

THE INFLUENCE OF CLAIMS PAYMENTS ON THE INVESTMENT PORTFOLIO OF INSURANCE COMPANIES

Nemanja Pantić¹², Karmen Mikulić¹³, Miljan Leković¹⁴

Original scientific paper

Abstract

The need for insurance dates back from the distant past. A lot of time has passed from the primitive insurance forms to its institutionalization and legal implementation. The modern insurance market, regardless of its global character is not equally developed. The unevenness of development is one of its main characteristics, often connected with the achieved level of economic development. Numerous factors influences on the investment activities of insurance companies as the carriers of the insurance market. The subject of this paper will be the examination of the connection of payments of insured sums (damages) on the redistribution of the investment portfolio on the capital market. For this purpose will be formulated two hypotheses, separately for the non-life and life insurance market. Examination of the relationship between the considered variables will be conducted by using SPSS statistical software, ie the Chi-squared test. Regardless of proving the hypotheses will not be possible to draw unique conclusions for both markets.

Keywords: *insurance market, life insurance, non-life insurance, stok, municipality bonds*

JEL: *G11, G22, G52, H54*

Introduction

Economic activities are faced with numerous risks that can negatively affect the on the expected result, in case of its implementation. (Černohorská & Kľofát,

¹² Nemanja Pantić, Assistant Professor, University of Kragujevac, Faculty of Hotel Management and Tourism in Vrnjačka Banja, Vojvodanska 5A, 36210 Vrnjačka Banja, R. Serbia. Phone: +381 36 515 00 24. E-mail: nemanja.pantic@kg.ac.rs. ORCID ID (<https://orcid.org/0000-0003-0030-6950>)

¹³ Karmen Mikulić, Teaching Assistant, Faculty of Tourism and Hospitality Management, Opatija, University of Rijeka, Naselje Ika, Primorska 42, R. Croatia. Phone: +385 51 294 680. E-mail: karmen.mikulic@fthm.hr. ORCID ID (<https://orcid.org/0000-0003-0417-8693>)

¹⁴ Miljan Leković, Associate Professor, University of Kragujevac, Faculty of Hotel Management and Tourism in Vrnjačka Banja, Vojvodanska 5A, 36210 Vrnjačka Banja, R. Serbia. Phone: +381 36 515 00 24. E-mail: m.lekovic@kg.ac.rs. ORCID ID (<https://orcid.org/0000-0002-4952-3991>)

2021). Risks are not only related with this type of activity but they are present in every individual's daily life. The dynamic development of the economy, which gets the contours of its modern character during the first industrial revolution, intensified the growth of living standards and awakened people's awareness of possible risks and the need to be avoided or reduced on the tolerable level. (Kielholz, 2021; Antić et al., 2021). Insurance based on the principles of solidarity and reciprocity has its roots in the distant past. The need to pool risks and bear damages collectively dates back to the period of the original human community, while the documented evidence is related to the BC period which are mainly related with the trade caravans and the provision of cargo transport (Koijen & Yogo, 2022). In the Middle Ages, insurance was implemented in many legal codes, where the legal code of Emperor Dušan from the XIV century should be singled out because more than 200 regulations were dedicated to insurance (Žarković, 2008, 179). Later can be found similar examples in Florence, Rome and Barcelona, but also in the territory of the Republic of Dubrovnik, where authentic insurance policies from the Middle Ages were also found and preserved. (Anđelinović et al., 2018; Čolović, 2010, 241). Turbulent periods and consequent financial crises caused, among other things, crises in the insurance markets, especially at the end of the 20th century. This consequently affected distrust in the insurance sector, which was often associated with fraud and equated with gambling. Such stereotypes were dominant in underdeveloped and developing countries. Today, it is almost impossible to imagine undertaking any business activity without some form of insurance. It is ubiquitous in all branches and sectors. Service activities and the tertiary sector are unthinkable without an insurance institute (Tepavčević, et al., 2021). Any tourist trip is unthinkable without passenger insurance (Mitrović et al., 2021). In order to gain trust, insurance companies, as insurance carriers, made their operations more transparent, paying more attention on the allocation of their free and temporarily unemployed funds (Kouwenberg, 2018). In the last two decades the activity of insurance companies on the capital market has increased (Poufinas & Tsitsika, 2018). In order to achieve their main business goal and make unexpected costs more tolerable, the assets of insurance companies are increasingly dominated by shares and bonds of the state sector. (Peleckienė & Peleckis, 2014). At the same time, it should be borne in mind that the security of placement of insurance companies is under strict control due to the high sensitivity of individuals and real entities on possible shocks and losses. (Esfandi et al., 2020). Payment of insurance claims dictates the amount of free funds that can be allocated in various markets and thus also on the capital market (Baranoff & Sager, 2009; Ristić et al., 2021). The subject of this paper will be the determination of the dependence of payments of insured sums on the activity undertaken by insurance companies on the capital market through the purchase

of shares and municipal bonds. The analysis will include insurance at the state level, with non-life and life insurance being considered separately.

