

UTICAJ ISPLATA OSIGURANIH SUMA NA INVESTICIONI PORTFOLIO OSIGURAVAJUĆIH KOMPANIJA

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Apstrakt

Potreba za osiguranjem datira u dalekoj prošlosti. Od primitivnih načina osiguranja do njegove institucionalizacije i zakonske implementacije je proteklo mnogo vremena. Savremeno tržište osiguranja, bez obzira na globalni karkter, nije ravnomerno razvijeno. Neujednačenost razvoja je jedna od njegovih glavnih karakteristika neretko povezana sa ostvarenim nivoom privrednog razvoja. Brojni faktori utiču na investicionu aktivnost osiguravajućih kompanija kao nosioca tržišta osiguranja. Predmet ovog rada će biti ispitivanje veze odnosno uticaja isplata osiguranih suma (šteta) na redistribuciju investicionog portfolija na tržištu kapitala. Za tu potrebu biće formulisane dve hipoteze, odvojeno za tržište neživotnog i životnog osiguranja. Ispitivanje veze razmatranih varijabli će biti sprovedeno pomoću SPSS statističkog softvera odnosno HI kvadrat testa. Bez obzira na dokazivanje hipoteza neće biti moguće jedinstveno donošenje zaključaka za oba tržišta.

Ključne reči: *tržište osiguranja, životno osiguranje, neživotno osiguranje, akcije, obveznice*

JEL: *G11, G22, G52, H54*

Uvod

Ekonomska aktivnosti su suočene sa brojnim rizicima koji u slučaju realizacije mogu negativno uticati na željeni ishod (Černohorská & Kľofát, 2021). Rizici

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se ne odnose samo na ovu vrstu aktivnosti, već su prisustni u svakodnevnicu svakog pojedinca. Dinamičan razvoj privrede, koja obriše svog savremenog karaktera stiže u vremenu prve industrijske revolucije, intenzivirao je rast životnog standarda i probudio svest ljudi o mogućim rizicima i potrebi da se oni izbegnu ili svedu na podnošljiviji nivo (Kielholz, 2021; Antić et al., 2021). Osiguranje zasnovano na principima solidarnosti i uzajamnosti vuče korene u dalekoj prošlosti. Potreba da se rizici udruže i štete kolektivno podnesu datira iz perioda prvobitne ljudske zajednice, dok se dokumentovani dokazi vezuju za period pre nove ere i odnose se pretežno na trgovačke karavane i obezbeđivanje transporta tereta (Koijen & Yogo, 2022). U srednjem veku je osiguranje implementirano u mnogim zakonicima pri čemu treba izdvojiti zakonik cara Dušana iz XIV veka u kojem je više od 200 članova bilo posvećeno upravo osiguranju (Žarković, 2008, 179). Slični primeri se kasnije mogu pronaći u Firenci, Rimu i Barseloni ali i na teritoriji Dubrovačke Republike gde su pronađene i sačuvane autentične polise osiguranja iz srednjeg veka (Anđelinović et al., 2018; Čolović, 2010, 241). Turbulentni periodi i posledične finansijske krize su, između ostalog, uzrokovale i krize na tržištima osiguranja pogotovo krajem XX veka. To je posledično uticalo na nepoverenje u sektor osiguranja koje je neretko bilo povezivano sa prevarom i izjednačavano sa kockanjem. Ovakva uvrežena shvatanja su bila dominantna u nerazvijenim i zemljama u razvoju. Danas je gotovo nemoguće zamisliti preduzimanje bilo koje poslovne aktivnosti bez nekog vida osiguranja. Ono je sveprisutno u svih granama i sektorima. Uslužne delatnosti i tercijarni sektor su nezamislivi bez instituta osiguranja (Tepavčević, et al., 2021). Turističko putovanje nezamislivo bez osiguranja putnika (Mitrović et al., 2021). Osiguravajuće kompanije, kao nosioci osiguranja, su kako bi stekle poverenje, svoje poslovanje učinile transparentnijim, sve više vodeći računa o alokaciji svojih slobodnih i privremeno neuposlenih novčanih sredstava (Kouwenberg, 2018). U poslednje dve decenije je porasla aktivnost osiguravajućih kompanija na tržištu kapitala (Pouffinas & Tsitsika, 2018). Kako bi ostvarile svoj osnovni cilj poslovanja i nepredviđene troškove učinile podnošljivijim, u aktivni osiguravajućih kompanija su sve prisutnije akcije i obveznice državnog sektora (Peleckienė & Peleckis, 2014). Pri tome treba imati u vidu da je sigurnost plasmana osiguravajućih društava pod strogom kontrolom zbog velike senzitivnosti fizičkih lica i pravnih subjekata na eventualne potrese i gubitke (Esfandi et al., 2020). Isplata šteta u osiguranju diktira iznos slobodnih novčanih sredstva koji može biti alocirani na raznim tržištima a time i na tržištu kapitala (Baranoff & Sager, 2009; Ristić et al., 2021). Predmet ovog rada će biti utvrđivanje zavisnosti isplata osiguranih suma na aktivnost koju preduzimaju osiguravajuće kompanije na tržištu kapitala kroz kupovinu akcija i obveznica državnog

