,1 | 544,6 | 720,7 | 904,1 | 384,0 | 73,83 |
| CTPL | 185,6 | 220,7 | 271,3 | 243,0 | 57,4 | 30,93 |
| "Green card" | 151,0 | 246,8 | 315,0 | 343,0 | 192,0 | 127,15 |
| Total | 856,7 | 1021,1 | 1307,0 | 1490,1 | 633,4 | 73,93 |

According to Table 6, premiums transferred by insurance companies to reinsurers are gradually increasing during the period investigated. In the period from 2014 to 2017 the level of initial reinsurance for vehicles transport insurance grew by 73.83%. The biggest increase by 127,15% is observed under "Green card" certificate, the smallest – by 30.93% - under CMTRL vehicles insurance. It means that's insurers are trying to increase and maintain their solvency level. It is also closely related to increase in amount of insurance premiums obtained by insurance companies.

The estimation of insurance services efficiency indices is conducted due to analysis of vehicles market competitive positions in Ukraine; the results obtained are represented in Table 7.

**Table 7:** Results of insurance services efficiency indices estimation

| Indices | Years | | | | Deviation |
|---|---|---|---|---|---|
| | 2014 | 2015 | 2016 | 2017 | |
| Insurance risk index | 0,57 | 0,64 | 0,66 | 0,70 | 0,13 |
| Solvency reversal index | 0,36 | 0,15 | 0,42 | 0,85 | 0,49 |
| Liquidity ratio | 0,35 | 1,16 | 0,13 | 0,43 | 0,08 |
| Compensation coefficient by the services types | 0,44 | 0,40 | 0,42 | 0,47 | 0,03 |
| Premiums increase in a year | -0,02 | 0,20 | 0,18 | 0,14 | 0,16 |
| Capital increase in a year | 0,03 | -0,17 | -0,11 | 0,08 | 0,05 |
| Return on equity | 0,07 | -0,02 | 0,02 | 0,03 | -0,04 |
| Premiums share transferred to reinsurers | 0,13 | 0,13 | 0,14 | 0,14 | 0,01 |

In the result of analysis there was defined the increase in risk indices and solvency of vehicles insurance by 0.13 and 0,49 respectively. Altogether, such a positive dynamics of the indices defined is not conducive to insurers, as far as it testifies an increase in the risk of vehicles insurance. The most noticeable increase in vehicles insurance efficiency indices is observed according to premiums grow for a year, which makes 0,01. Is occurs by expense of increase in vehicles insurance activity amount.

Estimation of vehicles insurance market competitive position in Ukraine under European integration defined the purposefulness of analysis of insurance companies by vehicles insurance types [15].

Research conducted testifies the lack of an insurance company which would occupy the first place in rating made by the amount of insurance premiums collected. It also should be noted that by the compulsory insurance of civil liability of motor vehicle owners (CTPL) and "Green card" international agreement, the leading insurance companies obtain practically equal amounts of insurance sums. Average rate of insurance certificates should also be taken into consideration: it made 5 – 6% of the sum insured fir KASKO in 2016; 1296 UAH for CTRL, and 765 for "Green Card" with the action on the "All Europe" territory and 557 UAH for the "Eastern Europe" territory for 15 days. That is, the average cost of the CTRL certificate is lower than that of the Green Card.

Therefore, the conducted analysis of vehicles insurance market condition based o absolute and relative variations enables defining the market competitive advantage. At the same time it is rightful to note that estimation of vehicles insurance market competitive positions should not only include defining of financial and economic indices but further development abilities. In this connection, with the aim of vehicles insurance market competitive positions complex estimation it is reasonable to use method of multidimensional comparative analysis which includes developing an algorithm for defining vehicles insurance competitive positions types by efficiency indices. The said algorithm includes conducting the following stages: construction of output data matrix and competitive positioning matrix for motor insurance types; calculation of competitive positions for vehicles insurance types and constructing a predictive model of competitive positioning for vehicles insurance types (Fig. 3).