Literature review

Tiefeng and Rwegasira (2006) dealt with the insurance market in China and the factors affecting the investment portfolio of insurance companies. Their conclusions shows connections between the activities on the capital market and the amounts of profit. In the years of good business results and large amounts of profit, the activity of insurance companies is directed towards riskier investment activities, i.e. buying shares and vice versa. The conclusion is that any upheavals on the insurance market have extremely negative repercussions on the activity of individuals and private sector, as well as the growth of mistrust. For this reason, insurance companies must take special care of the security of their placements and capital amounts in technical reserves.

Agic-Sabeta (2017) investigated the insurance market in Southeast Europe over a ten-year period, as well as methods to avoid systemic risks that can threaten the operations of insurance companies and thus the stability of the insurance market. The conclusions indicates the need for more significant activity of insurance companies on the capital market, especially in years of higher profits or less paid insured sums than planned. Activity on the money market should be increased in crisis periods through investing in short-term securities of the state sector.

Chevallier and Müller (2014) performed an analysis of the insurance market of developed countries, i.e. the impact of payment of compensation claims on financial market activities. As one of the reasons for the uneven development of insurance companies they indicate the risky placements in years when the payment of compensation claims was higher than planned, which led some companies to liquidity problems. This problem was solved with capital from tcnical reserves. In the long term, inadequate placement of currently idle funds may lead to solvency problems, which may affect the entire insurance market. That is the reason why are planned and carefully selected activities on the capital market of key importance for the stability of the insurance market and thus the financial system.

Hamidi et al. (2014) analyzed activities of the insurance companies on the capital market based on decisions regarding to its current condition. Insurance companies are more active on this market during periods of its stability and vice versa. They noticed that the activities and decisions were not related to the achieved business results, so they concluded that the chance for additional profit was lost and the capital remained trapped. That's the reason they proposed a

model that can insurance companies use decision making. The emphasis should be on the success of their business, and not on the current state of the financial market. They also suggested that the main parameter for possible activities should be the amount of paid insured sums paid based on realized insured risks.

Chache et al. (2021) analyzed the investment activity of 63 insurance companies in Kenya. Considering the underdeveloped insurance market, there are big differences in the business success of the insurance companies. The participation of small insurance companies along with a couple of large ones is evident. Also, caution and fear of risky investments results in the inactivity of small companies on the capital market. The analysis showed the need to participation on the capital market as a necessary condition for the progress of the insurance market. A big obstacle is insufficient professional staff, but also distrust in insurance, which is a consequence of the insufficiently achieved level of economic development, which is a condition for the development of the insurance market.

Research methodology

For the purpose of analysis of dependence, i.e. the impact of changes in payments of insured sums on activities on the capital market will be used the data at the state level of selected countries in the period 2014-2019. In order to determine that dependence and examine the hypotheses, will be used the results of the Chi-square test on the mentioned sample.

In theory the model can be presented as follows:

$Z_{1,2}$ – change in share of stocks and municipality bonds in the investment portfolio of non-life and life insurance

$Y_{1,2}$ – change in payments of insured sums of non-life and life insurance

The values of the dependent variables $Z_{1,2}$ can be represented as

$$Z_{1,2}: R(Z) = \{s_{1,2}, \dots, s_{r1,r2}\} \quad (1)$$

The values of the independent variables $Y_{1,2}$ can be represented as

$$Y_{1,2}: R(Y) = \{m_{1,2}, \dots, m_{n1,n2}\} \quad (2)$$

$$\text{A set of feature values } (Z,Y): R [(Z,Y)] = \{(s_k, m_l) : 1 \leq k \leq r, 1 \leq l \leq n\} \quad (3)$$

r_{kl} – frequency of (s_k, m_l) in the sample

r_k – marginal frequency of s_k in the sample

p_l – marginal frequency of m_l in the sample

$$r_k = \sum_{l=1}^n f_{kl} \qquad p_l = \sum_{k=1}^r f_{kl}$$

(4)

The hypotheses can be formulated as follows:

H_1 : There is a connection between changes in payments of insured sums and changes in the investment portfolio in the non-life insurance market