sektora. Analiza će obuhvatiti osiguranje na nivou država pri čemu će se odvojeno razmatrati neživotna i životna osiguranja.

Pregled literature

Tiefeng i Rwegasira (2006) su se bavili tržištem osiguranja u Kini kao i faktorima koji utiču na investicioni portfolio osiguravajućih kompanija. Zaključci do kojih su došli pokazuju postoji veza između aktivnosti na tržištu kapitala sa ostvarenim profitom. U godinama dobrog poslovanja i velikih iznosa profita je aktivnost osiguravajućih kompanija usmerena ka rizičnijim investicionim aktivnostima, odnosno kupovini akcija i obratno. Zaključak je da bilo koji potresi na osiguravajućem tržištu imaju izrazito negativne reperkusije na aktivnost fizičkih i ravnih lica kao i rast nepoverenja. Iz tog razloga osiguravajuće kompanije posebno moraju voditi računa o sigurnosti svojih plasmana i iznosima kapitala u tehničkim rezervama.

Agic-Sabeta (2017) je istraživala tržište osiguranja u jugoistočnoj Evropi u desetogodišnjem periodu kao i načine kako da se izbegnu sistemski rizici koji u velikoj meri mogu da ugroze poslovanje osiguravajućih kompanija a time i stabilnost tržišta osiguranja. Zaključci do kojih je došla upućuju na potrebu veće aktivnosti osiguravajućih kompanija na tržištu kapitala i to pogotovo u godinama većih ostvarenih profita ili manje isplaćenih odštetnih zahteva od planiranih. Aktivnost na tržištu novca treba povećati u kriznim periodima i to kroz ulaganje u kratkoročne hartije od vrednosti državnog sektora.

Chevallier & Müller (2014) su uradili analizu tržišta osiguranja razvijenih zemalja, odnosno uticaj isplata odštetnih zahteva na aktivnosti na finansijskom tržištu. Kao jedan od razloga neujednačenog razvoja osiguravajućih kompanija navode rizične plasmane u godinama u kojima je isplata odštetnih zahteva bila veća od planirane što je pojedine kompanije dovelo do problema likvidnosti koja je rešavana kapitalom iz rezervi. Dugoročno, neadekvatan plasman trenutno neuposlenih novčanih sredstava može dovesti do problema solventnosti što se može odraziti ne celokupno tržište osiguranja. Zato su planske i pažljivo odabrane aktivnosti na tržištu kapitala od ključnog značaja za stabilnost osiguravajućeg tržišta a time i finansijskog sistema.

Hamidi (2014) je sa grupom autora analizirao aktivnosti investicionih kompanija na tržištu kapitala zasnovane na odlukama u vezi sa njegovim trenutnim stanjem. Osiguravajuće kompanije su aktivnije na ovom tržištu u periodima njegove stabilnosti i obratno. Primetili su da aktivnosti i odluke nisu u vezi sa ostvarenim poslovnim rezultatima pa su konstatovali da je time izgubljena šansa za dodatnim profitom čime je kapital ostao zarobljen. Zato su predložili model koji može poslužiti osiguravajućim kompanijama da pri

donošenju odluka akcenat treba da bude na uspešnosti njihovog poslovanja, a ne na trenutno stanje finansijskog tržišta. Takođe su predložili da prilikom odluke o eventualnim aktivnostima glavni parametar treba da bude iznos isplaćenih šteta po osnovu realizovanih osiguranih rizika.

Chache (2021) je sa grupom autora analizirao investicionu aktivnost 63 osiguravajuće kompanije u Keniji. Imajući u vidu nerazvijeno tržište osiguranja velike su razlike u uspešnosti poslovanja osiguravajućih društava. Evidentno je učešće malih osiguravajućih kompanija uz par velikih. Takođe, velika opreznost i strah od rizičnih ulaganja ima za posledicu veliku neaktivnost malih kompanija na tržištu kapitala. Analiza je pokazala potrebu izlaska na tržište kapitala kao neophodan uslov napretka osiguravajućeg tržišta. Velika prepreka na tom putu je nedovoljan stručan kadar ali i nepoverenje u osiguranje koje je posledica nedovoljno ostvarenog nivoa privrednog razvoja koji je uslov razvoja tržišta osiguranja.