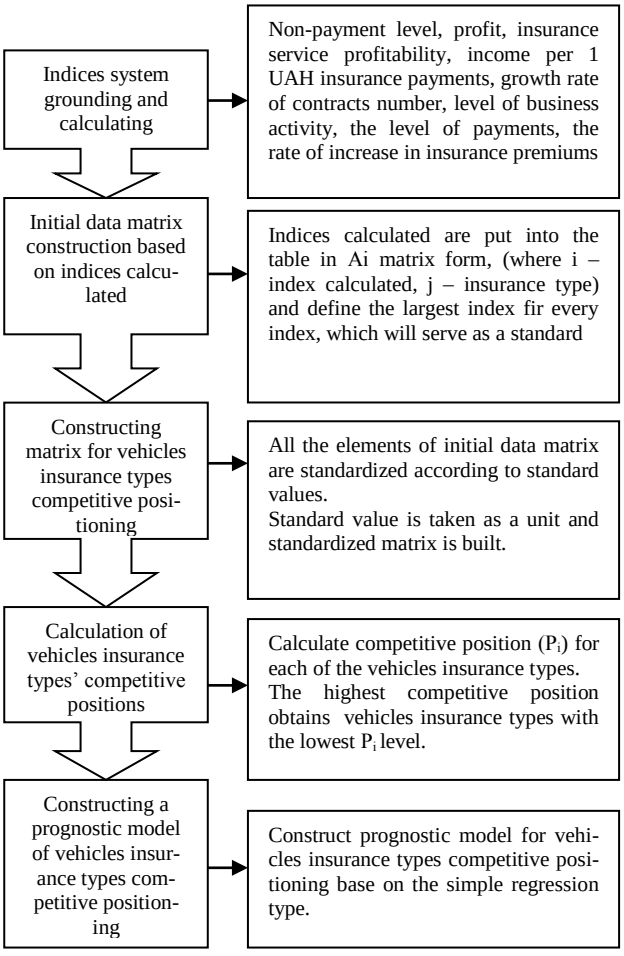



**Fig. 3:** Algorithm for defining vehicles insurance types competitive positions

Method of multidimensional comparative analysis enables calculating competitive position for separate vehicles insurance certificate as compared to insured products with the help of a range of interconnected factors.

We suggest constructing initial data matrix based on calculating vehicles insurance types' efficiency indices (Table 8).

**Table 8:** Initial data matrix

| Index | KASKO | CTRL | «Green card» | Standard value |
|---|---|---|---|---|
| 2017 | | | | |
| Non-payment level | 0,555 | 0,594 | 0,659 | 0,659 |
| Profit, mln UAH | 1490,6 | 1351,9 | 440,1 | 1490,6 |
| Insurance service profitability | 0,324 | 0,390 | 0,365 | 0,390 |
| Profits per 1 UAH of insurance compensations | 0,769 | 0,969 | 0,706 | 0,969 |
| Rate of agreements number growth | 1,137 | 1,035 | 0,941 | 1,137 |
| Business activity level | 0,091 | 0,069 | 0,024 | 0,091 |
| Payment level | 0,445 | 0,406 | 0,341 | 0,445 |
| Insurance premiums growth rate | 1,203 | 1,145 | 1,187 | 1,203 |
| 2016 | | | | |
| Non-payment level | 0,529 | 0,636 | 0,722 | 0,722 |
| Profit, mln UAH | 454,9 | 1018,5 | 576,0 | 1018,5 |
| Insurance service profitability | 0,119 | 0,336 | 0,567 | 0,567 |
| Profits per 1 UAH of insurance compensations | 0,590 | 0,700 | 0,549 | 0,700 |
| Rate of agreements number growth | 0,741 | 0,910 | 1,093 | 1,093 |
| Business activity level | 0,063 | 0,050 | 0,017 | 0,063 |
| Рівень виплат | 0,471 | 0,364 | 0,278 | 0,471 |
| Payment level | 1,122 | 1,185 | 1,709 | 1,709 |
| 2015 | | | | |
| Non-payment level | 0,505 | 0,613 | 0,669 | 0,669 |
| Profit, mln UAH | 209,4 | 1058,8 | 147,2 | 1058,8 |
| Insurance service profitability | 0,061 | 0,414 | 0,248 | 0,414 |
| Profits per 1 UAH of insurance compensations страхових платежів | 0,557 | 0,801 | 0,579 | 0,801 |
| Rate of agreements number growth | 0,619 | 0,872 | 0,965 | 0,965 |
| Business activity level | 0,057 | 0,043 | 0,010 | 0,057 |
| Payment level | 0,495 | 0,387 | 0,331 | 0,495 |
| Insurance premiums growth rate | 0,913 | 1,020 | 1,388 | 1,388 |