H_2 : There is a connection between changes in payments of insured sums and changes in the investment portfolio in the life insurance market

By proving H_1/H_2 hypothesis can be stated that $H_1/H_2 \approx \chi^2 ((r-1) * (n-1))$

Results and discussion of the non-life insurance market

The spectrum of services offered by non-life insurance companies is wide and the first forms of insurance were related to the insurance of movable and immovable property. (Alshammari et al., 2018; Tasić et al., 2021). Other forms of insurance and the operations of insurance companies that dealt with other types of insurance took most of their business principles from the operations of these insurance companies. The subject of the analysis will be insurance markets in 20 selected countries where was not achieved the same level of market development. In the six-year period is being considered the percentage change in claims payments based on realized risks compared to the previous year.

Table 2. Annual real growth of claims payments in non-life insurance sector for the period 2014-2019 in selected countries

Countries	Year					
	2014	2015	2016	2017	2018	2019
Turkey	3,5	17,8	6,2	9,5	-3,1	4,7
Netherlands	-7,1	-2,2	-6,4	3,9	-1,8	2,0
Finland	-19,9	-2,1	18,4	-4,8	3,7	-3,4
Estonia	2,8	10,7	-4,6	5,7	6,4	5,5
USA	10,0	8,6	2,7	6,3	5,7	4,8
Denmark	8,2	-2,3	-7,1	3,1	-5,9	6,6
Germany	-10,8	6,5	-5,7	-6,8	9,1	-10,3
Austria	0,8	-1,5	-0,5	1,8	-4,7	3,6
Sweden	10,0	-3,5	5,8	-4,6	3,6	-0,7
France	3,4	-0,8	2,4	-0,9	5,4	-4,6

Italy	-6,0	-4,6	-7,6	5,1	-2,4	4,1
Spain	-2,9	1,0	-3,6	3,4	-1,6	5,0
Slovenia	-5,5	-4,8	1,4	-2,9	2,9	4,3
Belgium	15,3	-1,7	0,3	3,8	6,8	-3,4
Norway	17,2	2,2	6,3	-5,7	-4,7	5,7
Poland	-1,7	3,5	15,8	-4,9	5,9	6,3
Israel	8,3	-0,1	14,8	-6,7	2,4	-3,9
Czech Rep	-1,3	7,6	0,8	3,9	3,6	-2,2
Slovakia	6,6	-1,6	3,6	-1,1	2,8	-4,7
Greece	-2,4	-8,5	1,7	-4,8	3,6	-2,8

Source: Authors, based on Global insurance market trends, 2014, 2015, 2016, 2017, 2018, 2019

According to the data from table 1, only on the insurance market of the USA was a continuous increase in claims payments compared to the previous year, annually on the level of more than 5%, with the exception of 2016. There is a noticeable trend on the markets of Germany, Sweden, France, Spain, Israel and Slovakia, which indicates that the year when was recorded the increase in claims payments was followed by the year of the percentage decrease. Thus, although not quite precisely, it can be said that the sum of payments is at a similar level comparing the first and last year of the observed period. The largest percentage drop in claims payments was measured on the Finnish market in 2014, where 19.9% less funds was spent for claims payments than in 2013. However, two years later, that decline was compensated by growth of 18.4%. Significant, double-digit percentage drops was measured in Germany in 2014 and 2019, by 10.8 and 10.3%, respectively. The highest growth in claims payments after Finland was achieved in Belgium and Norway in 2014 by 15.3 and 17.2% respectively, but also on the insurance markets of Poland and Israel in 2016 by 15.8 and 14.8% respectively. The following table presents the investment activity of insurance companies on the capital market, i.e. the stock market and municipality bonds market.

Table 2. Investment portfolio allocation of the non-life insurance sector for the period 2014-2019 in selected countries

Countries	Year											
	2014		2015		2016		2017		2018		2019	
	Stc	Bon	Stc	Bon	Stc	Bon	Stc	Bon	Stc	Bon	Stc	Bon
Turkey	0,6	34,7	0,8	38,3	0,9	27,2	0,6	31,6	0,8	39,5	0,6	41,4
Netherlands	11,5	35,4	8,0	39,5	9,3	40,7	8,4	41,6	9,6	37,9	8,9	38,1
Finland	24,3	64,7	29,6	65,4	18,2	55,6	19,4	54,2	17,6	55,3	18,5	55,4
Estonia	9,1	75,6	6,5	78,3	5,3	72,0	4,3	74,3	3,9	74,6	3,8	74,9