Metodologija istraživanja

Za potrebe analize zavisnosti odnosno uticaja promena isplata osiguranih suma na aktivnosti na tržištu kapitala će se koristiti podaci na državnom nivou odabranih država u periodu 2014-2019. godine. Kako bi se zavisnost utvrdila i postavljene hipoteze ispitale, koristiće se rezultati Hi kvdrat testa na pomenutom uzorku.

Teorijski, model se može predstaviti na sledeći način:

$Z_{1,2}$ – promena učešća akcija i državnih obveznica u investicionom portfoliju neživotnog i životnog osiguranja

$Y_{1,2}$ – promena isplata osiguranih suma neživotnog i životnog osiguranja

Vrednosti zavisnih promenljivih $Z_{1,2}$ mogu biti predstavljene kao

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

Vrednosti nezavisnih promenljivih $Y_{1,2}$ mogu biti predstavljene kao

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

$$\text{Skup vrednosti obeležja } (Z,Y): R[(Z,Y)] = \{(s_k, m_l) : 1 \leq k \leq r, 1 \leq l \leq n\} \quad (3)$$

r_{kl} – učestalost od (s_k, m_l) u uzorku

r_k – granična učestalost od s_k u uzorku

p_l – granična učestalost od m_l u uzorku

$$rk = \sum_{l=1}^n f_{kl} \quad pl = \sum_{k=1}^r f_{kl}$$

(4)

Hipoteze koje će biti predmet dokazivanja se mogu formulisati na sledeći način:

H_1 : Postoji veza između promena isplata osiguranih suma i promena investicionog portfolija na tržištu neživotnog osiguranja

H_2 : Postoji veza između promena isplata osiguranih suma i promena investicionog portfolija na tržištu životnog osiguranja

Dokazivanjem H_1/H_2 hipoteza može se konstatovati da su $H_1/H_2 \approx \chi^2((r-1) * (n-1))$

Rezultati i diskusija tržišta neživotnog osiguranja

Spektar usluga koje nude osiguravajuće kompanije za neživotno osiguranje je širok i prvi oblici osiguranja su se upravo odnosili na osiguranja pokretne i nepokretne imovine (Alshammari et al., 2018; Tasić et al., 2021). Ostali oblici osiguranja i poslovanje osiguravajućih kompanija koje su se bavile drugim vrstama osiguranja su većinu svojih principa poslovanja preuzela iz poslovanja ovih osiguravajućih kompanija. Predmet analize će biti tržišta osiguranja u 20 odabranih zemalja u kojima nije ostvaren isti nivo razvoja tržišta. U šestogodišnjem razmatranom periodu se prati procentualna promena isplata šteta po osnovu realizovanih rizika u odnosu na prethodnu godinu.

Tabela 1. Realni godišnji rast isplata osiguranih suma neživotnog osiguranja u periodu 2014-2019. godine u odabranim državama

Države	Godine					
	2014	2015	2016	2017	2018	2019
Turska	3,5	17,8	6,2	9,5	-3,1	4,7
Holandija	-7,1	-2,2	-6,4	3,9	-1,8	2,0
Finska	-19,9	-2,1	18,4	-4,8	3,7	-3,4
Estonija	2,8	10,7	-4,6	5,7	6,4	5,5
SAD	10,0	8,6	2,7	6,3	5,7	4,8
Danska	8,2	-2,3	-7,1	3,1	-5,9	6,6
Nemačka	-10,8	6,5	-5,7	-6,8	9,1	-10,3
Austrija	0,8	-1,5	-0,5	1,8	-4,7	3,6
Švedska	10,0	-3,5	5,8	-4,6	3,6	-0,7
Francuska	3,4	-0,8	2,4	-0,9	5,4	-4,6

Italija	-6,0	-4,6	-7,6	5,1	-2,4	4,1
Španija	-2,9	1,0	-3,6	3,4	-1,6	5,0
Slovenija	-5,5	-4,8	1,4	-2,9	2,9	4,3
Belgija	15,3	-1,7	0,3	3,8	6,8	-3,4
Norveška	17,2	2,2	6,3	-5,7	-4,7	5,7
Poljska	-1,7	3,5	15,8	-4,9	5,9	6,3
Izrael	8,3	-0,1	14,8	-6,7	2,4	-3,9
Češka	-1,3	7,6	0,8	3,9	3,6	-2,2
Slovačka	6,6	-1,6	3,6	-1,1	2,8	-4,7
Grčka	-2,4	-8,5	1,7	-4,8	3,6	-2,8