Construction of initial data matrix based on indices calculated enabled revealing the following tendencies.

It was defined that the most profitable insurance type in 2015 – 2016 was compulsory third-party liability insurance (CTRL), and KASKO motor vehicles insurance in 2017. At the same time the least profitable motor vehicles insurance certificate in 2015 and 2017 was "Green card" and KASKO in 2016. It was also revealed that the highest non-payment rate at insurance market during the study period was observed by "Green card" certificate, which testifies about profitability of such vehicles insurance type for insurance companies. The lowest level of insurance service profitability in 2015 – 2017 has KASKO, which testifies about the lowest profitability of domestic insurers "non-life" assets invested into this insurance product as compared to other analyzed ones. The highest growth rates for insurance premiums and number of agreements sighed in 2015 – 2016 are observed by "Green card" certificate and in 2017 by KASKO motor hull insurance.

The next stage will include constructing the matrix for vehicles insurance types competitive positioning and defining weighting coefficient (Table 9) [11 – 13, 15].

**Table 9:** Standardized indices matrix

| Index | KASKO | CTRL | «Green card» | Standard Value | Weighting coefficient |
|---|---|---|---|---|---|
| 2017 | | | | | |
| Non-payment level | 0,842 | 0,902 | 1,0 | 1,0 | 0,2 |
| Profit, mln UAH | 1,0 | 0,907 | 0,295 | 1,0 | 0,2 |
| Insurance service profitability | 0,831 | 1,0 | 0,937 | 1,0 | 0,2 |
| Profits per 1 UAH of insurance compensations | 0,794 | 1,0 | 0,729 | 1,0 | 0,2 |
| Rate of agreements number growth | 1,0 | 0,911 | 0,828 | 1,0 | 0,2 |
| Business activity level | 1,0 | 0,753 | 0,262 | 1,0 | 0,2 |
| Payment level | 1,0 | 0,911 | 0,766 | 1,0 | 0,2 |
| Insurance premiums growth rate | 1,0 | 0,952 | 0,987 | 1,0 | 0,2 |
| 2016 | | | | | |
| Non-payment level | 0,732 | 0,881 | 1,0 | 1,0 | 0,2 |
| Profit, mln UAH | 0,447 | 1,0 | 0,566 | 1,0 | 0,2 |
| Insurance service profitability | 0,21 | 0,593 | 1,0 | 1,0 | 0,2 |
| Profits per 1 UAH of insurance compensations | 0,843 | 1,0 | 0,785 | 1,0 | 0,2 |
| Rate of agreements number growth | 0,677 | 0,833 | 1,0 | 1,0 | 0,2 |
| Business activity level | 1,0 | 0,791 | 0,265 | 1,0 | 0,2 |
| Payment level | 1,0 | 0,772 | 0,589 | 1,0 | 0,2 |
| Insurance premiums growth rate | 0,657 | 0,694 | 1,0 | 1,0 | 0,2 |
| 2015 | | | | | |
| Non-payment level | 0,755 | 0,917 | 1,0 | 1,0 | 0,2 |
| Profit, mln UAH | 0,198 | 1,0 | 0,139 | 1,0 | 0,2 |
| Insurance service profitability | 0,148 | 1,0 | 0,598 | 1,0 | 0,2 |
| Profits per 1 UAH of insurance compensations | 0,695 | 1,0 | 0,722 | 1,0 | 0,2 |
| Rate of agreements number growth | 0,641 | 0,904 | 1,0 | 1,0 | 0,2 |
| Business activity level | 1,0 | 0,749 | 0,174 | 1,0 | 0,2 |
| Payment level | 1,0 | 0,781 | 0,669 | 1,0 | 0,2 |
| Insurance premiums growth rate | 0,658 | 0,735 | 1,0 | 1,0 | 0,2 |