USA	19,6	68,6	23,3	64,2	14,2	73,6	14,1	74,5	13,9	75,0	13,4	75,1
Denmark	28,3	66,9	23,1	71,0	17,1	68,0	15,3	69,4	16,8	63,1	14,6	66,2
Germany	9,2	38,1	10,0	40,1	33,3	43,7	35,9	42,0	34,1	44,5	36,4	42,6
Austria	35,9	31,6	39,6	29,4	54,7	39,9	52,1	40,5	53,2	39,1	51,4	41,5
Sweden	34,6	54,2	38,3	55,6	36,9	55,8	39,5	52,4	38,4	53,6	40,6	51,2
France	20,8	60,4	23,7	61,0	14,8	71,6	14,0	72,6	13,6	72,9	13,9	71,3
Italy	5,9	79,3	6,7	78,2	5,4	84,9	5,1	85,3	5,6	85,0	5,0	86,1
Spain	10,6	42,9	12,1	43,8	9,6	83,3	9,3	83,9	8,9	84,2	8,4	85,1
Slovenia	6,3	69,5	4,2	71,0	5,1	59,7	5,3	58,1	4,9	59,3	4,6	62,5
Belgium	8,9	60,4	9,4	64,6	11,5	54,7	10,5	55,2	9,6	56,9	9,8	56,0
Norway	21,4	70,6	20,8	72,4	19,6	75,4	20,6	74,8	21,5	71,2	18,4	79,1
Poland	16,7	46,8	15,5	47,0	13,6	51,4	18,2	55,9	11,3	59,4	10,2	58,3
Israel	10,0	50,2	8,7	53,8	13,3	49,7	15,3	42,9	13,0	47,1	14,6	41,3
Czech Rep	6,3	61,4	5,0	62,4	8,9	59,8	7,8	61,8	6,9	67,6	8,1	59,4
Slovakia	-	77,3	-	78,9	-	79,5	-	81,3	-	75,3	-	81,6
Greece	1,4	45,8	1,8	47,0	2,3	46,9	3,5	44,1	3,0	47,2	4,1	41,8

Source: Authors, based on Global insurance market trends, 2014, 2015, 2016, 2017, 2018, 2019

The available data from Table 2 indicates the dominant participation of municipality bonds in the investment portfolio of insurance companies. The share of stocks in the portfolio of Turkey, Estonia, Italy, Spain, Slovenia, Belgium, the Czech Republic and Greece is single-digit and therefore negligible compared to the share of municipality bonds. On the Swedish insurance market, in the observed period, stocks are significantly present in the investment portfolio, so their participation exceeded 40% in 2019. In other countries, the range is between 10 and 20%. Comparatively analyzing the data presented in table 1 is noticeable that in the years of increase of claims payments compared to the previous insurance market, that is, insurance companies as representatives of the offer, are more inclined to safer placements and increased purchases of municipality bonds. On the contrary, in years of declining claims payments, there is a noticeable increase in riskier placements in the form of bigger activity on the stock market.

Analyzed data, according to preliminary analyzes, do not follow a normal distribution, which is not significant for this type of analysis. In the obtained results, the most significant value is the Pearson Chi Square in table 3. The corrected value of the Yates variable is 0.038 with a statistical significance of $p = 0.046$, which means that the hypothesis H1 can be accepted so it is proved that there is a connection between changes in payments of insured sums and changes in the investment portfolio in the non-life insurance market. The increase in

payments of insured sums on the non-life insurance market affects the increased investment activity on the government sector bond market and reduced activity on the stock market. Alternatively, the decrease in payments of insured sums on the non-life insurance market affects the decrease in investment activity on the government sector bond market and the increase in activity on the stock market.

Table 3. Chi-Square tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi Square	.041	1	.039	.043	.029
Continuity Correction	.038	1	.046		
Fishers Exact Test					
Linear-by-Linear Association	.045	1	.036		
N of Valid Cases	40				

Source: Author's calculation in SPSS

In addition to the statistical significance of the obtained result, it is necessary to determine the strength of the connection, that is, the size of the influence. The data in table 4 provides information on whether the demonstrated relationship is strong or weak.

Table 4. Symmetric measures

	Value	Approx Sig.
Nominal by Phi	-.028	.039
Nominal Cramer's V	.028	.039
N of Valid Cases	40	

Source: Author's calculation in SPSS

For this purpose, Cramer's V indicator is used, whose value of 0.028 for tables larger than 2 by 2 indicates a strong influence, that is, a significant relationship between the observed variables. At the end it can be said that not only is the existence of a relationship between the examined variables statistically proven, but the intensity of that relationship is strong, i.e. the influence is great.