Izvor: Autori, na osnovu Global insurance market trends, 2014, 2015, 2016, 2017, 2018, 2019

Prema podacima iz tabele 1 jedino je na osiguravajućem tržištu SAD-a ostvaren kontinuirani rast isplata šteta u odnosu na prethodnu godinu i to na godišnjem nivou većem od 5% izuzev 2016. godine. Primetan je trend na tržištima Nemačke, Švedske, Francuske, Španije, Izraela i Slovačke koji ukazuje na to da nakon godine u kojoj je zabeležen rast isplata šteta sledi godina u kojoj je ostvaren procentualan pad. Time se, ipak ne sasvim precizno, može reći da je suma isplata na sličnom nivou poredeći prvu i poslednju godinu posmatranog perioda. Najveći procentulani pad isplata šteta je ostvaren na tržištu Finske 2014. godine u kojoj je na ime isplata šteta u osiguranju izdvojeno 19,9% manje sredstava nego 2013. godine. Ipak je dve godine kasnije taj pad nadoknađen rastom od 18,4%. Značajni, dvocifreni procentualni padovi, su ostvareni u Nemačkoj 2014 i 2019. godine i to za 10,8 i 10,3 % respektivno. Najveći rast isplata šteta posle Finske je ostvaren u Belgiji i Norveškoj 2014. godine i to za 15,3 i 17,2% respektivno, ali i na osiguravajućim tržištima Poljske i Izraela 2016. godine za 15,8 odnosno 14,8%. U sledećoj tabeli je predstavljena investiciona aktivnost osiguravajućih kompanija na tržištu kapitala, odnosno tržištima akcija i obveznica državnog sektora.

Tabela 2. Investicioni portfolio neživotnog osiguranja u periodu 2014-2019. godine u odabranim državama

Države	Godine											
	2014		2015		2016		2017		2018		2019	
	Akc	Obv	Akc	Obv	Akc	Obv	Akc	Obv	Akc	Obv	Akc	Obv
Turska	0,6	34,7	0,8	38,3	0,9	27,2	0,6	31,6	0,8	39,5	0,6	41,4
Holandija	11,5	35,4	8,0	39,5	9,3	40,7	8,4	41,6	9,6	37,9	8,9	38,1
Finska	24,3	64,7	29,6	65,4	18,2	55,6	19,4	54,2	17,6	55,3	18,5	55,4
Estonija	9,1	75,6	6,5	78,3	5,3	72,0	4,3	74,3	3,9	74,6	3,8	74,9
SAD	19,6	68,6	23,3	64,2	14,2	73,6	14,1	74,5	13,9	75,0	13,4	75,1

Danska	28,3	66,9	23,1	71,0	17,1	68,0	15,3	69,4	16,8	63,1	14,6	66,2
Nemačka	9,2	38,1	10,0	40,1	33,3	43,7	35,9	42,0	34,1	44,5	36,4	42,6
Austrija	35,9	31,6	39,6	29,4	54,7	39,9	52,1	40,5	53,2	39,1	51,4	41,5
Švedska	34,6	54,2	38,3	55,6	36,9	55,8	39,5	52,4	38,4	53,6	40,6	51,2
Francuska	20,8	60,4	23,7	61,0	14,8	71,6	14,0	72,6	13,6	72,9	13,9	71,3
Italija	5,9	79,3	6,7	78,2	5,4	84,9	5,1	85,3	5,6	85,0	5,0	86,1
Španija	10,6	42,9	12,1	43,8	9,6	83,3	9,3	83,9	8,9	84,2	8,4	85,1
Slovenija	6,3	69,5	4,2	71,0	5,1	59,7	5,3	58,1	4,9	59,3	4,6	62,5
Belgija	8,9	60,4	9,4	64,6	11,5	54,7	10,5	55,2	9,6	56,9	9,8	56,0
Norveška	21,4	70,6	20,8	72,4	19,6	75,4	20,6	74,8	21,5	71,2	18,4	79,1
Poljska	16,7	46,8	15,5	47,0	13,6	51,4	18,2	55,9	11,3	59,4	10,2	58,3
Izrael	10,0	50,2	8,7	53,8	13,3	49,7	15,3	42,9	13,0	47,1	14,6	41,3
Češka	6,3	61,4	5,0	62,4	8,9	59,8	7,8	61,8	6,9	67,6	8,1	59,4
Slovačka	-	77,3	-	78,9	-	79,5	-	81,3	-	75,3	-	81,6
Grčka	1,4	45,8	1,8	47,0	2,3	46,9	3,5	44,1	3,0	47,2	4,1	41,8