On the basis of standardized matrix, vehicles insurance types competitive positions are calculated and their place is defined (Table 10).

**Table 10:** Results of vehicles insurance types competitive comparative positioning

| Index | KASKO | CTRL | "Green card" |
|---|---|---|---|
| 2017 | | | |
| Competitive position | 0,139 | 0,140 | 0,491 |
| Place | I | II | III |
| 2016 | | | |
| Competitive position | 0,500 | 0,282 | 0,434 |
| Place | III | I | II |
| 2015 | | | |
| Competitive position | 0,595 | 0,199 | 0,595 |
| Place | II | I | II |

Based on vehicles insurance types competitive positioning calculations obtained, their condition prognostic model was created (Fig. 4).

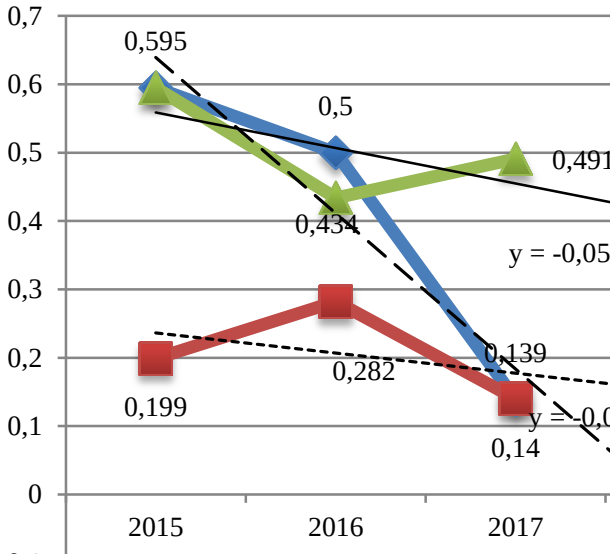



**Fig. 4 :** Vehicles insurance types competitive positioning prognostic model

Thus based on the defining vehicles insurance types competitive positioning with the method of multidimensional comparative analysis it is rightful to state that the highest competitive position belongs to KASKO motor hull insurance and compulsory third-party liability insurance (CTRL), while "Green card" obtains much lower competitive position by the efficiency indices. The vehicles insurance types competitive positioning prognostic model built enabled to define that in 2018 the highest integrated comparative index among vehicle insurance types will have KASKO motor hull insurance and the lowest – "Green card". Preliminary results of estimating vehicles insurance types competitive market positions obtained testify about growth in demand for "Green card" certificate which in future will enable increase in its competitive positions due to European integration supportive environment.

## 3. Conclusions

Thus insurance market development is an important precondition of population welfare increase and steady economic development. As a result of insurance market complex analysis there was defined a 14,4% increase in amount of gross insurance premiums in vehicles insurance (KASKO, CTRL, "Green card") and amount of gross insurance compensations increase in 29,2%, which corresponds to general trends in its development.

Algorithm of defining and prognostic model for vehicles insurance competitive positions types was suggested based on the multidimensional comparative analysis, using of which will enable activation of marketing activities in insurance companies, research insurance services market condition, study demand for insurance services and organize efficient system of their selling which will provide effective further functioning at the vehicles insurance market.

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