Results and discussion of the life insurance market

Life insurance can be understood as a moral obligation towards yourself but also towards surrounding people (Olawaju, & Msomi, 2021). The fact that confirms the proportionality of the economic level of the company and insurance is especially important here. The disproportionate development of the global life insurance market is more pronounced than in the case of non-life insurance market. The subject of the analysis will be the markets of the same 20

selected countries, as in the example of life insurance. In the six-year considered period is being considered the percentage change in claims payments based on realized risks compared to the previous year..

Table 5. Annual real growth of claims payments in life insurance sector for the period 2014-2019 in selected countries

Countries	Year					
	2014	2015	2016	2017	2018	2019
Turkey	-20,5	-6,9	31,6	-5,9	6,1	-8,7
Netherlands	6,2	-12,0	15,3	-8,4	7,5	-3,1
Finland	-5,1	5,9	8,9	6,2	-1,5	5,3
Estonia	3,6	4,9	-5,3	-3,4	2,6	-1,6
USA	-3,8	4,7	1,2	0,7	-1,4	4,8
Denmark	11,3	-8,2	0,0	5,7	-6,8	10,5
Germany	7,9	-3,7	5,4	-2,7	6,5	-3,0
Austria	11,4	17,4	-10,1	13,6	-5,1	4,9
Sweden	-5,5	-0,8	1,3	2,6	-5,9	3,1
France	-0,4	4,7	3,4	-1,9	2,2	-7,9
Italy	-3,4	9,9	-11,6	7,4	5,7	-4,6
Spain	13,1	4,2	-5,7	6,9	5,9	-3,0
Slovenia	2,0	5,9	1,1	-3,6	6,4	-3,2
Belgium	-0,5	7,2	-5,4	6,7	-4,2	5,7
Norway	-1,1	4,8	0,2	-3,3	2,8	-3,9
Poland	-11,4	-3,7	3,5	2,7	-4,1	5,2
Israel	10,0	11,4	6,0	-3,6	5,2	-3,4
Czech Rep	14,7	-12,9	-14,7	2,5	-11,0	5,6
Slovakia	-0,4	-9,6	-6,8	6,4	-2,1	5,4
Greece	15,1	-9,3	-5,9	-1,1	4,3	-7,2

Source: Authors, based on Global insurance market trends, 2014, 2015, 2016, 2017, 2018, 2019

According to the data from table 5, the largest decrease in claims payments was realized in Turkey in 2014, when the payment was 20.5% lower than in 2013. The example of Turkey is also interesting from the perspective of the growth of payments, because 2 years later it was extremely large, by 31.6% compared to the previous year. In the list of all countries, there is no constantly increasing or decreasing trend, while in rare cases, identical trends can be noted in a three-year period. The markets that experienced the least annual changes are Finland, Estonia, Norway, Belgium and Slovakia, which are considered to be one of the most developed life insurance markets. Minimal fluctuations can be attributed

to an adequate risk assessment, but also to the business goals of insurance companies regarding stability and constancy in payments of insured sums. The highest cumulative growth in the payment of insured sums is in Israel in the first three years of the observed period, when the payment of insured sums increased by 27.4%, which is still at a lower level than the one-year growth in Turkey in 2016. Also, the largest cumulative decline was in Turkey in the first two years of the observed period, by 27.4%. The following table gives an insight into the investment activity of insurance companies on the capital market, that is, the stock market and municipality bonds market.

Table 6. Investment portfolio allocation of the life insurance sector for the period 2014-2019 in selected countries