Izvor: Autori, na osnovu Global insurance market trends, 2014, 2015, 2016, 2017, 2018, 2019

Dostupni podaci iz tabele 2 ukazuju na dominantno učešće državnih obveznica u investicionom portfoliju osiguravajućih kompanija. Učešće akcija u portfoliju Turke, Estonije, Italije, Španije, Slovenije, Belgije, Češke i Grčke je jednocifreno a time i zanemarljivo u odnosu na učešće državnih obveznica. Na švedskom osiguravajućem tržištu su u posmatranom periodu akcije značajno prisutne u investicionom portfoliju pa je njihovo učešće 2019. godine premašilo 40%. U ostalim državama se može konstatovati raspon između 10 i 20%. Uporedno analizirajući podatke predstavljene u tabeli 1 može se primetiti da je u godinama u kojima je došlo do rasta isplata šteta u odnosu na prethodnu tržište osiguranja, odnosno osiguravajuće kompanije kao predstavnici ponude, sklonije sigurnijim plasmanima i rastom kupovine državnih obveznica. Obratno, u godinama pada isplata šteta primetan je rast rizičnijih plasmana u vidu veće aktivnosti na tržištu akcija.

Analizirani podaci prema preleminarnim analizama ne prate normalnu raspodelu što nije značajno za ovu vrstu analize. U dobijenim rezultatima je najznačajnija vrednost Pearson Chi Square u tabeli 3. Korigovana vrednost Jejtsove promenljive iznosi 0,038 uz statističku značajnost $p = 0,046$ čime se može prihvatiti hipoteza H1 odnosno, dokazano je da postoji veza između promena isplata osiguranih suma i promena investicionog portfolija na tržištu neživotnog osiguranja. Porast isplata osiguranih suma na tržištu neživotnog osiguranja utiče na pojačanu investicionu aktivnost na tržištu obveznica državnog sektora i smanjenu aktivnost na tržištu akcija. Alternativno, pad

isplata osiguranih suma na tržištu neživotnog osiguranja utiče na pad investicione aktivnosti na tržištu obveznica državnog sektora i porast aktivnosti na tržištu akcija.

Tabela 3. Hi kvadrat testovi

	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				

Izvor: Proračun autora u SPSS-u

Pored statističke značajnosti dobijenog rezultata potrebno je utvrditi jačinu veze odnosno veličinu uticaja. Podaci u tabeli 4 daju informaciju o tome da li je dokazana veza jaka ili slaba.

Tabela 4. Simetrična merenja

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

Izvor: Proračun autora u SPSS-u

U tu svrhu se koristi Cramer's V pokazatelj čija vrednost od 0.028 za tabele veće od 2 sa 2 govori o jakom uticaju, odnosno o značajnoj vezi između posmatranih promenljivih. Na kraju se može konstatovati da je ne samo statistički dokazano postojanje veze ispitivanih promenljivih već je intezitet te veze jak odnosno uticaj je veliki.

Rezultati i diskusija tržišta životnog osiguranja

Životno osiguranje se može shvatiti kao moralna obaveza ne samo prema sebi već i prema sebi bliskim osobama (Olawaju, & Msomi, 2021). Činjenica koja govori o srazmernosti privrednog nivoa društva i osiguranja ovde posebno dobija na značaju. Nesrazmeran odnos razvijenosti globalnog tržišta životnog osiguranja je izraženiji nego kod neživotnog osiguranja. Predmet analize će, kao i na primeru životnog osiguranja biti tržišta istih 20 odabranih država. U šestogodišnjem razmatranom periodu se prati procentualna promena isplata šteta po osnovu realizovanih rizika u odnosu na prethodnu godinu.

Tabela 5. Realni godišnji rast isplata osiguranih suma životnog osiguranja u periodu 2014-2019. godine u odabranim državama

Države	Godine					
	2014	2015	2016	2017	2018	2019
Turska	-20,5	-6,9	31,6	-5,9	6,1	-8,7
Holandija	6,2	-12,0	15,3	-8,4	7,5	-3,1
Finska	-5,1	5,9	8,9	6,2	-1,5	5,3
Estonija	3,6	4,9	-5,3	-3,4	2,6	-1,6
SAD	-3,8	4,7	1,2	0,7	-1,4	4,8
Danska	11,3	-8,2	0,0	5,7	-6,8	10,5
Nemačka	7,9	-3,7	5,4	-2,7	6,5	-3,0
Austrija	11,4	17,4	-10,1	13,6	-5,1	4,9
Švedska	-5,5	-0,8	1,3	2,6	-5,9	3,1
Francuska	-0,4	4,7	3,4	-1,9	2,2	-7,9
Italija	-3,4	9,9	-11,6	7,4	5,7	-4,6
Španija	13,1	4,2	-5,7	6,9	5,9	-3,0
Slovenija	2,0	5,9	1,1	-3,6	6,4	-3,2
Belgija	-0,5	7,2	-5,4	6,7	-4,2	5,7
Norveška	-1,1	4,8	0,2	-3,3	2,8	-3,9
Poljska	-11,4	-3,7	3,5	2,7	-4,1	5,2
Izrael	10,0	11,4	6,0	-3,6	5,2	-3,4
Češka	14,7	-12,9	-14,7	2,5	-11,0	5,6
Slovačka	-0,4	-9,6	-6,8	6,4	-2,1	5,4
Grčka	15,1	-9,3	-5,9	-1,1	4,3	-7,2

Izvor: Autori, na osnovu Global insurance market trends, 2014, 2015, 2016, 2017, 2018, 2019

Prema podacima iz tabele 5 najveći pad isplata osiguranih suma je realizovan u Turskoj 2014. godine kada je isplata bila za 20,5% manja u odnosu na 2013. godinu. Primer Turske je zanimljiv i sa aspekta rasta isplata jer je 2 godine kasnije bio izrazito veliki i to za 31,6% u odnosu na prethodnu 2015.godinu. U popisu svih država nema zabeleženog stalno rastućeg ili pak opadajućeg trenda dok se u retkim slučajevima mogu konstatovati istoznačni trendovi u trogodišnjem periodu. Tržišta koja su pretprela najmanje godišnje promene su Finska, Estonija, Norveška, Belgija i Slovačka koja se smatraju jednim od najrazvijenijih tržišta životnog osiguranja. Minimalne fluktuacije se mogu pripisati adekvatnoj proceni rizika ali i poslovnim ciljevima osiguravajućih kompanija koje se tiču stabilnosti i konstantnosti u isplatama osiguranih suma. Najveći kumulativni rast u isplati osiguranih suma je u Izraelu u prve tri godine posmatranog perioda, kada je isplata osiguranih suma porasla za 27,4% što je

ipak na manjem nivou nego jednogodišnji rast u Turskoj 2016. godine. Takođe je najveći kumulativni pad u Turskoj u prve dve godine posmatranog perioda i to za 27,4%. Sledeća tabela daje uvid u investicionu aktivnost osiguravajućih kompanija na tržištu kapitala, odnosno tržištima akcija i obveznica državnog sektora.

Tabela 6. Investicioni portfolio životnog osiguranja u periodu 2014-2019. godine u odabranim državama