Countries	Year											
	2014		2015		2016		2017		2018		2019	
	Stc	Bon	Stc	Bon	Stc	Bon	Stc	Bon	Stc	Bon	Stc	Bon
Turkey	3,3	94,0	1,9	42,9	2,5	63,7	3,4	51,8	2,0	52,4	2,6	47,2
Netherlands	18,6	41,0	21,4	43,7	19,7	51,9	24,1	44,0	21,5	45,2	23,6	40,3
Finland	13,9	25,4	13,2	27,6	14,9	28,5	11,3	34,6	13,6	30,1	12,0	32,4
Estonia	8,8	71,7	8,8	74,7	7,9	73,6	8,9	71,5	7,4	73,6	8,1	70,2
USA	3,7	73,1	3,6	73,4	3,9	74,5	3,1	77,4	3,6	73,2	2,9	75,3
Denmark	49,2	36,2	51,5	35,3	50,2	38,9	44,7	41,5	49,0	37,6	47,1	39,2
Germany	3,3	40,0	3,6	39,5	4,9	37,6	5,2	35,2	4,6	36,1	4,8	34,5
Austria	4,3	88,1	3,6	89,7	4,9	87,9	4,1	90,1	5,0	87,8	4,3	89,6
Sweden	38,9	51,1	41,3	51,8	46,2	52,9	44,5	54,8	47,2	50,2	45,6	51,8
France	11,9	83,0	12,0	82,2	13,1	84,1	15,2	80,4	12,6	82,2	14,7	80,8
Italy	3,2	89,5	2,9	89,9	1,7	90,2	1,4	90,6	1,1	91,2	1,6	89,7
Spain	3,3	77,8	3,4	78,7	2,8	78,6	2,5	79,5	2,0	80,9	2,1	78,4
Slovenia	31,2	58,0	28,2	69,8	30,4	66,4	31,5	64,7	29,8	65,6	30,4	63,2
Belgium	14,1	61,0	10,3	62,7	12,4	60,0	10,3	61,4	11,4	60,0	11,0	60,7
Norway	14,6	63,0	14,3	62,9	16,8	60,7	17,0	59,3	16,1	61,0	18,1	59,8
Poland	4,6	65,7	4,2	65,7	3,5	69,3	3,1	70,2	3,9	68,2	3,4	70,3
Israel	-	62,6	-	90,5	-	80,4	1,1	79,6	0,9	81,2	1,3	80,3
Czech Rep	1,6	74,0	1,9	78,7	2,0	79,3	1,6	81,3	2,9	74,1	2,0	79,6
Slovakia	-	85,3	-	83,3	1,9	82,4	1,4	84,3	1,6	80,2	1,2	82,2
Greece	1,3	43,8	1,4	74,5	1,7	59,6	2,0	55,4	1,5	57,2	1,6	55,4

Source: Authors, based on Global insurance market trends, 2014, 2015, 2016, 2017, 2018, 2019

Insight into the data in table 6 can be concluded that the municipality bonds are dominant in investment portfolio. That statement also applied to non-life

insurance, while here the difference between investments in the purchase of stocks and bonds is even more pronounced. The reasons should be sought in the need for more security. Insufficient information, awareness and knowledge about the need and benefits of life insurance as a consequence have the need for low-risk activities. This should send a signal of the safety of business activities to potential insurers, which, as the ultimate goal, should result in the growth of trust. The share of bonds in most observed markets is in the range of 60-90%. In Austria, the most dominant share of bonds in the observed period is at an average level of 90%. On the Turkish market, in 2014, the share of bonds in the portfolio was as high as 94%, after which it declined in the years to come and was at an average level of 50%. In more than 50% of the market, the share of shares is less than 5% (Turkey, America, Germany, Austria, Italy, Spain, Poland, Israel, Slovakia, Czech Republic and Greece). Comparatively analyzing the data presented in Table 2, it can be noted that in the years in which there was an increase in payments in relation to the previous insurance market, that is, insurance companies as representatives of the offer, are more inclined to safer placements and growth in the purchase of government bonds. On the contrary, in the years of declining payments, there is a noticeable increase in riskier placements in the form of greater activity on the stock market.

The preliminary analyzes did not establish a normal distribution, which can be ignored. In the obtained results, the most significant value is the Pearson Chi Square in table 7. The corrected value of the Yates variable is 0.043 with a statistical significance of $p = 0.050$, which allows the hypothesis H2 to be accepted, therefore, it has been proven that there is a connection between changes in payments of insured sums and changes in the investment portfolio in the life insurance market. The increase in payouts of insured sums on the life insurance market affects increased investment activity on the government sector bond market and reduced activity on the stock market. Alternatively, the decline in payments of insured sums in the life insurance market affects the decline in investment activity in the government sector bond market and the increase in activity in the stock market.

Table 7. Chi-Square tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi Square	.049	1	.048		
Continuity Correction	.043	1	.050		
Fishers Exact Test				.049	.038
Linear-by-Linear Association	.049	1	.057		
N of Valid Cases	40				

Source: Author's calculation in SPSS

In addition to the statistical significance of the obtained result, it is necessary to determine the strength of the connection, that is, the size of the influence. The data in table 8 provides information on whether the demonstrated relationship is strong or weak.