Države	Godine											
	2014		2015		2016		2017		2018		2019	
	Akc	Obv	Akc	Obv	Akc	Obv	Akc	Obv	Akc	Obv	Akc	Obv
Turska	3,3	94,0	1,9	42,9	2,5	63,7	3,4	51,8	2,0	52,4	2,6	47,2
Holandija	18,6	41,0	21,4	43,7	19,7	51,9	24,1	44,0	21,5	45,2	23,6	40,3
Finska	13,9	25,4	13,2	27,6	14,9	28,5	11,3	34,6	13,6	30,1	12,0	32,4
Estonija	8,8	71,7	8,8	74,7	7,9	73,6	8,9	71,5	7,4	73,6	8,1	70,2
SAD	3,7	73,1	3,6	73,4	3,9	74,5	3,1	77,4	3,6	73,2	2,9	75,3
Danska	49,2	36,2	51,5	35,3	50,2	38,9	44,7	41,5	49,0	37,6	47,1	39,2
Nemačka	3,3	40,0	3,6	39,5	4,9	37,6	5,2	35,2	4,6	36,1	4,8	34,5
Austrija	4,3	88,1	3,6	89,7	4,9	87,9	4,1	90,1	5,0	87,8	4,3	89,6
Švedska	38,9	51,1	41,3	51,8	46,2	52,9	44,5	54,8	47,2	50,2	45,6	51,8
Francuska	11,9	83,0	12,0	82,2	13,1	84,1	15,2	80,4	12,6	82,2	14,7	80,8
Italija	3,2	89,5	2,9	89,9	1,7	90,2	1,4	90,6	1,1	91,2	1,6	89,7
Španija	3,3	77,8	3,4	78,7	2,8	78,6	2,5	79,5	2,0	80,9	2,1	78,4
Slovenija	31,2	58,0	28,2	69,8	30,4	66,4	31,5	64,7	29,8	65,6	30,4	63,2
Belgija	14,1	61,0	10,3	62,7	12,4	60,0	10,3	61,4	11,4	60,0	11,0	60,7
Norveška	14,6	63,0	14,3	62,9	16,8	60,7	17,0	59,3	16,1	61,0	18,1	59,8
Poljska	4,6	65,7	4,2	65,7	3,5	69,3	3,1	70,2	3,9	68,2	3,4	70,3
Izrael	-	62,6	-	90,5	-	80,4	1,1	79,6	0,9	81,2	1,3	80,3
Češka	1,6	74,0	1,9	78,7	2,0	79,3	1,6	81,3	2,9	74,1	2,0	79,6
Slovačka	-	85,3	-	83,3	1,9	82,4	1,4	84,3	1,6	80,2	1,2	82,2
Grčka	1,3	43,8	1,4	74,5	1,7	59,6	2,0	55,4	1,5	57,2	1,6	55,4

Izvor: Autori, na osnovu Global insurance market trends, 2014, 2015, 2016, 2017, 2018, 2019

Uvidom u podatke u tabeli 6 se može konstatovati da u potrfoliju dominiraju obveznice državnog sektora. Ta konstatacija se odnosila i na neživotno osiguranje dok je ovde razlika između investicija u kupovinu akcija i obveznica još izraženija. Razloge treba tražiti u potrebi za većom sigurnošću. Nedovoljna informisanost, svest i znanje o potrebi i benefitima životnog osiguranja kao posledicu imaju potrebu za aktivnostima niskog rizika. Ovo treba da

potencijalnim osiguravačima pošalje signal sigurnosti poslovnih aktivnosti što, kao krajnju cilj, treba da rezultuje rastom poverenja. Učešće obveznica na većini posmatranih tržišta je u rasponu 60-90%. U Austriji je u posmatranom periodu najdominantnije učešće obveznica i to na prosečnom nivou od 90%. Na tržištu Turske je 2014. godine učešće obveznica u portfoliju bilo čak 94% nako čega je u godinama koje su predstojale opalo i bilo je na prosečnom nivou od 50%. Na više od 50% tržišta je učešće akcija manje od 5% (Turska, Amerika, Nemačka, Austrija, Italija, Španija, Poljska, Izrael, Slovačka, Češka i Grčka). Uporedno analizirajući podatke predstavljene u Tabeli 2 može se primetiti da je u godinama u kojima je došlo do rasta isplata u odnosu na prethodnu tržište osiguranja, odnosno osiguravajuće kompanije kao predstavnici ponude, sklonije sigurnijim plasmanima i rastom kupovine državnih obveznica. Obratno, u godinama pada isplata primetan je rast rizičnijih plasmana u vidu veće aktivnosti na tržištu akcija.

Preleminarnim analizama nije ustanovljena normalna raspodela što se može zanemariti. U dobijenim rezultatima je najznačajnija vrednost Pearson Chi Square u tabeli 7. Korigovana vrednost Jejtsove promenljive iznosi 0,043 uz statističku značajnost $p = 0,050$ čime se može prihvatiti hipoteza H2 odnosno, dokazano je da postoji veza između promena isplata osiguranih suma i promena investicionog portfolija na tržištu životnog osiguranja. Porast isplata osiguranih suma na tržištu životnog osiguranja utiče na pojačanu investicionu aktivnost na tržištu obveznica državnog sektora i smanjenu aktivnost na tržištu akcija. Alternativno, pad isplata osiguranih suma na tržištu životnog osiguranja utiče na pad investicione aktivnosti na tržištu obveznica državnog sektora i porast aktivnosti na tržištu akcija.

Tabela 7. Hi kvadrat testovi

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

Izvor: Proračun autora u SPSS-u

Pored statističke značajnosti dobijenog rezultata potrebno je utvrditi jačinu veze odnosno veličinu uticaja. Podaci u tabeli 8 daju informaciju o tome da li je dokazana veza jaka ili slaba.