Table 8. Symmetric measures

		Value	Approx Sig.
Nominal by	Phi	-.004	.048
Nominal	Cramer's V	.004	.048
N of Valid Cases		40	

Source: Author's calculation in SPSS

For this purpose, Cramer's V indicator is used, whose value of 0.004 for tables larger than 2 by 2 indicates a small influence, that is, a weak connection between the observed variables. In the end, it can be stated that the existence of a relationship between the examined variables is statistically proven, but the intensity of that relationship is weak, that is, the influence is very small. The reasons should be sought in the previously mentioned caution of insurance market holders as a consequence of the exceptional sensitivity of insurance users. Minimal losses or shocks can threaten the life insurance market. Aware of that fact, the conditions for riskier placements have not yet been met. Additionally, taking a safe and long-term position is positively accepted by users in the still early stage of development of this market.

Conclusion

The risks faced by individuals and society requires mechanisms for its management and reduction on the acceptable level. Historically, it can be seen the unequal development of the global market which is still present. The disproportional character makes impossible to draw unique conclusions, but they can only refer to geographically limited areas or organizational units. It is a fact that the level of development of the insurance market follows the achieved level of economic development. As a ubiquitous phenomenon, regardless of its uneven character, the insurance market is developing. This development was accelerated by the market globalization and the free capital movements. For the basic business goal of every insurance company - profit maximization, must be found method of its realization. The activity on the capital market of all insurance companies is the necessity not the choice. However, the sensitivity of this market to shocks and confidence that is easy to lose, highlights the need for more cautious business decisions. Bearing in mind its character and sensitivity, they must be such that they do not jeopardize their business which can shake up the entire insurance market. In this article two hypotheses were confirmed

through the analysis. Regardless, a distinction should be made in the interpretation of the obtained results. On the non-life insurance market, the change in the payment of compensation claims has an impact on the activity on the capital market. In addition, this influence is very large and the relationship between the analyzed variables is strong. The confirmation of the second hypothesis must be interpreted in a different way. On the example of life insurance was obtained the statistically significant result of the connection and influence of identical variables. Regardless of this fact, achieved relationship is not strong, but extremely weak and the influence of the variables is very small. Therefore, a single conclusion cannot be adopted on both markets. A disadvantage of this model is the sample made up of countries that do not belong to one area or group of countries, so global and precise conclusion can not be drawn. Additionally, the analysis is time-limited to six years, so it should definitely be extended, which is a recommendation to future authors on this topic. It is also possible to do a comparative analysis of the markets of developed and developing countries, which will show whether there are differences in activities on the capital market and what they are conditioned by. The sample consists of data until 2019 and the analysis covered the period before the COVID-19 pandemic. Market conditions have changed significantly for more than 2 years. The resulting crisis is reflected in all sectors. The definition of the insurance market as highly sensitive to crisis periods points to the conclusion that there have been changes in business conditions for economic entities. In the coming period, it will be a big challenge for the market holders to preserve and strengthen the market position with adequate policies and implemented strategies. For this reason, cooperation between the economy and the scientific sector will be of particular importance.

Literature

1. Agic-Sabeta, E. (2017). Portfolio insurance investment strategies: A risk-management tool. *UTMS Journal of Economics*, 8(2), 91-104.
2. Alshammari, A., Syed, M., Alhabshi, J., & Saiti, B. (2018). A comparative study of the historical and current development of the GCC insurance and takaful industry. *Journal of Islamic Marketing*, 9(2), 356-369, <https://doi.org/10.1108/JIMA-05-2016-0041>
3. Anđelinović, M., Samodol, A., & Pavković, A. (2018). Asset allocation and profitability of Croatian insurers in the pre-solvency period. *Economics Review*, 47(4), 387-411.
4. Antić, A., Dragović, N., & Tomić, N. (2021). Show cave websites in Serbia: Evaluation and potential improvements. *Menadžment u hotelijerstvu i turizmu*, 9(1), 11-25. <https://doi.org/10.5937/menhotur2101011A>

5. Baranoff, E., & Sager, T. (2009). Do Life Insurers' Asset Allocation Strategies Influence Performance within the Enterprise Risk Framework? *Geneva Pap Risk Insur Issues Practise*, 34, 242–259, <https://doi.org/10.1057/gpp.2009.5>
6. Chache, W., Mwangi, C., Nyamute, W., & Anigma, K. (2021). Risk-Based Capital and Investment Returns of Insurance Companies in Kenya: Moderating Effect of Firm Size. *European Scientific Journal*, 16(31), 25-41. <https://doi.org/10.19044/esj.2020.v16n31p227>
7. Chevallier, E., & Müller, H. (2014). Risk Allocation in Capital Markets: Portfolio Insurance, Tactical Asset Allocation and Collar Strategies. *ASTIN Bulletin: The Journal of the IAA*, 24(1), 5 – 18. <https://doi.org/10.2143/AST.24.1.2005077>
8. Černohorská, L., & Klofát, M. (2021). An Analysis of the Insurance Market in the Czech Republic. *Globalization and its Socio-Economic Consequences*, 92, 46-56. <https://doi.org/10.1051/shsconf/2021920800670>
9. Čolović, V. (2010). Osiguravajuća društva: Zakonodavstvo Srbije, pravo EU, uporedno pravo. Institut za uporedno pravo, Beograd. ISBN: 978-86-80059-70-9
10. Esfandi, E., Mousavi, H., Moshrefi, R., Farhang, B., & Moghaddam, S. (2020). Insurer Optimal Asset Allocation in a Small and Closed Economy: The Case of Iran's Social Security Organization. *Journal of Money and Economy*, 15(4), 445-461, <https://doi.org/10.29252/jme.15.4.445>
11. Global insurance market trends, annual reports, 2014, 2015, 2016, 2017, 2018, 2019. (dostupno na web sajtu: <https://www.oecd.org/daf/fin/insurance/globalinsurancemarkettrends.htm>)
12. Hamidi, B., Maillet, B., & Prigent, J-L. (2014). A Dynamic AutoRegressive Expectile for Time-Invariant Portfolio Protection Strategies. *Journal of Economic Dynamics and Control*, 46(1), 129-145. <https://doi.org/10.2139/ssrn.1343473>
13. Kielholz, W. (2021). Connecting the world's risk and insurance communities: why research-based dialogue is more important than ever. *Geneva Pap Risk Insurance Issues Practise*, 46, 281–292. <https://doi.org/10.1057/s41288-021-00224-8>
14. Koijen, R.S.J. & Yogo, M. (2022). The Fragility of Market Risk Insurance. *Journal of Finance*, 77(2), 256-274. <https://doi.org/10.2139/ssrn.2972295>
15. Kouwenberg, R (2018). Strategic asset allocation for insurers under Solvency II. *Journal of Asset Management*, 19(1), 103-117. <https://doi.org/10.1057/s41260-018-0097-4>
16. Mitrović, A., Knežević, S., & Milašinović, M. (2021). Profitability analysis of hotel companies in the Republic of Serbia. *Menadžment u hotelijerstvu i turizmu*, 9(1), 121-134. <https://doi.org/10.5937/menhottur2101121M>

17. Olarewaju, O., & Msomi, T. (2021). Determinants of Insurance Penetration in West African Countries: A Panel Auto Regressive Distributed Lag Approach. *Journal of Risk Financial Management*, 14, 350-365, <https://doi.org/10.3390/jrfm14080350>
18. Peleckienė, V., & Peleckis, K. (2014). Omnibus II Effective Measures in Adjusting the Current Solvency II Framework. *Procedia - Social and Behavioral Sciences*, 110, 156-163, <https://doi.org/10.1016/j.sbspro.2013.12.858>
19. Poufinas, T., & Tsitsika, P. (2018). An Assessment of the Market Risk Solvency Capital Requirement Simplifications for Insurance Undertakings. *Theoretical Economics Letters*, 11(8), 2363-2387. <https://doi.org/10.4236/tel.2018.811153>
20. Ristić, K., Miljković, Lj., & Milunović, M. (2021). Investment in the banking sector as a basis for money laundering. *Akcionarstvo*, 27(1). 55-71.
21. Tasić, S., Krstić, D., & Milojević, I. (2021). Statistička analiza bankoosiguranja. *Akcionarstvo*, 27(1). 41-55.
22. Tepavčević, J., Vukosav, S., & Bradić, M. (2021). The impact of demographic factors on work-family conflict and turnover intentions in the hotel industry. *Menadžment u hotelijerstvu i turizmu*, 9(2), 25-36. <https://doi.org/10.5937/menhottur2102025T>
23. Tiefeng, W., & Rwegasira, K. (2006). Dynamic Securities Assets Allocation in Portfolio Insurance: The Application of Constant Proportion Portfolio Insurance and Time Invariant Portfolio Protection Methodologies in the Chinese Capital Market. *Investment Management and Financial Innovations*, 3(1), 97-103.
24. Žarković, N. (2008). *Ekonomika osiguranja*. Univerzitet Singidunum, Beograd. ISBN: 978-86-7912-110-3.

Datum prijema (Date received): 11.08.2022.

Izvršena prva korekcija (The first correction was made): 29.09.2022.

Datum prihvatanja (Date accepted): 12.10.2022.