Tabela 8. Simetrična merenja

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

Izvor: Proračun autora u SPSS-u

U tu svrhu se koristi Cramer's V pokazatelj čija vrednost od 0.004 za tabele veće od 2 sa 2 govori o malom uticaju, odnosno o slaboj vezi između posmatranih promenljivih. Na kraju se može konstatovati da je statistički dokazano postojanje veze ispitivanih promenljivih ali je intezitet te veze slab odnosno uticaj je jako mali. Razloge treba tražiti u već ranije navedenoj opreznosti nosilaca tržišta osiguranja kao posledica izuzetne senzitivnosti korisnika osiguranja. Minimalni gubici ili potresi mogu ugroziti tržište životnog osiguranja. Svesni te činjenice, za sada se još uvek nisu stekli uslovi za rizičnije plasmane. Dodatno, zauzimanje sigurne i dugoročne pozicije je pozitivno prihvaćeno od strane korisnika u, još uvek, početnoj fazi razvoja ovog tržišta.

Zaključak

Rizici sa kojima su pojedinci i društvo suočeni zahtevaju mehanizme njihovog upravljanja i svodenja na prihvatljiviji nivo. Istorijski posmatrano uočava se neravnomeran razvoj globalnog tržišta koji je prisutan i danas. Disproporcijalan karakter onemogućava donošenje jedinstvenih zaključaka, već se oni mogu odnositi samo na geografski ograničene prostore ili organizacione celine. Činjenica je da stepen razvoja tržišta osiguranja prati dostignuti nivo privrednog razvoja. Kao sveprisutan fenomen, bez obzira na neujednačen karakter, tržište osiguranja se razvija. Taj razvoj je ubrzan globalizacijom tržišta i slobodnim kretanjem kapitala. Posmatrajući iz ugla osnovnog cilja poslovanja svake osiguravajuće kompanije – maksimizacije profita, moraju se pronalaziti načini njegove realizacije. Aktivnost na tržištu kapitala svih osiguravajućih kompanija je tržišna potreba a ne pitanje izbora. Ipak, osetljivost ovog tržišta na potrese i poverenje koje je lako izgubiti, naglašava potrebu opreznijih poslovnih odluka. One moraju biti takve da ne ugroze svoje poslovanje čime mogu uzdrmati celokupno tržište osiguranja imajući u vidu njegov karakter i osetljivost. U ovom radu su postavljene dve hipoteze koje su analizom potvrđene. Bez obzira na to treba napraviti razliku u tumačenjima dobijenih rezultata. Na tržištu neživotnog osiguranja promena isplata odštetnih zahteva ima uticaj na aktivnost na tržištu kapitala. Pored toga je taj uticaj jako veliki i veza između analiziranih varijabli je jaka. Potvrda druge hipoteze se mora protumačiti na drugačiji način. Na primeru životnog osiguranja je dobijen statistički značajan rezultat povezanosti i uticaja identičnih varijabli. Bez obzira na tu činjenicu, ostvarena

veza nije jaka, već je izrazito slaba i uticaj varijabli je jako mali. Zato se ne može usvojiti jedinstven zaključak na oba tržišta. Kao nedostatak ovog modela se može navesti uzorak sastavljen od država koje ne pripadaju jednom području ili grupi zemalja, pa se ne može izvesti zaključak koji bi bio globalniji i precizniji. Dodatno, analiza je vremenki ograničena na šest godina, pa bi nju svakako trebalo proširiti što je preporuka budućim autorima na ovu temu. Takođe je moguće uraditi uporednu analizu tržišta razvijenih i zemalja u razvoju koja će pokazati da li ima razlika u aktivnostima na tržištu kapitala i čime su one uslovljene. Uzorak čine podaci do 2019. godine odnosno analiza je rađena u periodu pre pandemije COVID-19. Uslovi na tržištu su već duže od 2 godine značajno promenjeni. Posledična kriza se reflektuje na sve sektore. Definicija tržišta osiguranja kao jako osetljivog na krizne periode, upućuje na zaključak da je došlo do promena u uslovima i načinu poslovanja privrednih subjekata. U periodu koji predstoji biće veliki izazov za nosioce tržišta da adekvatnom politikom i implementiranim strategijama sačuvaju i ojačaju tržišni poziciju. Iz tog razloga će saradnja privrede i naučnog sektora biti od posebne važnosti.

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

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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,

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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. (Andelinović 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 technical 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

$$rk = \sum_{l=1}^n f_{kl} \quad pl = \sum_{k=1}^r f_{kl}$$

(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 Nominal	Phi	-.028	.039
	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 (Olaewaju, & 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.

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